The U.S. K-12 Teacher Shortage:
Pay, Working Conditions & Solutions

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Abstract

As one of the most influential countries in the world, the United States (U.S.) has long been recognized for its high-quality education, attracting millions of people to seek educational opportunities. However, the teacher shortage in K-12 education has persisted for decades, with no practical solutions to address it. This evidence-based study uncovers that two primary factors, relatively low salaries and demanding working conditions, contribute to the shortage. The shortage challenges not only seriously reduce teacher retention rate but also dramatically discourage new graduates from entering the profession, further exacerbating the shortage. Although the shortage is severe and escalating, the issue remains inadequately examined and addressed. This evidence-based study, drawing on various data sources on education and compensation, aims to identify the primary root causes and propose feasible solutions to help address the teacher shortage in the U.S.

Keywords: Teacher shortage, Low pay, Working environment, Retention

1. Introduction

The teacher shortage in the U.S. is both real and pressing. The Learning Policy Institute (LPI, 2025) reported that 48 states and the District of Columbia (D.C.) employed approximately 365,967 teachers who lacked full certification for their assignments, while 31 states and the D.C. documented 45,582 vacant teaching positions. The combined total amounted to 411,549 positions nationwide that were either unfilled or filled by teachers without full certification—representing roughly one in every eight teaching jobs. Alarmingly, this marked a worsening trend: the number of teachers not fully certified in 2025 grew by about 4,600 compared to 2024. Moreover, the Department of Education uncovered that all states and the D.C. faced teacher shortages during the 2024-2025 academic year.

Furthermore, the National Center for Education Statistics (NCES) reported that 86% of public schools faced challenges in hiring teachers for the 2023-24 school year, identifying general elementary teachers (71%) and special education teachers (70%) as the two most difficult positions to fill. The LPI (2025) indicates that the shortage is primarily driven by decreasing entrants into the profession and high attrition rates. However, these explanations only reveal surface-level symptoms. This study aims to identify the primary underlying causes of the U.S. teacher shortage through data analysis and empirical evidence, proposing strategies to address this escalating crisis.

2. Method

This research is designed as an evidence-based study to probe the root causes of the teacher shortage in the United States. Robinson et al. (2021) defined evidence-based research as the

use of prior research systematically and transparently to inform a new study, so that it answers questions that matter in a valid, efficient, and accessible manner. The term "evidence-based" was first used by David Eddy in 1985 in speeches and workshops, and then published in a 1990 article on evidence-based guidelines (Eddy, 1990; Eddy, 2011). Although evidence-based research was originally discussed and applied in the medical industry, it has been expanded to education.

There are some challenges to conducting evidence-based research. To address the challenges, the Evidence-Based Research Network, an educational and scientific organization seeking to promote, implement, and monitor the transparent and systematic use of evidence to inform research decisions, proposes three strategies for designing and implementing evidence-based research. These strategies include: (1) using a systematic and transparent approach when justifying and designing a new study, (2) applying a systematic and transparent approach when interpreting new results in the context of existing evidence, and (3) producing, updating, and disseminating systematic reviews more efficiently.

This study followed evidence-based research guidelines and strategies, drawing on empirical studies and data reports published by official organizations (Learning Policy Institute (LPI), National Association of Colleges & Employers (NACE), National Center for Education Statistics (NCES), National Education Association (NEA), United States Department of Education (USDE) to examine the root causes of the teacher shortage in the U.S. The results and discussion are well supported by empirical research and official data.

3. Results

The LPI (2016) and many scholars (Anderson, 2023; Delarosa & Robelen, 2023; Ingersoll, 2001; Podolsky et al., 2016) argue that the teacher shortage in the U.S. stems from fewer people entering the profession and high rates of teacher attrition. However, these explanations reflect only superficial factors rather than the root causes. The main deeper issues driving the shortage are relatively low pay and demanding working conditions (Allegretto & Mishel, 2019). Low pay and demanding working conditions not only discourage people from entering the profession but also lead many pre-service and in-service teachers to leave their positions (Ingersoll, 2003; Sutcher et al., 2016).

3.1 Low Pay & Poor Compensation

The NEA reported that the national average public school teacher salary for the 2023-2024 academic year was $72,030. At first glance, this figure suggests that teachers earned a reasonable income. However, the average starting teacher salary was only $46,526. In comparison, the Social Security Administration (SSA) reported the national average wage index for 2023 as $66,621.80, indicating that newly hired teachers earned about $20,000 less than other professionals. New teachers already face multiple challenges, and earning below the national average exacerbates these difficulties. Even for experienced teachers, the average salary was only $4,726 higher than the national average wage. Furthermore, data from the NCES show that private school teachers earned even less.

Selected teaching occupation	Employment 2016		Employment 2019		Employment 2022		Average annual wage (in current dollars) 2016		2019		2022		Average annual wage (in constant 2022 dollars)[1] 2016		2019	
1	2		3		4		5		6		7		8		9	
Public[2]																
Elementary and secondary schools, all occupations[3]	7,548,890	(#)	7,663,290	(#)	7,427,120	(#)	$49,800	(149)	$53,290	(160)	$59,140	(237)	$60,720	(182)	$61,000	(183)
Preschool teachers[4,5]	44,710	(1,341)	49,230	(1,280)	51,580	(1,238)	51,270	(872)	53,560	(428)	57,980	(522)	62,520	(1,063)	61,310	(490)
Kindergarten teachers[4,6]	125,450	(2,258)	108,450	(2,820)	101,380	(1,419)	59,280	(415)	62,880	(503)	68,000	(612)	72,280	(506)	71,980	(576)
Elementary school teachers[4,6]	1,240,460	(11,164)	1,249,010	(11,241)	1,238,490	(9,908)	61,180	(306)	66,240	(331)	69,760	(488)	74,600	(373)	75,830	(379)
Middle school teachers[4,7]	553,700	(9,967)	567,660	(10,786)	539,290	(9,707)	61,850	(371)	66,190	(530)	69,320	(485)	75,420	(453)	75,770	(606)
Secondary school teachers[4,7]	887,340	(9,761)	891,710	(10,701)	880,210	(10,563)	62,790	(314)	67,010	(335)	71,040	(426)	76,560	(383)	76,710	(384)
Middle school career/technical education (CTE) teachers[8]	12,920	(1,576)	11,190	(1,276)	10,510	(294)	62,840	(1,068)	67,830	(1,221)	68,090	(613)	76,620	(1,303)	77,650	(1,398)
Secondary school CTE teachers[8]	77,900	(1,870)	67,190	(1,478)	80,790	(1,373)	61,360	(491)	65,450	(393)	67,790	(678)	74,820	(599)	74,920	(450)
Preschool special education teachers[9]	18,320	(1,081)	10,840	(358)	14,170	(978)	57,470	(690)	63,240	(569)	66,990	(871)	70,080	(841)	72,390	(652)
Kindergarten and elementary school special education teachers[9]	170,910	(2,564)	175,680	(2,811)	180,370	(2,525)	61,870	(371)	64,900	(454)	69,270	(485)	75,440	(453)	74,290	(520)
Middle school special education teachers[9]	80,270	(2,167)	81,540	(2,202)	78,010	(1,950)	63,350	(760)	67,300	(740)	70,240	(632)	77,250	(927)	77,040	(847)
Secondary school special education teachers[9]	115,760	(2,084)	123,290	(2,466)	135,020	(1,755)	65,920	(1,187)	66,940	(536)	72,600	(436)	80,380	(1,447)	76,630	(613)
Teaching assistants[10]	940,350	(6,582)	991,080	(5,946)	963,950	(4,820)	27,980	(140)	29,930	(120)	34,330	(172)	34,120	(171)	34,260	(137)
Short-term substitute teachers[11]	504,640	(8,579)	472,410	(8,976)	322,780	(6,456)	31,370	(188)	32,460	(227)	44,100	(353)	38,250	(230)	37,160	(260)
Private																
Elementary and secondary schools, all occupations[3]	802,520	(#)	879,500	(#)	909,840	(#)	$46,160	(277)	$49,510	(297)	$55,150	(386)	$56,290	(338)	$56,670	(340)
Preschool teachers[4,5]	22,310	(1,227)	23,110	(1,456)	23,400	(889)	33,870	(576)	36,550	(658)	41,920	(545)	41,300	(702)	41,840	(753)
Kindergarten teachers[4,6]	14,820	(474)	14,890	(715)	15,100	(453)	42,610	(511)	46,040	(829)	50,310	(553)	51,960	(623)	52,700	(949)
Elementary school teachers[4,6]	136,920	(2,875)	142,850	(3,000)	143,210	(2,435)	45,370	(499)	49,400	(642)	53,200	(585)	55,320	(609)	56,550	(735)
Middle school teachers[4,7]	61,170	(1,835)	---	(†)	68,140	(1,437)	50,550	(657)	51,980	(572)	56,060	(505)	61,640	(801)	59,500	(655)
Secondary school teachers[4,7]	114,950	(3,104)	127,200	(3,816)	141,600	(3,398)	53,940	(539)	57,650	(519)	60,530	(484)	65,770	(658)	65,990	(594)
Middle school CTE teachers[8]	1,120	(259)	---	(†)	590	(91)	55,720	(3,622)	50,840	(3,000)	60,470	(3,024)	67,940	(4,416)	58,200	(3,434)
Secondary school CTE teachers[8]	1,850	(155)	2,020	(156)	2,680	(247)	49,830	(1,196)	57,680	(1,730)	63,840	(958)	60,760	(1,458)	66,030	(1,981)
Preschool special education teachers[9]	1,390	(338)	1,350	(173)	1,510	(334)	44,600	(5,129)	55,370	(3,045)	62,860	(4,589)	54,380	(6,254)	63,380	(3,486)
Kindergarten and elementary school special education teachers[9]	9,020	(740)	11,620	(1,023)	10,060	(533)	48,480	(1,018)	53,280	(1,119)	56,560	(679)	59,110	(1,241)	60,990	(1,281)
Middle school special education teachers[9]	4,730	(402)	3,880	(361)	4,410	(304)	48,910	(831)	54,630	(1,694)	57,120	(743)	59,640	(1,014)	62,540	(1,939)
Secondary school special education teachers[9]	8,660	(710)	10,820	(1,104)	11,400	(1,231)	51,960	(883)	53,730	(1,290)	58,410	(1,110)	63,360	(1,077)	61,510	(1,476)
Teaching assistants[10]	81,740	(1,962)	88,430	(2,122)	94,920	(2,088)	27,150	(244)	28,920	(202)	33,210	(232)	33,110	(298)	33,110	(232)

Figure 1. The employment & annual wage in teaching occupations

Figure 1 presents the most recent data on average salaries in the teaching profession. In 2022, the average salary for all teaching-related occupations in public schools was $59,140, with teaching assistants earning an average annual salary of $34,300. Teachers in private elementary and secondary schools earned even less, with an average salary of $55,150. Furthermore, the salary data reported by the National Association of Colleges and Employers (NACE) reveal a greater pay disparity between teachers and other professionals. The Summer 2023 Salary Survey Report documents the actual starting salaries of 2022 college graduates. About 346 colleges and universities across the country, covering nearly 828,516 graduates at the associate, bachelor's, master's, and doctoral levels, submitted the salary information to the NACE.

BROAD CATEGORY	AVERAGE STARTING SALARY CLASS OF 2022	AVERAGE STARTING SALARY CLASS OF 2021	% CHANGE
Computer & Information Sciences	$86,964	$81,202	7.1%
Engineering	$76,249	$71,516	6.6%
Mathematics & Statistics	$76,186	$68,929	10.5%
Business	$61,970	$57,186	8.4%
Health Professions & Related Programs	$58,849	$54,133	8.7%

Figure 2. Top-paid categories of majors among Class of 2022/bachelor's degrees

BROAD CATEGORY	AVERAGE STARTING SALARY CLASS OF 2022	AVERAGE STARTING SALARY CLASS OF 2021	% CHANGE
Computer & Information Sciences	$105,894	$102,782	3.0%
Engineering	$98,036	$92,889	5.5%
Engineering Technologies	$90,607	$84,292	7.5%
Business	$87,976	$78,545	12.0%
Mathematics & Statistics	$83,444	$78,370	6.5%

Figure 3. Top-paid categories of majors among Class of 2022/master's degrees

Figures 2 and 3 indicate that graduates in computer and information sciences, as well as engineering, received the highest salaries at both the undergraduate and graduate levels for the Class of 2022. Business and mathematics/statistics graduates also earned relatively strong salaries across both levels. While wages for mathematics/statistics graduates showed little difference between undergraduate and graduate degrees, a significant gap was revealed between business graduates at the two levels. Overall, graduates in computer and information sciences, engineering, business, and mathematics/statistics were well-paid, with bachelor's degree graduates in health professions and related fields also earning competitive salaries. The Summer 2024 Salary Survey Report records the actual starting salaries of 2023 college graduates. About 356 colleges and universities across the country, covering nearly 772,865 graduates at the associate, bachelor's, master's, and doctoral levels, submitted the salary information to the NACE.

BROAD CATEGORY	AVERAGE STARTING SALARY CLASS OF 2023	AVERAGE STARTING SALARY CLASS OF 2022	% CHANGE
Computer and Information Sciences	$91,411	$86,964	5.1%
Engineering	$80,085	$76,249	5.0%
Mathematics and Statistics	$79,859	$76,186	4.8%
Business	$66,578	$61,970	7.4%
Health Professions and Related Programs	$62,143	$58,849	5.6%

Figure 4. Top-paid categories of majors among Class of 2023/bachelor's degrees

BROAD CATEGORY	AVERAGE STARTING SALARY CLASS OF 2023	AVERAGE STARTING SALARY CLASS OF 2022	% CHANGE
Computer and Information Sciences	$114,144	$105,894	7.8%
Engineering	$102,268	$98,036	4.3%
Engineering Technologies	$90,432	$90,607	-0.2%
Business	$89,542	$87,976	1.8%
Mathematics and Statistics	$84,751	$83,444	1.6%

Figure 5. Top-paid categories of majors among Class of 2023/master's degrees

Figures 4 and 5 show that graduates from computer and information sciences and engineering

earned the highest salaries at both the undergraduate and graduate levels for the Class of 2023. Business and mathematics/statistics graduates also received solid salaries across both levels. While wages for mathematics and statistics graduates showed slight variation between undergraduate and graduate degrees, a wide gap was revealed between business graduates at the two levels. Overall, graduates in computer and information sciences, engineering, business, mathematics, and statistics earned high salaries. At the same time, those with bachelor's degrees in health professions and related disciplines also received competitive compensation. The Winter 2024 Salary Survey Report has not yet been released. The Winter 2024 Salary Survey Report projects the annual salary for 2024 college graduates. Employer members of the NACE submitted the data.

BROAD CATEGORY	2024 SALARY PROJECTION	2023 SALARY PROJECTION	% CHANGE
Engineering	$76,736	$74,405	3.1%
Computer Sciences	$74,778	$72,843	2.7%
Math and Sciences	$71,076	$67,199	5.8%
Social Sciences	$69,802	$60,107	16.1%
Humanities	$68,227	$52,938	28.9%
Business	$63,907	$62,069	3.0%
Communications	$62,205	$58,097	7.1%
Agriculture and Natural Resources	$61,399	$59,282	3.6%

Figure 6. Average salaries by discipline/bachelor's degrees

BROAD CATEGORY	2024 SALARY PROJECTION	2023 SALARY PROJECTION	% CHANGE
Computer Sciences	$85,403	$83,681	2.1%
Engineering	$83,628	$86,826	-3.7%
Math and Sciences	$83,380	$82,848	0.6%
Business	$75,303	$80,305	-6.2%

Figure 7. Average salaries by discipline/master's degrees

Figures 6 and 7 display the projected salaries that graduates in computer science, engineering, mathematics, the sciences, and business are expected to earn at both the undergraduate and graduate levels for the Class of 2024. In particular, for the first time in three years, undergraduate graduates in the social sciences and humanities would out-earn their peers in business programs. Meanwhile, graduates in communications and in agricultural and natural resources are projected to receive competitive salaries. The Winter 2025 Salary Survey Report features starting salary projections by major, based on employer-provided data.

BROAD CATEGORY	2025 SALARY PROJECTION	2024 SALARY PROJECTION	% CHANGE
Engineering	$78,731	$76,736	2.6%
Computer Sciences	$76,251	$74,778	2.0%
Math and Sciences	$69,709	$71,076	-1.9%
Social Sciences	$67,316	$69,802	-3.6%
Business	$65,276	$63,907	2.1%
Agriculture and Natural Resources	$63,122	$61,399	2.8%
Communications	$60,353	$62,205	-3.0%

Figure 8. Average salaries by discipline/bachelor's degrees

BROAD CATEGORY	2025 SALARY PROJECTION	2024 SALARY PROJECTION	% CHANGE
Engineering	$94,086	$83,628	12.5%
Computer Sciences	$84,960	$85,403	-0.5%
Business	$77,632	$75,303	3.1%
Math and Sciences	$75,140	$83,380	-9.9%

Figure 9. Average salaries by discipline/master's degrees

Figures 8 and 9 project that graduates in engineering, computer science, mathematics, the sciences, and business will earn the highest salaries at both the undergraduate and graduate levels for the Class of 2025. Consistent with the projections for the Class of 2024, undergraduate graduates in the social sciences are expected to out-earn their peers in business programs. Additionally, graduates in agricultural and natural resources, as well as those in communications, are anticipated to receive competitive salaries.

The figures 1-9 highlight a substantial salary gap between recent graduates in science and technology fields and the average earnings of teachers in public and private schools. Teachers have been paid relatively low, resulting in a steady decline in the number of people entering the profession. Strikingly, data from the EPI and the Center on Wage and Employment Dynamics at the University of California, Berkeley (UC Berkeley) show that teachers earned a record 21.4% less than other professionals. More importantly, the following chart from the EPL Current Population Survey documents that the wage gap between teachers and other college-educated professionals widened to a record 26.6% in 2023 (EPL, 2024).
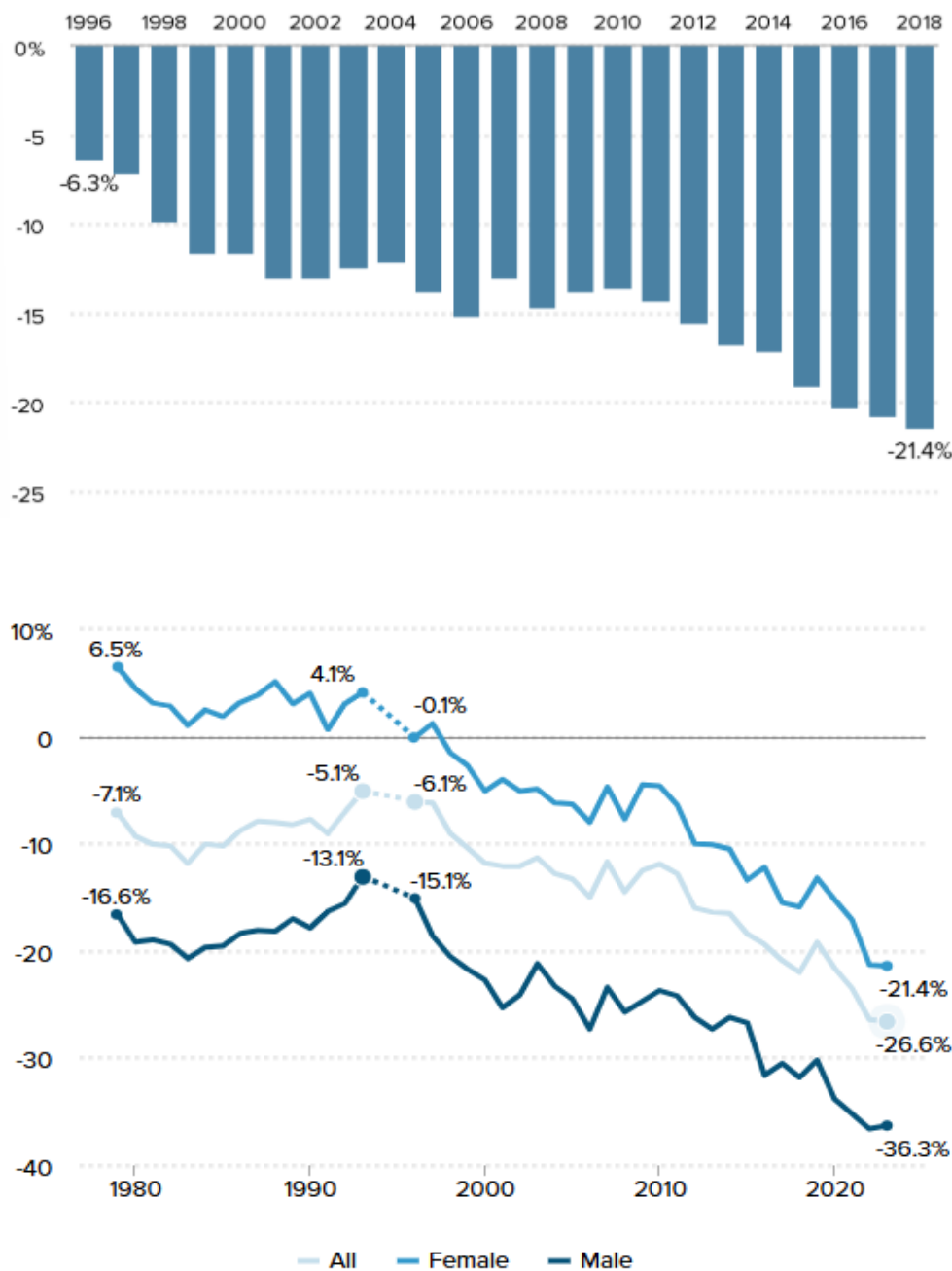
Figure 10. Teacher wage gap

The salary data above show that teachers earn less than professionals in other fields with comparable degrees and training. Empirical studies further confirm the issue of low compensation. In Aydin et al.'s (2015) study, 14.6% teachers specifically cited low pay as a major concern for their lower social status compared to other professions. In the teacher interviews, one teacher stated that low pay contributed to status loss. Moreover, Kozlowski and Lauens (2019) conducted a qualitative study involving approximately 150 teachers and 20 administrators from 13 of the lowest-performing school districts in North Carolina to explore how educators view performance incentives in relation to their own practices. The

findings indicated a similar trend that teachers were paid low. Two teachers, whom the researcher interviewed in border regions, expressed their intention to seek teaching jobs in Virginia and South Carolina due to significantly higher teacher salaries there than in North Carolina. The low pay not only affects the teachers' well-being but also has broader implications for student outcomes, as it can lead to high turnover rates and a shortage of qualified educators.

3.2 Demanding Work Environments

Teaching work environments are demanding and challenging, especially when including students with disabilities in general education settings. Although K-12 teachers' responsibilities vary across schools, most are required to plan lessons, teach in the classroom, grade and provide feedback on student assignments, interact with students both inside and outside the school, communicate with parents, participate in non-teaching activities, serve on school committees, and engage in professional development. Nearly a decade ago, Greenberg et al. (2016) identified teaching as one of the most stressful occupations in the U.S.

The high demands of educating students with special needs place significant burdens on classroom teachers serving students with special education needs that are not staffed by certified special education teachers (Billingsley & Bettini, 2019; Mason-Williams et al., 2020). Mainstream teachers, who are experienced in general teaching practices and capable of instructing regular students, often struggle to manage classrooms that accommodate students with special needs without training or certification in special education (Youngs, Jones & Low, 2011). Their lessons are frequently disrupted, and teaching plans cannot be implemented as intended. Although professional development in special education is provided to regular teachers, they are often already overwhelmed by extensive teaching and administrative responsibilities (Spear-Swerling & Cheesman, 2012). Periodic training alone is insufficient to equip non-special education teachers to effectively manage these classrooms and deliver instruction as originally planned (Bettini et al., 2018).

Building on these challenges, Diliberti et al. (2021) highlighted that the demanding nature of teaching contributed significantly to teacher shortages, a problem intensified by the COVID-19 pandemic. They surveyed nearly 1,000 former public school teachers and found that stress associated with long hours, low pay, limited schedule flexibility, and inadequate administrative support was the main reason for leaving. Many sought positions with lower demands, greater autonomy, and improved work-life balance, underscoring the urgent need for interventions to support teacher retention. Similarly, Ingersoll and Tran (2023) argued that persistent teacher shortages in rural schools were largely driven by high rates of preretirement turnover, often described as a "revolving door" due to the high attrition rate. In high-poverty rural districts, annual turnover rates could reach 28%. Surveys showed that job dissatisfaction was the primary reason teachers left, with over 60% citing ineffective school administration, high accountability pressures, limited classroom autonomy, and minimal influence over decision-making. Additional challenges, including professional isolation, scarce resources, and limited career advancement opportunities, further increased stress and contributed to high-pressure work environments, prompting many educators to move to urban or suburban

schools and worsening rural staffing shortages. Pressured by heavy workloads and low pay, teachers increasingly report low job satisfaction. Kraft and Lyon (2024) note that professional prestige and job satisfaction among teachers have been declining nationwide for more than a decade. That erosion shows up in concrete indicators: teachers earned 26.6% less than other college-educated workers in 2023, a record wage gap that depresses morale and prestige.

4. Discussion

4.1 Solutions to Cope with the Teacher Shortage

The teacher shortage in the U.S. is real and serious, as evidenced by the data. Low pay, high demands, and challenging working conditions place heavy burdens on teachers, contributing to declining job satisfaction and high attrition rates. To address this persistent and pressing problem, federal, state, and local governments have implemented various measures. Many pathway programs, such as Teach for America (TFA), have been established to fill K-12 teaching positions, but these efforts remain limited in addressing the shortage, leaving the issue largely unresolved. To address the shortage, policymakers must first understand its root causes and implement targeted solutions. Education data indicate that low pay and demanding working conditions are the primary factors driving the shortage in the U.S. Three solutions are recommended to solve this pressing issue. We select solutions using three criteria: (a) strength and consistency of evidence for retention or recruitment effects; (b) scalability and fiscal feasibility across varied state contexts; and (c) alignment to the root-cause logic established in Section 2. The three recommendations below target compensation and conditions.

4.1.1 Increase Teachers' Salary

Significantly increasing teachers' salaries would not only attract more individuals to the profession but also retain experienced educators, ensuring stability and a high retention rate in schools. Although teachers' salaries have been increased, the increase is far from enough to offset inflation (Allegretto, 2024; Katz et al., 2018; NEA Rankings & Estimates, 2024). Senators Bernie Sanders and Edward Markey have reintroduced education bills that call for raising the minimum teacher salary to $60,000 and setting the minimum wage for support staff at $45,000 annually, or $30 per hour (Education Week). Raising the starting salary to $60,000, $13,474 more than the average entry-level salary in the 2023-24 academic year, will be a critical step in addressing the worsening teacher shortage. Without bold action, schools will continue to lose talented educators to other professions. Both indexing salary schedules to inflation and establishing minimum starting salaries create predictable, compounding retention effects, particularly for early-career teachers. States can pursue either a statewide floor (with equalization aid) or incentive matches that help districts raise salary schedules without destabilizing local budgets. Brief fiscal notes—cost per pupil and estimated vacancy reduction—should accompany enactment.

Empirical evidence supports salary increases in mitigating teacher shortages. For instance, a report from the LPI emphasizes that low pay is a primary driver of attrition and reduced entry into the profession, recommending competitive compensation as a measurable solution to

boost recruitment and retention (García & Weiss, 2019). Similarly, the Economic Policy Institute documents that closing the teacher pay penalty—currently at a record 26.6% compared to other college graduates—could reverse declining interest in teaching, with data showing that states that have implemented targeted raises are experiencing lower vacancy rates (Tan et al., 2024). Research from the Education Commission of the States further demonstrates that data-driven salary adjustments, such as those tied to cost-of-living indices, have led to measurable improvements in teacher supply in multiple states, highlighting fiscal feasibility and positive impacts on workforce stability (Allegretto & Mishel, 2019).

4.1.2 Hire More Teaching Assistants & Substitute Teachers

More significantly, a large number of teachers face burnout due to the extensive teaching and non-teaching responsibilities, which exacerbate stress and contribute to high rates of teacher attrition. Hiring additional teaching assistants and substitute teachers would help distribute the workload more effectively, allowing teachers to focus on instruction and ultimately reducing the risk of attrition. Kistler et al. (2024) found that teaching assistants and substitute teachers not only brought valuable diversity to classrooms and provided essential support to permanent teachers, but also served as a pipeline into the profession. During the school years 2014-15 through 2023-24, 24 teaching assistants and 168 substitute teachers transitioned into permanent teachers (Kistler et al., 2024). This longitudinal study demonstrates that hiring teaching assistants and substitute teachers is effective to support teachers. Impact depends on role clarity and training. Districts should: (1) define TA responsibilities that concretely reduce teacher load (*e.g.*, supervised small-group practice, progress monitoring); (2) fund short, paid training modules tied to curricula; and (3) build pipelines that let effective teaching assistants earn credentials while working. Track metrics—teacher planning time gained, coverage rates, and mid-year vacancy changes—to evaluate returns.

Authorities confirm that expanding support staff roles alleviates teacher burnout and addresses shortages. A study by the IRIS Connect research team shows that strategically deploying teaching assistants reduces teachers' workload stress, improves classroom management, and lowers attrition rates, with evidence from U.K. and U.S. implementations indicating up to a 20% decrease in reported burnout (Van Droogenbroeck et al., 2014). The American Association of School Personnel Administrators reports that schools with more assistants and substitutes experience higher retention, as these roles provide practical relief from administrative burdens, supported by data from over 500 districts (Azeez et al., 2025).

4.1.3 Emphasize the Importance of Education

The Singaporean government not only emphasized the pivotal role of education in national development but also institutionalized it as a cornerstone in its national policy. Education expenditure ranks third among all governmental sectors in Singapore. A series of education reforms were introduced and implemented over the decades, including the New Education System in 1979, the Gifted Education Programme in 1984, the National Education Program in 1997, the Compulsory Education Act in 2000, and the School Excellence Model in 2003 (Salleh, 2022). These sustained efforts have played a crucial role in transforming Singapore into a developed country with a highly competitive global economy (Mundy et al., 2016).

In contrast, China has long upheld a deep cultural respect for educators. The proverb "A teacher for a day is a father for a lifetime," passed down for centuries, reflects the longstanding societal esteem for educators. This cultural legacy remains recognized in contemporary China. Teachers' Day, observed annually on September 10, is a significant national event that honors educators and their contributions to society. In the U.S., neither the government nor parents demonstrates strong respect for teachers, which contributes to low morale within the profession. Cultivating greater societal appreciation for educators can provide teachers with meaningful emotional support while reinforcing their sense of professional value. Public esteem for teaching has softened in recent years; messaging that connects teaching to community well-being, local workforce needs, and student mental health resonates more than generic 'respect' appeals. States and districts can partner with employers to offer visible recognition, practicum sites, and tuition supports that signal prestige while expanding preparation capacity.

Research underscores the role of societal respect and prestige in teacher retention and attraction. A National Bureau of Economic Research (NBER) working paper by Kraft and Lyon (2024) analyzes historical data showing that declines in teaching's occupational prestige correlate with reduced interest and higher attrition, recommending policy efforts to elevate status for long-term workforce benefits. An international study in the International Journal of Educational Development (Van den Borre, Spruyt, & Van Droogenbroeck, 2021) finds that perceived societal appreciation predicts job satisfaction and retention, with teachers in high-respect contexts (*e.g.*, Finland) reporting 15-20% lower turnover. Similarly, Akiba et al. (2023) found that undervalued teachers experience lower morale and are more likely to resign, while ASCD's global trends analysis suggests that enhancing prestige through public campaigns and partnerships can attract talent, as seen in high-performing systems such as Singapore. The teacher shortage in the U.S. has persisted for decades, posing a significant challenge to the quality and stability of K-12 education.

In short, it is recommended to raise pay, rebalance the workload, and rebuild prestige through concrete support to address the teacher shortage in the U.S. Achieving these goals requires stable state funding and a thoughtful district-level role design, rather than temporary incentives or one-off bonuses. We also suggest a basic data infrastructure—standardized vacancy dashboards and annual retention reports, through which policymakers can see where investments make a difference and adjust in real time. Findings should be interpreted with three caveats: (1) vacancy and certification data are not uniformly reported across states; (2) local labor markets and cost-of-living differences can confound salary effects; and (3) sustainability depends on state and district finance structures. Future work should pair administrative data with longitudinal retention tracking to strengthen causal inference.

References

Akiba, M., Byun, S. Y., Jiang, X., Kim, K., & Moran, A. J. (2023). Do teachers feel valued in society? Occupational value of the teaching profession in OECD countries. *AERA Open, 9*, 23328584231179184. https://doi.org/10.1177/23328584231179184

Allegretto, S. (2024). *Teacher Pay Rises in 2023—But Not Enough to Shrink Pay Gap with*

Other College Graduates. Economic Policy Institute.

Allegretto, S., & Mishel, L. (2019). *The teacher's weekly wage penalty hit 21.4 percent in 2018, a record high: Trends in the teacher wage and compensation penalties through 2018*.

Anderson, R. E. (2023). In the States: Addressing the teacher shortage. *Change: The Magazine of Higher Learning, 55*(4), 30-32. https://doi.org/10.1080/00091383.2023.2213573

Aydin, I., Demir, T. G., & Erdemli, O. (2015). Teachers' views regarding the social status of the teaching profession. *The Anthropologist, 22*(2), 146-156. https://doi.org/10.1080/0972 0073.2015.11891865

Azeez, N. O., Katibi, S. O., Okorie, G. S., & Dauda, R. B. (2025). *Digital workload, teacher burnout, and retention strategies in public secondary schools, Kajola Local Government, Oyo State, Nigeria*.

Bettini, E., Jones, N. D., Brownell, M. T., & Conroy, M. A. (2018). A case for induction support for special education teachers: Voices from the field. *Exceptional Children, 84*(3), 209-228.

Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Educational Research, 89*(5), 697-744. https://doi.org/ 10.3102/0034654319862495

Delarosa, J., & Robelen, E. (2023). *Most public schools face challenges in hiring teachers and other personnel entering the 2023-24 academic year*. National Center for Education Statistics.

Diliberti, M., Schwartz, H. L., & Grant, D. M. (2021). *Stress topped the reasons why public school teachers quit, even before COVID-19*.

Eddy, D. M. (1990). Practice policies: Where do they come from? *Jama, 263*(9), 1265-1275. https://doi.org/10.1001/jama.1990.03440090103036

Eddy, D. M. (2011). *The origins of evidence-based medicine: A personal perspective*.

García, E., & Weiss, E. (2019). The Teacher Shortage Is Real, Large, and Growing, and Worse than We Thought. *The First Report in "The Perfect Storm in the Teacher Labor Market" Series*. Economic Policy Institute.

Greenberg, M. T., Brown, J. L., & Abenavoli, R. M. (2016). *Teacher stress and health effects on teachers, students, and schools* (pp. 1-12). Edna Bennett Pierce Prevention Research Center, Pennsylvania State University.

Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal, 38*(3), 499-534. https://doi.org/10.3102/00028312 038003499

Ingersoll, R. M. (2003). *Is there really a teacher shortage?* Center for the Study of Teaching and Policy, University of Washington. Retrieved from https://repository.upenn.edu/handle/

20.500.14332/8390

Ingersoll, R. M., & Tran, H. (2023). Teacher shortages and turnover in rural schools in the US: An organizational analysis. *Educational Administration Quarterly, 59*(2), 396-431. http://doi.org/10.1177/0013161X231159922

Jennifer Vilcarino. (2025). *The Push for a $60K Minimum Salary for Teachers Has Reached Congress—Again*. Education Week. Retrieved from https://www.edweek.org/policy-politics/the-push-for-a-60k-minimum-salary-for-teachers-has-reached-congress-again/2025/07

Katz, N., Apfelbaum, K. W., Frank, S., & Miles, K. H. (2018). Low teacher salaries 101. *Education Resource Strategies*, 2-16.

Kistler, H. C., Djamaoeddin, B., Donohue, K., Papay, J. P., & Schwartz, N. L. (2024). *Pathways to the Teaching Profession: Teaching Assistants' and Substitute Teachers' Transitions into the Teacher Workforce* (EdWorkingPaper No. 24-1089). Annenberg Institute for School Reform at Brown University. https://doi.org/10.26300/cb5b-aq50

Kozlowski, K. P., & Lauen, D. L. (2019). Understanding teacher pay for performance: Flawed assumptions and disappointing results. *Teachers College Record, 121*(2), 1-38. https://doi.org/10.1177/016146811912100206

Kraft, M. A., & Lyon, M. A. (2024). The rise and fall of the teaching profession: Prestige, interest, preparation, and satisfaction over the last half century. *American Educational Research Journal, 61*(6), 1192-1236. https://doi.org/10.3102/00028312241276856

Mason-Williams, L., Bettini, E., Peyton, D., Harvey, A., Rosenberg, M., & Sindelar, P. (2020). Rethinking shortages in special education: Making good on the promise of an equal opportunity for students with disabilities. *Teacher Education and Special Education, 43*(1), 45-62. https://doi.org/10.1177/0888406419880352

Mundy, K., Green, A., Lingard, B., & Verger, A. (2016). *Handbook of global education policy*. John Wiley & Sons. https://doi.org/10.1002/9781118468005

NACE (National Association of Colleges and Employers). (n.d.). *Salary Survey*. Retrieved from https://www.naceweb.org/store/subscription/salary-survey

National Education Association of the United States. (1929). *NEA Research Bulletin* (Vol. 7). Research Division, National Education Association.

NCES (The National Center for Education Statistics). (2024). *Public State and Local Education Job Openings, Hires, and Separations for February 2024*.

Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute. https://doi.org/10.54300/262.960

Robinson, K. A., Brunnhuber, K., Ciliska, D., Juhl, C. B., Christensen, R., & Lund, H. (2021). Evidence-based research series-paper 1: What evidence-based research is and why it is important. *Journal of Clinical Epidemiology, 129*, 151-157. https://doi.org/10.1016/j.jclinepi.

2020.07.020

Salleh, H. (2022). *Overview of education in Singapore*.

Social Security Administration. (2023). *Indexing Factors for Earnings*. Retrieved from https://www.ssa.gov/oact/cola/AWI.html

Spear-Swerling, L., & Cheesman, E. (2012). Teachers' knowledge base for implementing response-to-intervention models in reading. *Reading and Writing, 25*(7), 1691-1723. https://doi.org/10.1007/s11145-011-9338-3

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://doi.org/10.54300/247.242

Tan, T., Arellano, I., & Patrick, S. K. (2024). *State teacher shortages 2024 update*. Learning Policy Institute.

Tim Walke. (2025). *The State of Teacher Pay*. National Education Association (NEA). Retrieved from https://www.nea.org/nea-today/all-news-articles/state-teacher-pay

Van den Borre, L., Spruyt, B., & Van Droogenbroeck, F. (2021). Early career teacher retention intention: Individual, school, and country characteristics. *Teaching and Teacher Education, 105*, 103427. https://doi.org/10.1016/j.tate.2021.103427

Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C. (2014). Burnout among senior teachers: Investigating the role of workload and interpersonal relationships at work. *Teaching and Teacher Education, 43*, 99-109. https://doi.org/10.1016/j.tate.2014.07.005

Youngs, P., Jones, N., & Low, M. (2011). How beginning special and general education elementary teachers negotiate role expectations and access professional resources. *Teachers College Record, 113*(7), 1506-1540. https://doi.org/10.1177/016146811111300704

Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed Consent

Obtained.

Ethics Approval

The Publication Ethics Committee of the Macrothink Institute.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and Peer Review

Not commissioned; externally double-blind peer reviewed.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data Sharing Statement

No additional data are available.

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