MAY 2023

RAISING THE BAR ON TEACHER PAY

Center on Great Teachers and Leaders at AIR & The Teacher Salary Project

Ellen Sherratt, *Teacher Salary Project* | Lisa Lachlan, *GTL Center at AIR* | Keane Alavi, *GTL Center at AIR*

AIR® Advancing Evidence. Improving Lives.

Center on Great Teachers and Leaders

THE TEACHER SALARY PROJECT

AMERICAN INSTITUTES FOR RESEARCH® | AIR.ORG

Acknowledgments

We thank Dean Gerdeman, Roddy Theobald, Laura Brady, and Alicia Espinoza at the American Institutes for Research® for their input and reviews. We also thank the following individuals for their insight and feedback on early drafts: Ben Erwin, Tiffany McDole, and Eric Syverson, from the Education Commission of the States, and Marcy Magid and Andy Jewell, from the National Education Association.

Any opinions, findings, and conclusions expressed in this brief are those of the authors and do not necessarily reflect the views of our funders, reviewers, or the institutions with which our reviewers are affiliated.

Contents

Exhibits

Introduction

Bipartisan support for raising teacher salaries has grown amid widespread teacher shortages across the United States. In January 2023, U.S. Secretary of Education Miguel Cardona (Cardona, 2023) announced the *Raise the Bar: Lead the World* initiative with the following statement:

> [We need to eliminate the] teacher shortage by providing a competitive salary. At a minimum, no teacher should make less than the average salary of people with similar degrees in their state.… We are working at the Department of Education to increase transparency on the teacher salary issue across the country and have called on states and districts to raise salaries to a competitive level. (para. 54–55)

To this end, leaders in Congress introduced the bipartisan *American Teacher Act* and the *Pay Teachers Act* this past year, both of which would significantly increase federal support for competitive teacher salaries. In addition, 26 governors, both Democratic and Republican, committed to raising teacher pay in their states.

Whether or not federal legislation is introduced, states and districts will play the most significant role in ensuring that teacher salaries are competitive enough to attract and retain diverse and talented educators. Many state and district leaders are actively engaged in addressing teacher shortages through more competitive teacher salaries, while others are still considering it. This brief is intended to help these state and district leaders determine whether the time is right to raise the bar on teacher pay and, if so, by how much.

Making a Compelling Case for Higher Teacher Pay Using National Statistics

Research and teacher salary data make a compelling case to increase teacher salaries as a necessary condition to improving teacher recruitment and retention. According to the Economic Policy Institute, the United States has reached a historic high in the national average difference in weekly wages between teachers and other college graduates. This difference increased from 6.1% in 1996 to 23.5% in 2021, varying widely from 2% in Wyoming and Rhode Island to more than 30% in Arizona and Virginia (Allegretto, 2022; Carver-Thomas & Patrick, 2022).[1] Teacher compensation can negatively impact current teachers in terms of their satisfaction and their retention in the classroom. Low salaries contribute to teachers working second and third jobs during the academic year and, in some cases, lead to teacher eligibility

[1] Other scholars using different calculations indicate more similarity between average salaries for teachers and other bachelor's degree holders in most states (Richwine & Biggs, 2011; West, 2014).

for public benefits. Furthermore, teacher salaries can influence those individuals who have teaching certificates (but are not teaching) and could otherwise be enticed to return to classrooms. Teacher salaries also affect college students who may otherwise consider a career in teaching. For more details, see the callout box below.

Teacher Salaries and Teacher Shortages—Findings From the Research Literature

- More than 36,000 teacher vacancies went unfilled in 2022–23 (Nguyen et al., 2022).
- Only 12% of teachers, an all-time low, are very satisfied with their chosen profession (Kurtz, 2022).
- Seventy-four percent of teachers believe that their salary is not fair for the work they do (an increase from 65% in 2011); only 7% strongly agree that their salary is fair (Merrimack College & EdWeek Research Center, 2022).
- Nearly one in five teachers work second jobs during the school year, a rate 3 times higher than for workers in other professions (Schaeffer, 2019).
- The highest salary teachers can earn is less than $60,000 per year in 16.9% of U.S. school districts. It is less than $100,000 in more than 87% of districts (National Education Association, 2023).
- In 42 states, a 10-year veteran teacher who heads a household of four is eligible for public benefits programs (Boser & Straus, 2014).
- Among teachers whose locality experienced teacher shortages, 91% believed that salaries contributed either greatly (59%) or somewhat (32%) to local teacher shortages (Sherratt et al., 2021).
- Two thirds of all teachers, and half of teachers of color, report that higher salaries are the best way to attract and retain a talented and diverse workforce (Educators for Excellence, 2023).
- Meta-analyses and comprehensive reviews of studies of teacher retention all confirm that salaries matter (Borman & Dowling, 2008; Guarino et al., 2006; See et al., 2020).
- Forty-five percent of teachers reported that their salary was not sufficient to keep them in the classroom for the medium to long term; 68% reported that their salary was either not sufficient or they were not sure whether it would be sufficient to prevent from finding new careers (Sherratt et al., 2021).
- Compensation (including benefits[2]) is the most commonly cited primary reason educators cite both for considering leaving (cited by 48% who plan to leave as a top reason why) and for explaining why they left (cited by 42% who left as a top reason why); among these educators, 69% believe that their total compensation does not reflect their qualifications and efforts, and 65% state that they cannot live comfortably off these earnings (Bryant et al., 2023).
- Sixty-seven percent of former teachers said that an increase in salary would be an extremely or very important factor if they decided to return to teaching (Sutcher et al., 2016).
- Market research on "top-third" college students' career aspirations found compensation to be the largest perceived gap between teaching and their preferred career choice. For example, only 17% believe that teaching pays appropriately for the skills and effort they would bring, compared to 72% who believe that their alternate career choice would do so. In addition, 33% believe that teaching would allow them to support a family, compared to 81% who believe that their alternate career choice would allow them to do so (Auguste et al., 2010, Exhibit 5).
- Sixty-two percent of parents (an all-time high) do not want their children to become teachers, and low salaries are the main reason why (PDK International, 2022).

[2] We recognize that teacher salaries are only one part of a package of compensation that includes health, dental, pension, and other benefits. Because of the recent public discourse focused on teacher salaries, we limit the present discussion to teacher salaries only. It is worth noting, however, that even when benefits are accounted for, teachers experience 14.2% lower wages than do their college education peers in other industries (Allegretto, 2022).

Grounding Decisions on Teacher Pay in Data

Although teacher salaries are the focus of this brief, other factors play a critical role in educator workforce development (for more, see the Talent Development Framework by the Center on Great Teachers & Leaders [GTL Center]). Until recently, attempts to take a comprehensive approach have focused on less expensive or less controversial factors than salaries.

Governors' Teacher Salary Commitments

As of May 7, 2023, 26 governors have announced recent commitments to raising teacher pay (for details, see Exhibit 1). These examples provide a starting place for other state and district leaders to consider what type of teacher salary commitments are competitive in their own jurisdictions.

Exhibit 1. Governors' Commitments to Teachers' Salaries

Alabama: Governor Ivey committed to increasing the base teacher salary across the state by signing the 2023 Education Trust Fund budget, starting with a 4% raise for all teachers and an intention to increase pay floors yearly (Ivey, 2023).

Arkansas: Governor Huckabee Sanders committed to a base teacher salary of $50,000 and to increasing teacher salaries from one of the lowest to one of the highest in the country (Boyd, 2023).

Colorado: Governor Polis committed to increasing education funding by 8%, and using part of this funding to continue competing for Colorado to have the highest paid teachers in the Southwest United States (Polis, 2022).

Delaware: Governor Carney committed to raising teacher salaries by 9% in the coming year and a Public Education Compensation Committee will make recommendations for additional teacher salary increases in November 2023 (Carney, 2023).

Florida: Governor DeSantis committed to spending $2 billion in funding to increase starting teacher pay during the 2023–24 school year; the largest teacher pay increase in the state's history (DeSantis, 2023).

Georgia: Governor Kemp committed to raising teacher salaries to improve educator recruitment and retention. In his 2023 budget, $643 million was earmarked for increasing teacher salary, with an initial action to increase teacher salaries by $5,000 (Kemp, 2022).

Mississippi: Governor Reeves committed to the largest increase in teacher salary in state history, providing teachers with an average increase of $5,140 (Pittman, 2022).

Missouri: Governor Parson committed to a base teacher salary from $25,000 to $38,000 and to provide additional salary increases to more than 18,000 teachers. In his 2024 budget brief, Governor Parson cited the fact that Missouri's teachers are some of the lowest paid in the nation as the motivation behind these increases (Parson, 2023).

Montana: Governor Gianforte committed to increasing teacher base pay through his 2025 Biennial Budget, allocating over $1 million a year toward the effort (Gianforte, 2023).

New Mexico: Governor Lujan Grisham committed to a minimum base teacher salary of $50,000 by signing New Mexico Senate Bill 1 into law (Office of the Governor, 2022). Additionally, this effort would increase minimum educator salary levels through the state's three-tier licensure system, with each level's minimum salary being $50,000, $60,000, and $70,000, respectively (Increasing the Minimum Salaries for Level One, Level Two and Level Three Licensed Teachers, 2022). This represents an average 35% total increase in base salary levels (Office of the Governor, 2022).

North Carolina: Governor Cooper committed to raising teacher and principal salaries by 7.5% over the next 2 years, with additional funds being allocated for establishing a system for teacher and principal retention bonuses (Cooper, 2023). Additionally, the North Carolina Board of Education passed a resolution to allocate funding for a minimum pay increase of 10% for teachers (Bass, 2023).

Oklahoma: Governor Stitt committed to raising pay for effective teachers by proposing performance-based pay raises for teachers in the state (Stitt, 2023).

Pennsylvania: Governor Shapiro committed to addressing teacher compensation through his Fiscal Year 2023–24 budget by offering teachers a refundable tax credit up to $2,500 a year for 3 years (Shapiro, 2023).

Idaho: Governor Little committed to spending $145 million to increase starting teacher pay to $47,477. In his 2023 State of the State Address, Governor Little announced his intention of bringing teacher pay in Idaho to the top 10 of the nation, proposing an increase in pay for all teachers, with an average increase in teacher salary of $6,300 (Education Commission of the States, 2023; Little, 2023).

Indiana: Governor Holcomb committed to raising the average teacher starting salary in the state from $40,000 to at least $60,000 per year (Holcomb, 2023).

Iowa: Governor Reynolds committed to increasing teacher salaries in the state by encouraging districts to use the almost $100 million earmarked for specific programs that remains unspent (Reynolds, 2023).

Kentucky: Governor Beshear committed to raising salaries for all teachers and other school staff by 5% through his Education First Plan (Staley & Ellis, 2022).

Louisiana: Governor Bel Edwards committed to increasing teacher pay over the next few years, proposing a $3,000 increase in his 2023 State of the State Address (Bel Edwards, 2023).

Maryland: Governor Moore committed to raising teacher and instructional support personnel salary to improve educator retention in the state, following his predecessor passing the Blueprint for Maryland's Future, which will increase teacher salaries to a minimum of $60,000 statewide by 2026 (Moore & Tydings Smith, 2022).

South Carolina: Governor McMaster committed to raising the minimum starting teacher salary to $50,000 by 2026, starting with a $2,500 increase in salary for all teachers over the next 2 years, increasing the new minimum starting teacher salary to $42,500 (McMaster, 2023).

Tennessee: Governor Bill Lee committed to a base teacher salary of $50,000, through a $125 million investment in teacher pay raises in the 2023–24 fiscal year (Lee, 2023;Tennesee Office of the Governor, 2023).

U.S. Virgin Islands: Governor Bryan committed to a base teacher salary of $50,000, a direct response to a teacher salary report created by the territory's American Federation of Teachers local union chapter (Gilbert, 2023; Government of the Virgin Islands, 2022).

Utah: Governor Cox committed to providing a $6,000 increase for all educators by 2024, the largest teacher pay increase in the state's history (Cox, 2023). The Utah State Legislature signed this increase into effect in early 2023, allocating $4,200 in salary and $1,800 in benefits per teacher (Funding for Teacher Salaries and Optional Education Opportunities, 2023).

Virginia: Governor Youngkin committed to raising the minimum teacher pay in the state. In his 2023 State of the State Address, Governor Youngkin proposed $50 million in performance-based bonuses for high-performing teachers (Youngkin, 2023).

Washington: Governor Inslee committed to raising teacher salary, beginning in the 2023–24 school year, by signing a 3.7% salary increase into effect (Sokol, 2023).

West Virginia: Governor Justice committed to raising teacher salary through his Fiscal Year 2024 budget, raising salaries by 5%, the largest increase in state history (Justice, 2023).

In determining whether teacher salaries need to be increased—and, if so, on what scale—state and district leaders should consider three intended outcomes:

1. Reduce or eliminate the pay penalty (i.e., the gap between teachers' salaries and those of comparably educated professionals).
2. Reduce or eliminate teachers' needs for public assistance and for second and third forms of employment during the academic year.
3. Minimize or eliminate teacher shortages.

Leaders may begin by asking, which of these three intended outcomes is most meaningful in the context? For which are data already available, or could data be efficiently collected? Is it feasible to strive for all three? What are the tradeoffs? Are there additional desired outcomes? There is no right answer, but each option merits some consideration.

As noted above, U.S. Department of Education guidance suggests that leaders address the first outcome by increasing teachers' salaries to a level at least as high as the average salary of people with similar degrees in their state (Cardona, 2023). Indeed, state and district leaders may wish to begin achieving competitive salaries by setting a goal for pay parity or an agreed-on teacher pay penalty (or advantage) that reflects the community's values.

Understanding the Magnitude of Teacher Shortages

Determining the existence, scope, and scale of a state or district's teacher shortage challenges is a complicated task. Sherratt (2015) outlines five common pitfalls that impede conversations about the nature and scale of teacher shortages and thus investments in meaningful solutions like higher teacher salaries:

1. Assuming there is a clear and simple answer as to whether there is a teacher shortage
2. A lack of consensus on the data that are indicative of teacher shortages
3. Imprecise characterization of "subject-specific shortages" or "geographically specific shortages"
4. The misuse of teacher shortage terminology
5. The absence of teacher shortage goals or targets

Best practice is to invest in rigorous teacher supply and demand reports (for guidance on developing such reports, see Lindsay et al., 2016). However, when the challenge is urgent and a comprehensive report is not available, states and districts can gauge the scale and nature of their challenges in less rigorous ways, such as the following:

- Consulting new nation-wide data collected by teacher shortage experts. In recent months, scholars have begun systematically documenting evidence of nationwide state-by-state teacher shortages at www.teachershortages.com (Nguyen et al., 2022).
- Surveying teachers locally or statewide, assessing relevant data points (e.g., importance of salary as it relates to retention, experience working second jobs during the school year)
- Surveying school district superintendents (e.g., see the Illinois Association of Regional Superintendents of Schools' annual report on teacher shortages [2023])
- Conducting a listening tour with parents, teachers, students, and school and district administrators
- Convening groups of leading teachers, in collaboration with teacher associations where available, to share their perspectives of the challenges they are observing or hearing about in the district and across the state
- Reviewing data from teaching job boards or employment agencies (e.g., see Indiana's Data-Driven Educator Supply and Demand Marketplace [Lawson, 2022])

Addressing the second and third outcomes requires leaders to engage in more nuanced analysis. For example, reducing or eliminating teacher eligibility for public assistance and the need to work additional jobs often requires additional data collection that may benefit from forging ground between state departments of education, social services, and labor. Meanwhile, the challenge of defining and measuring teacher shortages and the impact of salaries on different individuals' decisions at different points in their career trajectories may require in-depth stakeholder engagement and rigorous research. On the one hand, these come at a cost. On the other hand, regardless of how competitive teacher salaries may seem according to some indicators, at the end of the day, if there are not enough individuals with the right mix of skills, talent and dispositions who are willing and able to fill all needed teaching positions, salaries should be improved.

Examining State and District Approaches to Funding Teacher Salary Increases

Despite momentum generated toward increasing teacher salaries, many state and district leaders with an interest in increasing teacher pay have not yet done so. This may be partially due to the complex nature of federal, state, and local funding streams. Alongside increasing or reallocating local and state resources, several federal funding sources can be directed toward teacher pay, including Title I, Title II, and Individuals with Disabilities Education Act (IDEA) funds, as well as one-time funding sources, such as the Elementary and Secondary School Emergency Relief (ESSER) funds allocated by Congress through the American Rescue Plan of 2021. Below, we provide examples of how states and districts have applied multiple funding sources to sustainable teacher salary increases.

Detroit Public Schools Community District (DPSCD) is one example. Using ESSER funds, the district invested $168 million in their educator workforce over 4 years, including funds to increase educator compensation (DPSCD, 2022). Specifically, the district offered $3,000 in one-time hazard pay to all educators during the COVID-19 pandemic and increased teacher starting salaries by 33%, from $38,400 in 2017 to $51,071 in 2022. These salary increases stabilized the teacher workforce in a time of need; however, because ESSER funds must be obligated by September 30, 2024, the district faced a funding cliff that required alternative funding sources to sustain the salary increases. To date, DPSCD has reallocated Title II funds to provide performance-based

Funding Increases in Teacher Pay: Examples

States and districts have taken a variety of approaches to funding teacher salary increases. Visit the Teacher Salary Project's Resource Center to read examples from across the country. The examples given above and highlighted in this brief can serve as a starting point for leaders to consider which approach makes the best sense in their jurisdiction. To learn more about funding sources that can support sustainable teacher salary increases, see Center on Great Teachers & Leaders (2020).

bonuses (DPSCD, 2021b) and IDEA funds to provide special education teachers with a recurring $15,000 stipend (DPSCD, 2021a).

Meanwhile, in 360 Missouri districts, $12.5 million for teacher salary increases were funded through state lottery proceeds (Katnik, 2022). At the governor's request, this program was enacted into law by the Missouri General Assembly to ensure its sustainability. In Maryland, a mix of casino and sports betting revenues, new state funding formulas, and a ballot measure secured $3.9 billion per year for teacher salary increases (Maryland Association of Boards of Education, n.d.). Elsewhere, local mill levies, and overrides, careful budgeting, and political will and prioritization of teacher compensation have made improvements possible.

Funding salary increases via multiple sources can ensure that those increases are more sizable and more sustainable. Diversifying funding can increase buy-in from multiple stakeholders, thereby creating a greater source of sustainable funding.

Defining Competitive Teacher Salary

In defining a competitive teacher salary commitment for their jurisdictions, state and district leaders must use their judgment, ideally in collaboration with all key stakeholders, when considering the three intended outcomes highlighted above (reducing or eliminating the gap between teachers' salaries and that of comparably educated professionals, reducing or eliminating teachers' need for public assistance or additional employment, and minimizing or eliminating teacher shortages). Where possible, leaders should examine data at the local level to determine what salaries will effectively meet local labor market realities.

Exhibit 2 presents data to provide a useful starting place for state and district leaders to begin their exploration into the following areas of data:

1. Teachers' average annual salary and average annual starting salary
2. The calculated teacher pay penalty: how much less (or more), in percentage terms, public school teachers earn in wages than their college-educated, nonteaching peers earn[3]
3. The minimum living wage for the labor market for individuals with and without a family

[3] As noted by Goldhaber et al. (2022), researchers use different methods to calculate the pay penalty, which can lead to differing conclusions. Some studies adjust wages for degree level and relative labor markets, some use hourly wages (i.e., over the course of the school year), and others use annual wages (i.e., over the course of the calendar year). As noted in Exhibit 2, we use pay penalty data from Allegretto and Mishel (2020), who report state-specific "regression-adjusted teacher weekly wage penalties (or premiums): how much less (or more), in percentage terms, elementary, middle, and secondary public school teachers earn in weekly wages than their college-educated, nonteaching peers" (p. 5).

As can be seen, average annual teacher starting salaries range considerably, from less than $35,000 in Missouri and Montana to over $55,000 in the District of Columbia and New Jersey. Average annual salaries also vary considerably, from less than $50,000 in Mississippi to over $85,000 in California, Massachusetts, and New York. Yet these variations across states in the raw numbers are not apparent in the state-by-state teacher pay penalty data, which account for variations in cost-of-living and other factors. For example, Missouri, Montana and the District of Columbia's teacher pay penalty all hover around the national average (24.1%, 19.4%, and 21.3%, respectively). Likewise, Mississippi and California, despite having such disparate average teacher salaries, have nearly identical teacher pay penalties (15.2% and 15.5%, respectively). Meanwhile, Colorado is the only state where starting teacher pay is below the minimum living wage for a single person with no children (although Oregon is very close). In every state, however, the minimum salary required to raise a family is more than double what a beginning teacher earns and is far above the average annual teacher salary.

The Potential Impacts of Policy Shifts in Teacher Pay

To date, only a few studies have examined state policies that have dramatically increased teachers' salaries (Britton & Propper 2016; Loeb & Page, 2000). Yet a recent study of Washington state's court-ordered reform of teacher salaries illustrates the potential for large-scale salary change to influence teachers to move to high-need schools and a reduction in the number of vacancies (Sun et al., 2022). Studies of the world's top-performing school systems have also found that investments in competitive teacher salaries are a common ingredient for success (Barber & Mourshed, 2007; Darling-Hammond et al., 2017; National Center on Education and the Economy, 2021).

Importantly, there is no research on the potential impact of widespread and/or substantial increases to teacher salaries across the nation. The current level of leadership commitment and policy changes to ensuring that teaching is a livable profession may result in impacts unforeseen by a research base focused on isolated individual policy changes.

These data can inform initial decision-making about additional data collection needs and the types of salary conversations that need to take place with stakeholders.

Exhibit 2. Salaries and Living Wages for Teachers Across the United States

State	Average annual starting salary for teachers with a bachelor's degree, 2021–22 (with a master's degree)[a]	Average annual teacher salary, 2021–22[b]	Calculated teacher pay penalty, 2014–19[c]	Minimum living wage for a single adult with no children, 2022[d]	Minimum living wage for a single parent of two children, 2022[d]	Minimum living wage for two working parents of two children, 2022[d]
Alabama	$41,974 ($48,182)	$55,834	24.6%	$32,547	$83,800	$93,484
Alaska	$50,203 (56,058)	$74,167	9.7%	$35,671	$94,760	$104,045
Arizona	$41,496 ($44,111)	$56,775	31.8%	$36,985	$90,013	$99,853
Arkansas	$37,168 ($41,388)	$52,610	17.7%	$31,719	$84,599	$93,552
California	$51,600 (—)	$88,508	15.5%	$44,175	$117,481	$125,037
Colorado	$37,124 ($40,796)	$60,130	28.8%	$39,978	$109,606	$118,025
Connecticut	$48,007 ($52,048)	$81,185	13.5%	$36,937	$101,924	$110,175
Delaware	$44,037 ($50,064)	$65,647	9.8%	$36,114	$95,188	$103,871
District of Columbia	$56,313 ($60,067)	$82,523	21.3%	$46,082	$115,451	$122,501
Florida	$45,171 ($47,496)	$51,230	19.3%	$36,848	$95,600	$104,311
Georgia	$38,926 ($44,164)	$62,240	25.1%	$36,862	$89,190	$98,658

State	Average annual starting salary for teachers with a bachelor's degree, 2021–22 (with a master's degree)[a]	Average annual teacher salary, 2021–22[b]	Calculated teacher pay penalty, 2014–19[c]	Minimum living wage for a single adult with no children, 2022[d]	Minimum living wage for a single parent of two children, 2022[d]	Minimum living wage for two working parents of two children, 2022[d]
Hawaii	$50,123 ($54,132)	$67,000	10.9%	$45,854	$114,599	$123,002
Idaho	$40,394 ($42,465)	$54,232	20.9%	$33,422	$87,189	$97,094
Illinois	$42,213 ($46,460)	$72,315	18.7%	$37,641	$97,365	$106,557
Indiana	$40,959 (—)	$54,596	21.3%	$32,832	$83,568	$93,182
Iowa	$39,208 (—)	$59,581	14.7%	$32,713	$88,181	$97,405
Kansas	$40,130 ($43,200)	$54,988	21.8%	$32,643	$87,379	$96,664
Kentucky	$38,010 ($41,842)	$54,574	22.2%	$32,129	$86,887	$96,513
Louisiana	$43,270 ($44,180)	$54,097	23.3%	$32,993	$86,537	$95,638
Maine	$39,101 ($41,824)	$58,757	23.1%	$34,382	$93,580	$102,272
Maryland	$49,451 ($52,155)	$75,766	11.4%	$40,798	$105,257	$113,650
Massachusetts	$49,503 ($53,353)	$89,538	18.0%	$44,405	$128,082	$135,016
Michigan	$38,963 (—)	$64,884	15.9%	$33,851	$105,904	$114,237

State	Average annual starting salary for teachers with a bachelor's degree, 2021–22 (with a master's degree)[a]	Average annual teacher salary, 2021–22[b]	Calculated teacher pay penalty, 2014–19[c]	Minimum living wage for a single adult with no children, 2022[d]	Minimum living wage for a single parent of two children, 2022[d]	Minimum living wage for two working parents of two children, 2022[d]
Minnesota	$42,293 ($47,721)	$64,184	22.5%	$35,320	$95,409	$103,914
Mississippi	$37,729 ($40,080)	$47,902	15.2%	$32,073	$80,772	$89,991
Missouri	$34,052 ($36,952)	$52,481	24.1%	$32,801	$85,921	$95,208
Montana	$33,568 ($37,673)	$53,628	19.4%	$32,689	$93,242	$102,729
Nebraska	$37,186 ($44,040)	$57,420	17.7%	$32,722	$90,070	$99,171
Nevada	$42,552 ($49,058)	$57,804	16.6%	$35,399	$96,807	$105,935
New Hampshire	$40,272 ($43,960)	$62,783	18.2%	$35,847	$97,144	$105,586
New Jersey	$55,143 ($59,043)	$79,045	3.1%	$38,910	$110,311	$118,297
New Mexico	$42,981 ($43,105)	$54,272	29.5%	$33,435	$87,415	$97,384
New York	$47,981 ($52,678)	$91,097	12.0%	$44,627	$113,130	$120,752
North Carolina	$37,676 ($41,448)	$54,863	25.3%	$35,012	$96,507	$105,561
North Dakota	$41,587 ($45,291)	$55,666	16.4%	$31,937	$87,030	$96,152

State	Average annual starting salary for teachers with a bachelor's degree, 2021–22 (with a master's degree)[a]	Average annual teacher salary, 2021–22[b]	Calculated teacher pay penalty, 2014–19[c]	Minimum living wage for a single adult with no children, 2022[d]	Minimum living wage for a single parent of two children, 2022[d]	Minimum living wage for two working parents of two children, 2022[d]
Ohio	$39,094 ($43,317)	$64,353	15.2%	$31,890	$92,831	$102,061
Oklahoma	$38,154 ($39,592)	$54,804	29.0%	$32,228	$87,262	$96,803
Oregon	$40,374 ($44,933)	$70,402	27.3%	$40,312	$100,300	$110,076
Pennsylvania	$47,827 ($51,789)	$73,072	13.0%	$34,128	$92,402	$101,652
Rhode Island	$45,337 ($49,822)	$76,852	2.1%	$36,443	$95,844	$104,521
South Carolina	$38,929 ($44,223)	$54,814	13.4%	$34,806	$81,383	$90,593
South Dakota	$41,170 ($45,221)	$50,592	18.0%	$31,509	$85,414	$94,783
Tennessee	$40,280 ($43,857)	$53,285	21.4%	$33,257	$81,925	$91,262
Texas	$45,493 ($48,443)	$58,887	21.9%	$34,931	$89,051	$98,267
Utah	$46,880 ($50,890)	$59,671	23.3%	$36,225	$95,027	$104,611
Vermont	$41,587 ($46,522)	$62,866	12.7%	$34,992	$95,463	$104,193
Virginia	$43,845 ($46,666)	$61,367	32.7%	$39,599	$102,399	$110,781

State	Average annual starting salary for teachers with a bachelor's degree, 2021–22 (with a master's degree)[a]	Average annual teacher salary, 2021–22[b]	Calculated teacher pay penalty, 2014–19[c]	Minimum living wage for a single adult with no children, 2022[d]	Minimum living wage for a single parent of two children, 2022[d]	Minimum living wage for two working parents of two children, 2022[d]
Washington	$52,142 (—)	$81,510	28.1%	$40,722	$103,397	$112,017
West Virginia	$38,052 ($40,880)	$50,315	18.2%	$32,381	$90,163	$99,926
Wisconsin	$39,955 (—)	$60,724	19.9%	$33,409	$96,275	$104,812
Wyoming	$47,321 ($51,890)	$60,819	2.0%	$32,532	$86,335	$96,183

[a] Average annual starting salaries are based on data from the National Education Association (NEA) Research and Publications Salary Trends (2023).

[b] Average annual teacher salaries are based on data from Teacher Salary Benchmarks Report: NEA (2023).

[c] Calculated teacher pay penalty data are from Allegretto and Mishel (2020, Figure B), who report state-specific "regression-adjusted teacher weekly wage penalties (or premiums): how much less (or more), in percentage terms, elementary, middle, and secondary public school teachers earn in weekly wages than their college-educated, nonteaching peers" (p. 5). The authors analyzed pooled 2014–19 Current Population Survey Outgoing Rotation Groups data.

[d] Living wage data are accessible from the Massachusetts Institute of Technology (MIT) Living Wage Calculator (Glasmeier, 2023), which estimates the cost of living in each community or region based on typical expenses. Here, we highlight state-level living wage per hour for a family of four with both parents working. The tool also provides information for individuals and households with one or two working adults and zero to three children. Where possible, leaders should use county-level data from the Bureau of Labor Statistics because it is more reflective of local labor markets within states.

Considering Differentiated Salary Policies

Once policy and funding streams are revised and enacted to generate competitive salaries for teachers, leaders may want to consider the value of differentiated salary policies for teachers in underserved school communities and teachers with high-demand degrees and endorsements (e.g., special educators; multilingual teachers; and science, technology, engineering, and mathematics [STEM] teachers). Financial incentives such as targeted bonuses, loan forgiveness, tuition reimbursement, and housing assistance can provide a lower cost way to attract teachers in subject areas with consistently high vacancy rates or to schools that are difficult to staff (National Center for Analysis of Longitudinal Data in Education Research, 2015).

However, policymakers should consider two caveats when contemplating differentiated salary policies:

1. Differentiated salary policies can have negative and unintended consequences. For example, imagine a state or district that has an acute need for improving recruitment, retention, effectiveness, or morale, but only for a very specific subset of teachers, such as teachers of color or teachers in STEM or special education. Increasing salaries specifically for these populations or offering targeted scholarships or other incentives may seem appealing, but doing so may also raise questions such as the following:
    - Will the differentiated salary policy for teachers in the areas of greatest shortage be large enough to impact recruitment and retention? If so, is it possible that such a large difference might lower morale or even increase attrition among teachers with lower salaries?
    - Are the state's or district's definitions of "acute teacher shortage" clear enough to withstand criticism? What benchmark is viable? That is, if there are some teacher shortage challenges in seven or eight subject areas, but only two or three are defined as acute challenges that qualify teachers for higher salaries, then is there sufficient justification for maintaining teacher shortages in the areas where they are less acute, such as elementary education, world languages, bilingual education, and career and technical education? National data show evidence of teacher shortages in *all* subject areas at the start of the 2022–23 school year, although they range in magnitude from 47% of schools struggling to fill physical education teaching positions with qualified staff to 78% of schools struggling to fill positions in special education and physical sciences (Institute of Education Sciences, n.d.).

- If the areas of acute teacher shortage change over time, will it be feasible to adjust incoming teachers' salaries to reflect the changing local or state teacher labor market? For example, if differentiated pay for the long-standing shortage area of special education leads to a reduction in the shortage in special education teachers, will it be feasible to then lower incoming special education teachers' salaries when the shortage is no longer a major challenge?

2. Differentiated salary policies are often contingent on state funding and become less of a priority when funding dries up. Leaders face a dilemma in that, if the targeted incentives support too few teachers or at too low a dollar value, they fail to overcome the teacher shortage; but if the targeted incentives are broadly available to many teachers and sufficiently large enough to influence a teachers' career decisions, they quickly become too expensive to sustain. It is a challenge to identify the combination of an incentive's monetary size, the number of teachers eligible, and the required years of service teachers must complete to earn the incentive while balancing affordability with achieving the intended impact both in the short and long-term.

These caveats and other possible unintended consequences should be considered to ensure that salary increases improve rather than worsen teacher shortages over the long term.

Conclusion

Recruiting and retaining talent requires attention to a host of factors beyond financial compensation. These factors include a positive working environment, supportive leadership, strong induction and mentoring support, opportunities for professional growth and advancement, high-quality initial preparation, and thoughtful and proactive recruitment and retention practices. A stable, competent, and committed teacher corps can help bring these other important elements to life. In contrast, when teachers are stressed and demoralized, preoccupied with second and third jobs, or unavailable, the elements of a more comprehensive approach to recruitment and retention come to a standstill.

With this brief, we intend to support state and district leaders in designing teacher salary policies as a necessary condition for a more comprehensive suite of human capital policies and practices. By presenting national research on current teacher salaries, summarizing recent commitments to increase teacher pay made by state governors, and outlining state-by-state data and guidance for considering teacher salary increases, we provide a starting place for discussions among state and district leaders and their stakeholders that will lead to the investments in teachers that are needed to deliver a high-quality education for all students.

References

Allegretto, S. (2022). *The teacher pay penalty has hit a new high.* Economic Policy Institute. https://www.epi.org/publication/teacher-pay-penalty-2022/

Allegretto, S., & Mishel, L. (2020). *Teacher pay penalty dips but persists in 2019.* Economic Policy Institute. https://files.epi.org/pdf/207502.pdf

Auguste, B., Kihn, P., & Miller, M. (2010). *Closing the talent gap: Attracting and retaining top-third graduates to careers in teaching.* McKinsey & Company. https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20insights/closing%20the%20teaching%20talent%20gap/closing-the-teaching-talent-gap.pdf

Barber, M., & Mourshed, M. (2007). *How the world's best-performing school systems come out on top*. McKinsey & Company. https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20insights/how%20the%20worlds%20best%20performing%20school%20systems%20come%20out%20on%20top/how_the_world_s_best-performing_school_systems_come_out_on_top.pdf

Bass, D. N. (2023, March 3). *NC Board of education recommends minimum 10% raise for teachers.* The Carolina Journal. https://www.carolinajournal.com/nc-board-of-education-recommends-minimum-10-raise-for-teachers/

Bel Edwards, J. (2023, April 10). *Governor Edwards' 2023 regular session remarks* [Speech transcript]. https://gov.louisiana.gov/index.cfm/newsroom/detail/4057

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research, 78*(3), 367–409. https://doi.org/10.3102/0034654308321455

Boser, U., & Straus, C. (2014, July 23). *Mid- and late-career teachers struggle with paltry incomes*. Center on American Progress. https://www.americanprogress.org/article/mid-and-late-career-teachers-struggle-with-paltry-incomes/

Boyd, S. (2023, February 8). *Proposed teacher pay raises in Gov. Sarah Huckabee Sanders' Arkansas LEARNS plan*. KARK. https://www.kark.com/news/your-local-election-hq/proposed-teacher-raises-in-gov-sarah-huckabee-sanders-arkansas-learns-plan/

Britton, J., & Propper, C. (2016). Teacher pay and school productivity: Exploiting wage regulation. *Journal of Public Economics, 133*(C), 75–89. https://econpapers.repec.org/article/eeepubeco/v_3a133_3ay_3a2016_3ai_3ac_3ap_3a75-89.htm

Bryant, J., Ram, S., Scott, D., & Williams, C. (2023). *K–12 teachers are quitting: What would make them stay?* McKinsey & Company. https://www.mckinsey.com/industries/education/our-insights/k-12-teachers-are-quitting-what-would-make-them-stay

Cardona, M. (2023, January 24). *Remarks by the U.S. Secretary of Education Miguel Cardona on Raise the Bar: Lead the World* [Speech transcript]. https://www.ed.gov/news/speeches/remarks-us-secretary-education-miguel-cardona-raise-bar-lead-world

Carney, J. (2023, January 17). *Governor Carney announces raises for Delaware teachers, investments in opportunity funding, WLC*. https://news.delaware.gov/2023/01/17/governor-carney-announces-raises-for-delaware-teachers-investments-in-opportunity-funding-wlc/

Carver-Thomas, D., & Patrick, S. (2022). *Understanding teacher compensation: A state by state analysis.* Learning Policy Institute. https://learningpolicyinstitute.org/product/understanding-teacher-compensation-state-by-state-analysis

Center on Great Teachers & Leaders. (2020). *Investing in talent development: A funding guide for supporting the teacher workforce with federal, private, and state funds.* American Institutes for Research. https://gtlcenter.org/sites/default/files/TDF_Funding%20Guide_06_16_20.pdf

Cooper, R. (2023). *Governor's budget recommendations: Fiscal years 2023–25.* North Carolina Office of State Budget and Management. https://www.osbm.nc.gov/budget/governors-budget-recommendations

Cox, S. J. (2023). *Governor's budget recommendations: Fiscal year 2024 budget recommendations*. https://gopb.utah.gov/wp-content/uploads/2022/12/2022_12_09-Gov.-Cox-FY-24-Budget-Book.pdf

Darling-Hammond, L., Burns, D., Campbell, C., Goodwin, A. L., Hammerness, K., Low, E.-L., McIntyre, A., Sato, M., & Zeichner, K. (2017). *Empowered educators: How high-performing systems shape teacher quality around the world*. Jossey-Bass.

DeSantis, R. (2023, January 23). *Governor Ron DeSantis announces unprecedented legislation to empower educators, protect teachers from overreaching school unions and raise teacher pay.* https://www.flgov.com/2023/01/23/governor-ron-desantis-announces-unprecedented-legislation-to-empower-educators-protect-teachers-from-overreaching-school-unions-and-raise-teacher-pay/

Detroit Public Schools Community District. (2021a). *DPSCD offers recurring $15,000 bonus for select special education teachers* [Press release]. https://www.detroitk12.org/site/default.aspx?PageType=3&DomainID=4&ModuleInstanceID=4585&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=52604&PageID=1#:~:text=To%20help%20drive%20it%20down,the%202021-2022%20school%20year

Detroit Public Schools Community District. (2021b). *FY 2021–2022 budget detail.* https://www.detroitk12.org/cms/lib/MI50000060/Centricity/Domain/5316/FY%2022%20Budget%20Book%20Final.pdf

Detroit Public Schools Community District. (2022). *DPSCD supplemental COVID funding and expenditures*. https://www.detroitk12.org/Page/16825

Education Commission of the States. (2023). *2023 State of the State Addresses: Education-related proposals*. Education Commission of the States. https://c0arw235.caspio.com/dp/b7f9300069668ed490464e6083ce

Educators for Excellence. (2023). *Voices from the classroom: A survey of America's educators.* https://e4e.org/sites/default/files/voices_from_the_classroom_2023.pdf

Funding for Teacher Salaries and Optional Education Opportunities, H.B. 215, Utah State Legislature. (2023). https://le.utah.gov/~2023/bills/static/HB0215.html

Gianforte, G. (2023). *2025 biennium executive budget. Section E: Education.* https://budget.mt.gov/_docs/execbudgets/2025_Budget/Section-E.pdf

Gilbert, E. (2023, January 27). *Starting salary for USVI teachers climbs to $50,000 beginning in September, Governor Bryan has announced*. The Virgin Islands Consortium.

https://viconsortium.com/caribbean-education/virgin-islands-starting-salary-for-usvi-teachers-climbs-to-50000-beginning-in-september-governor-bryan-has-announced

Glasmeier, A. K. (2023). *Living wage calculator.* Massachusetts Institute of Technology. https://livingwage.mit.edu/

Goldhaber, D., Krieg, J., Theobald, R., & Liddle, S. (2022). Lost to the system? A descriptive exploration of teacher candidates' career paths. *Educational Researcher*, *51*(4), 255–264. https://doi.org/10.3102/0013189X221077042

Government of the Virgin Islands. (2022). *Governor signs wage agreement with teachers' union* [Press release]. https://www.vi.gov/governor-signs-wage-agreement-with-teachers-union/

Guarino, C. M., Santibañez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*, *76*(2), 173–208. https://doi.org/10.3102/ 00346543076002173

Holcomb, E. (2023). *Governor Holcomb's 2023 State of the State Address* [Video]. YouTube. https://www.youtube.com/watch?v=hpbMmXKYUyo

Illinois Association of Regional Superintendents of Schools. (2023). *2022–2023 educator shortage* [Website]. https://iarss.org/2022-educator-shortage/

Increasing the Minimum Salaries for Level One, Level Two and Level Three Licensed Teachers, S.B. 1, 55th legislature, State of New Mexico. (2022). https://www.nmlegis.gov/Sessions/22%20Regular/bills/senate/SB0001.pdf

Institute of Education Sciences. (n.d.). *School pulse panel.* https://ies.ed.gov/schoolsurvey/spp/

Ivey, K. (2023). *State of Alabama executive budget: Fiscal year 2023.* https://budget.alabama.gov/wp-content/uploads/2022/01/FINAL-FOR-WEBSITE.pdf

Justice, J. (2023, March 17). *Gov. Justice signs into law 4th state employee pay raise, budget bill, and other legislation* [Press release]. https://governor.wv.gov/News/press-releases/2023/Pages/Gov.-Justice-signs-into-law-4th-state-employee-pay-raise,-budget-bill,-and-other-legislation.aspx

Katnik, P. (2022). *Teacher recruitment and retention in Missouri.* National Association of State Boards of Education. https://nasbe.nyc3.digitaloceanspaces.com/2022/09/Katnik_Sept-2022-Standard.pdf

Kemp, B. P. (2022). *The governor's budget report. Amended fiscal year 2022 and fiscal year 2023*. https://opb.georgia.gov/afy-2022-and-fy-2023-governors-budget-report-0

Kurtz, H. (2022, April 14). *A profession in crisis: Findings from a national teacher survey.* EdWeek Research Center. https://www.edweek.org/research-center/reports/teaching-profession-in-crisis-national-teacher-survey

Lawson, H. (2022). *First phase of marketplace to provide data supporting and strengthening Indiana's educator pipeline.* Indiana Department of Education. https://www.in.gov/doe/about/news/indiana-department-of-education-launches-data-driven-educator-supply-and-demand-marketplace/

Lee, B. (2023). *2023 State of the State Address* [Speech transcript]. https://www.tn.gov/governor/sots/2023-state-of-the-state-address

Lindsay, J., Wan, Y., Berg-Jacobson, A., Walston, J., & Redford, J. (2016). *Strategies for estimating teacher supply and demand using student and teacher data* (REL 2017–197). U.S. Department of Education, Institute of Education Sciences. https://files.eric.ed.gov/fulltext/ED570977.pdf

Little, B. (2023). *2023 State of the State and Budget Address* [Speech transcript]. https://bloximages.chicago2.vip.townnews.com/idahopress.com/content/tncms/assets/v3/editorial/b/2f/b2f49512-9045-11ed-b5ad-bfd537540a77/63bc534c2f6a7.pdf.pdf

Loeb, S., & Page, M. (2000). Examining the link between teacher wages and student outcomes: The importance of alternative labor market opportunities and non-pecuniary variation. *Review of Economics and Statistics*, *82*(3), 393–408.

Maryland Association of Boards of Education. (n.d.). *Background of the Kirwan Commission & blueprint for Maryland's future*. https://www.mabe.org/advocacy/blueprint-advocacy-resources/

McMaster, H. (2023, January 6). *Governor McMaster announces FY 2023–2024 executive budget* [Speech transcript]. https://governor.sc.gov/news/2023-01/gov-henry-mcmaster-announces-fy-2023-2024-executive-budget

Merrimack College & EdWeek Research Center. (2022). *First Annual Merrimack College American Teacher Survey: Results*. Merrimack College.

Moore, W., & Tydings Smith, M. (2022). *Addressing Maryland's teacher shortages.* https://wesmoore.com/wp-content/uploads/2022/09/Wes-Moore-Teacher-Shortage-One-Pager-Final.pdf

National Center for Analysis of Longitudinal Data in Education Research. (2015). *Missing elements in the discussion of teacher shortages.* https://caldercenter.org/sites/default/files/Missing%20Elements%20in%20the%20Disucssion%20of%20Teacher%20Shortages%20PDF.pdf

National Center on Education and the Economy. (2021). *NCEE's blueprint for a high-performing education system.* https://ncee.org/blueprint/#

National Education Association. (2023). Average salaries of public school teachers [Table B-6]. In *Rankings of the states 2022 and estimates of school statistics 2023.* https://www.nea.org/sites/default/files/2023-04/2023-rankings-and-estimates-report.pdf

National Education Association Research and Publications Salary Trends. (2023). *Rankings of the states 2022 and estimates of school statistics 2023*. https://www.nea.org/sites/default/files/2023-04/2023-rankings-and-estimates-report.pdf

Nguyen, T. D., Lam, C. B., & Bruno, P. (2022). *Is there a national teacher shortage? A systematic examination of reports of teacher shortage in the United States* (EdWorkingPaper No. 22-631). Annenberg Institute at Brown University. https://www.edworkingpapers.com/sites/default/files/ai22-631.pdf

Office of the Governor. (2022, February 14). *Gov. Lujan Grisham proposal to increase teacher pay passes House unanimously, heads to fourth floor for signature* [Press release]. https://www.governor.state.nm.us/2022/02/14/gov-lujan-grisham-proposal-to-increase-teacher-pay-passes-house-unanimously-heads-to-fourth-floor-for-signature/

Parson, M. L. (2023). *Not done yet: Budget and legislative priorities fiscal year 2024.* https://governor.mo.gov/priorities/governor-parsons-2024-budget-brief

PDK International. (2022). *The 54th Annual PDK Poll: Local public school ratings rise, even as the teaching profession loses ground.* https://pdkpoll.org/2022-pdk-poll-results/

Pittman, A. (2022, April 1). *Gov. Tate Reeves signs average $5,140 teacher pay raise into law.* Mississippi Free Press. https://www.mississippifreepress.org/22459/gov-tate-reeves-signs-largest-teacher-pay-raise-in-state-history-into-law

Polis, J. [@jaredpolis]. (2022, January 3). *We proposed increasing education funding by 8% in our budget to support our schools and teachers. If Colorado and New Mexico are competing over best paid teachers in the Southwest, that's a good competition to have!* [Tweet]. Twitter. https://twitter.com/jaredpolis/status/1478130766802415616?lang=en

Reynolds, K. (2023). *Gov. Reynolds delivers 2023 Condition of the State* [Press release]. https://governor.iowa.gov/press-release/2023-01-10/gov-reynolds-delivers-2023-condition-state

Richwine, J., & Biggs, A. G. (2011). *Assessing the compensation of public-school teachers* (A Report of the Heritage Center for Data Analysis, CDA 11-03). The Heritage Foundation. https://eric.ed.gov/?id=ED525685

Schaeffer, K. (2019, July 1). *About one-in-six U.S. teachers work second jobs – and not just in the summer*. Pew Research Center. https://www.pewresearch.org/short-reads/2019/07/01/about-one-in-six-u-s-teachers-work-second-jobs-and-not-just-in-the-summer/

See, B. H., Morris, R., Gorard, S., Kokotsaki, D., & Abdi, S. (2020). Teacher recruitment and retention: A critical review of international evidence of most promising interventions. *Education Sciences*, *10*(10), Article 262. https://doi.org/10.3390/educsci10100262

Shapiro, J. (2023). *Governor Shapiro delivers his budget address* [Video]. YouTube. https://www.youtube.com/watch?v=hnnQvoZXGnw

Sherratt, E. (2015). *Creating coherence in the teacher shortage debate: What policy leaders should know and do.* Education Policy Center at American Institutes for Research. https://www.air.org/sites/default/files/downloads/report/Creating-Coherence-Teacher-Shortage-Debate-June-2016.pdf

Sherratt, E., Calegari, N., & Bassett, K. (2021). *Teacher salaries and teacher shortages: The view from the classroom.* Teacher Salary Project. https://www.teachersalaryproject.org/uploads/1/3/9/1/139153593/tsp-report-final_kb_edit.pdf

Sokol, T. (2023, April 22). *Gov. Jay Inslee approves salary increase for teachers*. Newsradio 560KPQ. https://kpq.com/gov-jay-inslee-approves-salary-increases-for-teachers/

Staley, C., & Ellis, S. (2022, October 27). *Gov. Beshear proposes Education First Plan to advance student learning, ease teacher shortage* [Press release]. Kentucky Office of the Governor. https://www.kentucky.gov/Pages/Activity-stream.aspx?n=GovernorBeshear&prId=1551

Stitt, J. K. (2023). *State of the State Address 2023* [Speech transcript]. https://oklahoma.gov/content/dam/ok/en/governor/documents/2023%20STATE%20OF%20THE%20STATE%20FINAL%20ENGLISH.pdf

Sun, M., Candelaria, C. A., Knight, D., LeClair, Z., Kabourek, S. E., & Chang, K. (2022). *The effects and local implementation of school finance reforms on teacher salary, hiring and turnover* (EdWorkingPaper: 22-585). Annenberg Institute at Brown University. https://www.edworkingpapers.com/sites/default/files/ai22-585.pdf

Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand and shortages in the U.S.* Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/A_Coming_Crisis_in_Teaching_BRIEF.pdf

Tennessee Office of the Governor. (2023, February 26). *Gov. Lee Delivers 2023 State of the State Address—"Tennessee: Leading the Nation."* https://www.tn.gov/governor/news/2023/2/6/gov-lee-delivers-2023-state-of-the-state-address-tennessee--leading-the-nation.html#:~:text=%E2%80%9CTennessee%20is%20leading%20the%20nation,%2C%20innovation%20and%20economic%20prosperity.%E2%80%9D

West, K. L. (2014). New measures of teachers' work hours and implications for wage comparisons*. Education Finance and Policy, 9*(3), 231–263. https://doi.org/10.1162/EDFP_a_00133

Youngkin, G. (2023). *The State of the Commonwealth Address* [Speech transcript]. https://www.governor.virginia.gov/newsroom/news-releases/2023/january/name-979187-en.html#:~:text=Governor%20Glenn%20Youngkin&text=Governor.Virginia.gov

About AIR

Established in 1946, the American Institutes for Research® (AIR®) is a nonpartisan, not-for-profit organization that conducts behavioral and social science research and delivers technical assistance both domestically and internationally in the areas of education, health, and the workforce. AIR's work is driven by its mission to generate and use rigorous evidence that contributes to a better, more equitable world. With headquarters in Arlington, Virginia, AIR has offices across the U.S. and abroad. For more information, visit AIR.ORG.

AIR® Headquarters
1400 Crystal Drive, 10th Floor
Arlington, VA 22202-3289
+1.202.403.5000 | **AIR.ORG**

21130–Cover-v2_05/23