Investing in Educators:

The Imperative of Differentiated Pay for Teaching in Hard-to-Staff Assignments and Specializations

By Charles Barone, Ph.D. and Andrew Epifanio, Ed.M.

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Executive Summary

School districts across the country face difficult and urgent choices regarding how to recruit and retain an effective educator workforce—simultaneously navigating chronic domain-specific teacher shortages, declining student enrollment, budget-induced layoffs, and lagging student outcomes. As education leaders grapple with such pressures, strategic approaches to staffing and compensation—such as those seen in a parallel field, that of nursing—offer hope and point to a path forward.

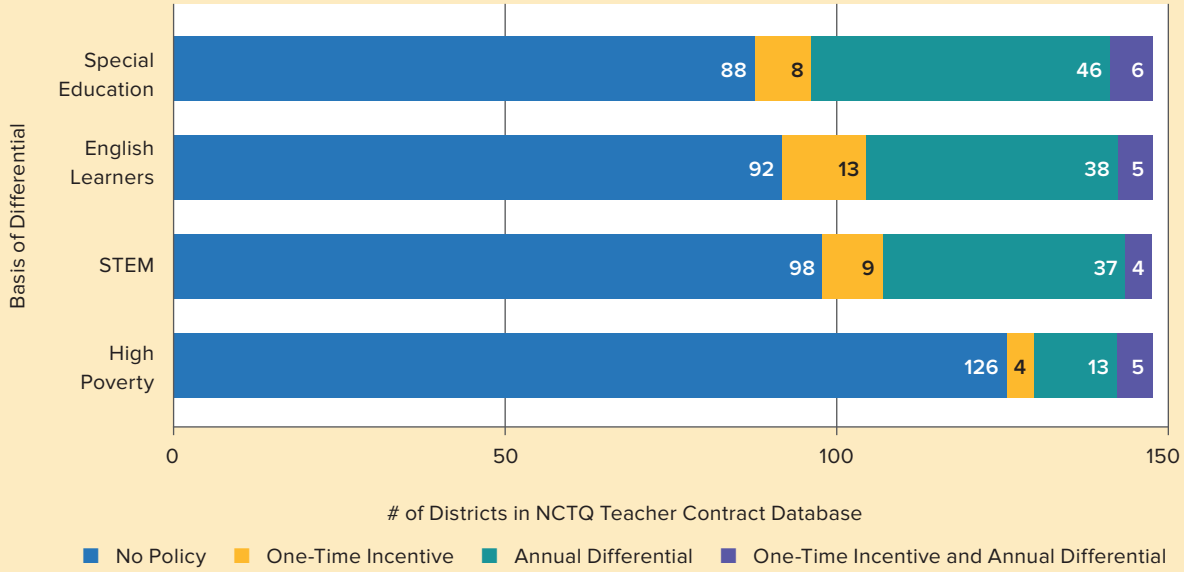
> *"Despite the rationale and evidence for differentiated pay, however, the strategy is quite uncommon in teaching."*

Differentiated pay for teachers in hard-to-staff assignments and specializations —**i.e., extra compensation for teachers in schools with high concentrations of low-income students and domains like special education, English Learner and bilingual education, and STEM**—holds great promise as a strategy to address some of the most persistent teacher workforce challenges that affect student outcomes:

- **Access to High-Quality Teachers:** Teacher quality is inequitably distributed. Schools with higher proportions of low-income students and students of color tend to be staffed by less experienced and underqualified teachers.
- **Fiscal Equity:** Because of seniority-driven pay and placement policies, schools with high proportions of low-income students receive less funding per-pupil than do their more advantaged counterparts.
- **Domain-Specific Teacher Shortages:** There are well-documented and pervasive teacher shortages in high-poverty schools and special education, English Learner and bilingual education, and STEM roles.
- **Churn and Instability:** Teacher turnover directly impacts student achievement and disproportionately affects already disadvantaged students, with higher turnover rates in Title I schools and those serving more students of color.

Research indicates that differentiated pay for teachers in hard-to-staff assignments and specializations can help both to ameliorate these problems and boost student achievement. *Despite the rationale and evidence for differentiated pay, however, the strategy is quite uncommon in teaching.* In a review of 148 teacher collective bargaining agreements (CBAs) from large school districts, less than half (41%) of contracts included language about differentiated pay for special education teachers and less than 1 in 6 (15%) had language about it for teachers in high-poverty schools. Even where language was present in the teacher CBAs, the differentials offered were usually nominal and often restricted behind opaque bureaucratic approval processes.

Most large school districts offer no pay differentials for hard-to-staff assignments or specializations



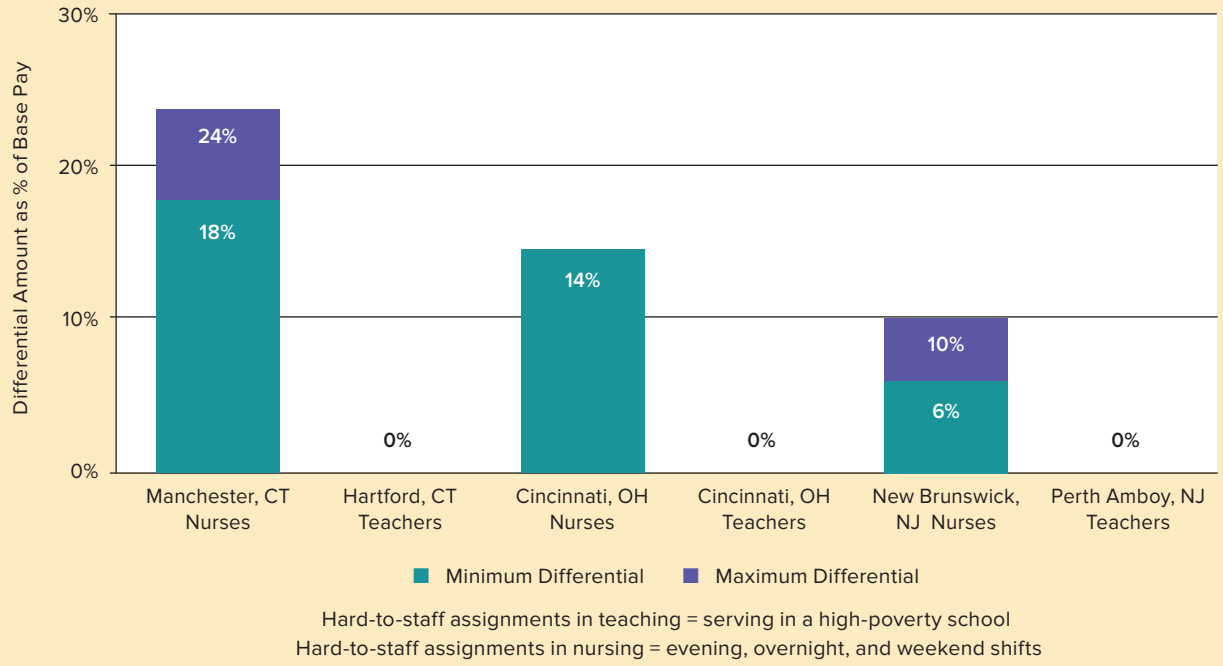
Data source: NCTQ Teacher Contract Database

When it comes to differentiated pay for hard-to-staff assignments and specializations, the field of teaching is somewhat unique. These types of targeted compensation are much less typical in teaching than in other professions, including those represented by unions. ***Differentiated pay for hard-to-staff assignments and specializations is much more common in one parallel profession with union representation, that of nursing.***

This paper provides a comparative analysis of CBAs between teaching and nursing, which share analogous demographics and education requirements. All of the examined contracts are under the American Federation of Teachers, which is the second-largest collective bargaining unit in the U.S. for *both* teachers and nurses. Our analysis suggests that differentiated pay, beyond mere seniority or years of service, appears much more common in the latter field. Moreover, differentiated pay in the nursing contracts tended to be widely accessible and far more generous than similar differentials for teachers.

"Differentiated pay for hard-to-staff assignments and specializations is much more common in one parallel profession with union representation, that of nursing."

Unlike teachers, nurses tend to have access to differentials for hard-to-staff assignments



Hard-to-staff assignments in teaching = serving in a high-poverty school
Hard-to-staff assignments in nursing = evening, overnight, and weekend shifts

Source: Examined nurse and teacher collective bargaining agreements (see Appendix B) as well as follow-up communications with school districts about policy usage (given administrative restrictions in the contracts).

> *"This opposition to differentiated pay by CTA and other teachers' unions belies its ubiquity in other union-represented professions."*

The lack of additional pay for hard-to-staff assignments and specializations in teaching may be due in part to strong opposition from teachers' unions. Union leaders often claim that deviation from the traditional step-and-lane pay system could create pay inequities or be divisive. For example, in 2023, Claudia Briggs—a spokesperson for California Teachers Association—stated that "[Differentiated pay] can be very divisive and hard to implement fairly and consistently. And it doesn't get to the root of the problem." Briggs isn't quoted on what she considers to be the "problem" or what would get to root of it.[1]

This opposition to differentiated pay by CTA and other teachers' unions belies its ubiquity in other union-represented professions. Absent an alternative strategy, this opposition perpetuates current inequities and inefficiencies in student opportunities and outcomes. Together, the challenging circumstances faced by our public schools, the available evidence on differentiated pay for teachers, and the prevalent use of such an approach in a parallel field make a strong case for districts and states to leverage differentiated pay as an immediate strategy to help revitalize the educator workforce, reverse declining student outcomes, and equalize educational opportunity.

> *“The field of nursing, with its similarities to teaching, offers a lesson on how to move forward: Provide differentiated pay for hard-to-staff assignments and specializations to get the best teachers we have to where we need them most.”*

Differentiated pay could be implemented in a number of ways. In this paper, we focus on the role of collective bargaining agreements because that is the most common approach in both education and nursing. At the district level, it could also be: offered as annual bonuses outside of contracts (though negotiation through an MOU or the like may still be required); through increasing school leader autonomy over hiring, staffing, and school budgeting; or, through strategic staffing with diverse educator roles. At the state level, initiatives could include grant programs tailored to address chronic shortages, pay scheme flexibilities for qualifying districts, scholarship programs that cover full tuition costs for teacher preparation programs in exchange for a multi-year commitment to a hard-to-staff assignment or specialization, or even a sliding scale tax credit for teachers based on the poverty level of the school in which they teach.[2,3,4,5]

The urgency to recruit and retain effective teachers in the most chronically understaffed schools and classrooms is clear. Schools with high concentrations of low-income students and students of color as well as special education, English Learner and bilingual education, and STEM classrooms continue to experience dire staffing shortages. *The field of nursing, with its similarities to teaching, offers a lesson on how to move forward: Provide differentiated pay for hard-to-staff assignments and specializations to get the best teachers we have to where we need them most.*

Introduction

Teachers are the backbone of our society, shaping the minds of future generations, nurturing students' love for learning, and preparing the future workforce. They are also arguably the most important investment a school can make: According to RAND, teachers have two to three times the effect on student achievement of any other in-school factor.[6] Other studies have produced similar findings.[7]

However, the teaching profession has long been undervalued,[8] resulting in a myriad of challenges like domain-specific shortages, under-qualification, high burnout, and decreased student achievement.[9,10,11,12] Teacher pay is not the only issue of concern when addressing these staffing challenges; school leadership and culture, for instance, also matter.[13] But compensation is a top impediment to attracting teachers to the profession and retaining them in it.[14,15]

Increasing base teacher pay is a vital step forward.[16] While there is complexity in comparing teaching to other fields, there is ample evidence that teachers are underpaid relative to their peers in other professions.[17,18,19,20,21,22,23,24] Moreover, 4 in 5 teachers think they are paid unfairly, with 2 in 3 U.S. adults agreeing with them.[25,26]

While necessary, however, increasing base pay alone is insufficient. Experts have pointed out that teacher shortages are not universal, but in fact tend to be concentrated in high-poverty schools, rural communities, schools predominantly serving students of color, and in certain specializations.[27,28] By providing differentiated pay for those teaching in hard-to-staff schools and those with expertise in areas that are chronically challenging to staff—such as special education, STEM, and English Learner (EL) and bilingual education—we can attract and retain the best educators and ensure equitable access to high-quality education for all students. As districts continue to grapple with a "fiscal cliff" following the discontinuation of federal COVID relief funds[29] and declining public school enrollment (and the associated funding drop-off) nationwide,[30] strategic approaches to staffing—including differentiated pay for hard-to-staff assignments and specializations—will become a policy imperative.

Reasons to Provide Differentiated Pay for Hard-to-Staff Assignments and Specializations

There are four main reasons for providing differential pay to educators:

- *Equalizing Access to High-Quality Teachers*
- *Promoting Fiscal Equity*
- *Alleviating Domain-Specific Teacher Shortages*
- *Reducing Churn and Instability*

We will examine each of these in turn.

"While necessary, however, increasing base pay alone is insufficient. By providing differentiated pay… we can attract and retain the best educators and ensure equitable access to high-quality education for all students."

> *"…every measure of teacher quality we examine—experience, licensure exam score, and value-added estimates of effectiveness—is inequitably distributed across every indicator of student disadvantage."*
>
> DAN GOLDHABER

Equalizing Access to High-Quality Teachers

There is extensive evidence showing an inequitable distribution of experienced, effective, and highly qualified teachers across schools. In a 2015 study of teacher maldistribution in the state of Washington, Goldhaber concluded that:

> *"In elementary school, middle school, and high school classrooms (both math and reading), **every measure of teacher quality we examine—experience, licensure exam score, and value-added estimates of effectiveness—is inequitably distributed across every indicator of student disadvantage**—free/reduced lunch status, underrepresented minority, and low prior academic performance."* [31]

Overall, other studies have reached conclusions similar to those of Goldhaber.[32,33,34]

A review and discussion of the best definition of teacher quality is a subject that requires much more space than is available here. There are multiple predictors of teacher effectiveness and many differences of opinion.[35] Suffice it to say that the factors Goldhaber cites—experience, licensure test scores, and value-added measures—all have some validity, as do those tied to advanced degrees in some specific subjects, like math and science, and some aspects of pre-service preparation.[36,37,38,39,40]

Experience doesn't perfectly correlate with effectiveness, but research indicates that it does matter at least up to about five years and perhaps, to a lesser degree, beyond that.[41] One key problem with experience is that most collective bargaining agreements (CBAs) give more senior teachers "bumping rights," i.e., teachers with more years of service can self-select where they prefer to serve within a particular school district. These "bumping rights" tend to produce an excess supply of experienced teachers at more desirable schools—i.e., those with more advantaged students—and, in turn, a concentration of less experienced teachers in schools with more disadvantaged students.[42]

> *"Without pay incentives to retain them in more challenging schools, teachers tend to move to high-performing schools as soon as they gain the leverage."*

Marguerite Roza, Director of the Edunomics Lab, explains the significance of this in a 2004 statement that still rings true: *"For schools serving the poorest children, this means that they have little choice of whom they employ, and their teachers are disproportionately inexperienced."*[43] ***Without pay incentives to retain them in more challenging schools, teachers tend to move to high-performing schools as soon as they gain the leverage.*** This often translates into a constant revolving door of more experienced teachers leaving their jobs in the lowest-performing and highest-poverty schools for the better working conditions that higher-performing and more affluent schools can typically provide them.

Worsening the issue, recent research suggests that at least 288,000 positions nationwide (9%) are held by underqualified teachers,[44] who are more likely to be hired when candidate options are limited and who leave the classroom at faster rates than their peers.[45,46] While federal law requires states to submit plans ensuring that low-income students and students of color are not disproportionately served by inexperienced or ineffective teachers, lack of clarity and enforcement by the federal government have created a scenario in which "only about a third of states have made a comprehensive effort to comply with all components of the law." [47] The lack of pay strategies to address the inequitable distribution of teacher quality is a glaring oversight and one that needs serious and urgent remediation.

Providing differentiated pay for teachers to work in hard-to-staff schools and subjects could help increase the equitable distribution of high-quality teachers. By incentivizing teachers to remain in hard-to-staff schools, teachers would be more likely to stay as they gain experience and students would benefit both from more experienced teachers and more teachers that know them and their school context. Paying teachers more to work in hard-to-staff subjects would compound these benefits: Committed teachers in high-need schools could earn two or more incentives (such as for teaching in a high-poverty school and also being qualified to teach English learners), and the most extreme areas of shortage could be ameliorated.

Promoting Fiscal Equity

School funding is a critical contributor to students' academic and long-term outcomes, with the greatest benefits of increased spending seen for low-income students.[48] Despite this fact, school districts with more low-income students and students of color tend to receive substantially less local and state funding than their more advantaged counterparts.[49]

Funding inequities play out not only between districts, but also within them. The Center for American Progress (CAP) reported that about 40% of per-pupil spending inequities can be attributed to within-district differences,

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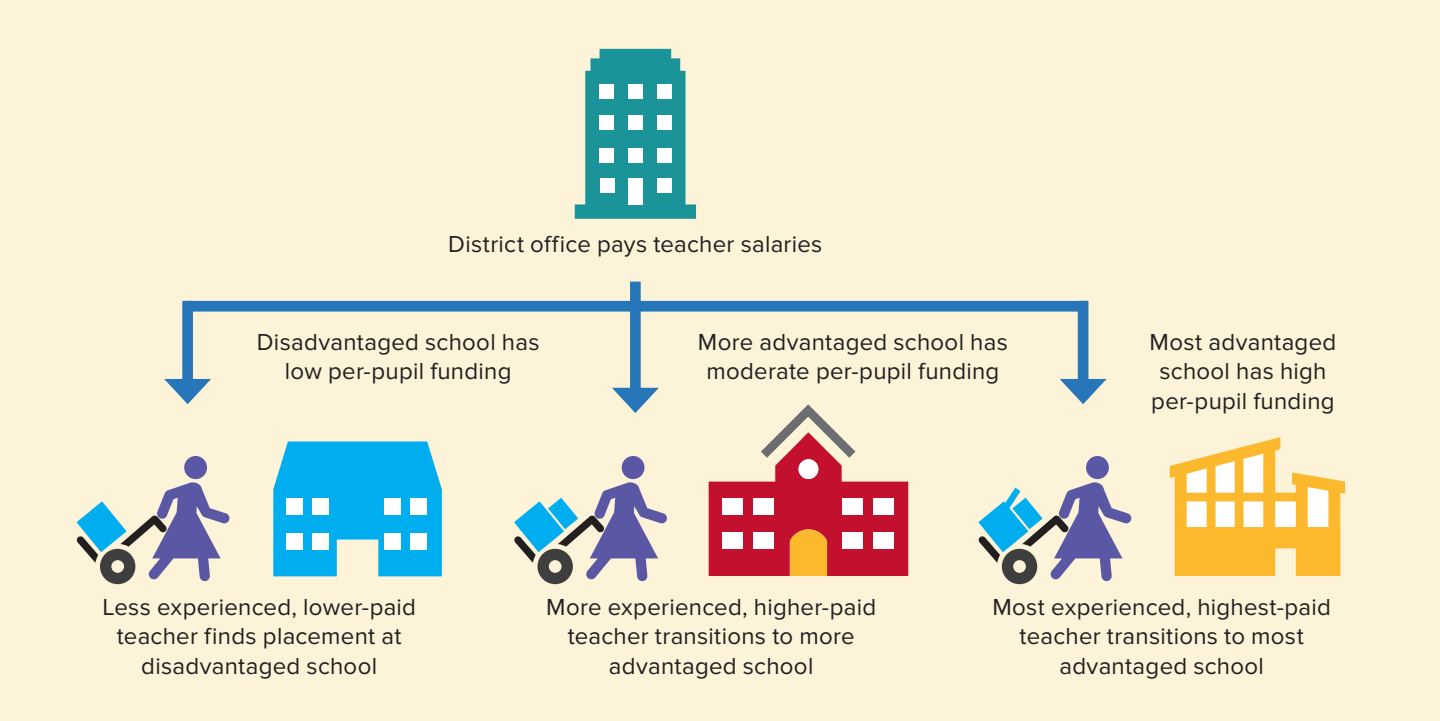
rather than between-district variation.[50] According to a recent analysis, schools in the same district can have multimillion dollar funding differences[51]—and such disparities disproportionately affect students of color.[52] Unlike between-district disparities, within-district disparities cannot be explained by differences in local property taxes or budgets.

A significant source of these funding inequities seems to be the relationship between teacher distribution and pay. Schools serving predominantly affluent students tend to have teachers with greater experience and higher educational qualifications compared to those in high-poverty schools.[53] This is because seniority is tied to both teacher pay scales and "bumping rights." In most districts, teachers' salaries are largely determined by years of experience and, to a lesser extent, attainment of advanced degrees.[54]

Therefore, schools serving low-income students, in effect, often have lower per-pupil funding. As CAP explains:

> *"When veteran teachers elect to move to low-need schools in richer, whiter neighborhoods, they bring higher salaries to those schools. New teachers*



Infographic: How district funding tends to follow more experienced teachers into advantaged schools.

> *who tend to start out in high-need schools, serving many students of color and poor students, earn comparatively low salaries. This leads to significantly lower per-pupil spending in the schools with the highest concentrations of nonwhite students."* [55]

Higher concentrations of inexperienced teachers being paid less in high-poverty schools means that when you divide the amount of dollars spent at each school by the number of students, local per-pupil spending tends to be, in effect, lower at these schools. Roza and Hill state:

> *"[N]ot all schools have the same staffing patterns. Some have disproportionately higher paid staff and others the opposite. But school districts go with the averages. They do not charge the extra costs of all-senior staffs to the schools that employ them, and they do not reimburse schools with low-paid staffs for the difference between districtwide average teacher salaries and the actual salaries paid. This practice creates a transfer of funds from the less to the more advantaged schools. **The only way districts can afford to pay more expensive teachers who congregate in certain schools is by drawing on the dollars saved on the low-cost teachers in the schools with the most junior staffs."*** [56]

These variations can be substantial. Roza and Hill found that below-average teacher pay in schools serving high proportions of low-income students resulted in those schools having a deficit of between $400,000 and $1 million relative to their more advantaged counterparts.[57] And a recent analysis showed inequities in the distribution of ESSER funds due to the relative ease that wealthier schools had hiring teachers subsidized with these new monies.[58]

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MARGUERITE ROZA

It should be noted that not all researchers agree with Roza and Hill that staffing patterns result in net per-pupil funding inequities. Researchers at Brookings concluded in 2022 that within-district inequities in the distribution of experienced teachers are moderated by additional staffing (i.e., more teachers and additional support staff such as paraprofessionals) at high-poverty schools, which makes net per-pupil spending slightly progressive.[59] Brookings did not explore what this meant in terms of overall educator effectiveness.

Nonetheless, ***paying teachers more to work in high-poverty schools would help remedy both the fiscal and qualification inequities that are due to regressive variations in teacher experience.*** On paper, it would increase the per-pupil funding at those schools and remedy fiscal inequities between schools in the same district. In practice (as noted earlier), it would incentivize teachers to lengthen their tenures in high-poverty schools. This would act as a counterforce to both exits to more advantaged schools and exits from the field altogether, thereby increasing the number of more experienced teachers in high-poverty schools.

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Alleviating Domain-Specific Teacher Shortages

In news reports about the educator workforce, claims of widespread teacher shortages often dominate the headlines. However, experts have pointed out that the total number of teachers has actually increased over time, while student enrollment has declined.[60] These staffing increases are due in part to the influx of ESSER funding, which was used to create new teaching positions that schools then struggled to fill. Those vacancies have created the appearance of a national teacher shortage that in fact may be due to the artificial inflation of open staffing positions, based on the availability of temporary and now-expired federal funds.

A lack of robust and comprehensive data makes it difficult to unequivocally tease out the complexities of this issue[61]—namely, to what degree these shortages are widespread across the K-12 education sector or concentrated in specific geographic areas, school types, and subjects. For example, NCTQ reports that half of surveyed states lack data systems that disaggregate by subject, and consequently, states are unable to share information about specific subject shortages. District and state policymakers, in turn, are left unaware of whether their schools are experiencing overall shortages or just shortages in specific subject areas.[62] Also, as explained below, NCES only reports data only in a binary way—i.e., whether or not a school has one or more vacant positions, rather than measure how many vacancies there are in each school.

What has historically been true and remains true, however, is that shortages are particularly acute in high-poverty schools, schools primarily serving students of color, and in specialty areas, particularly special education,

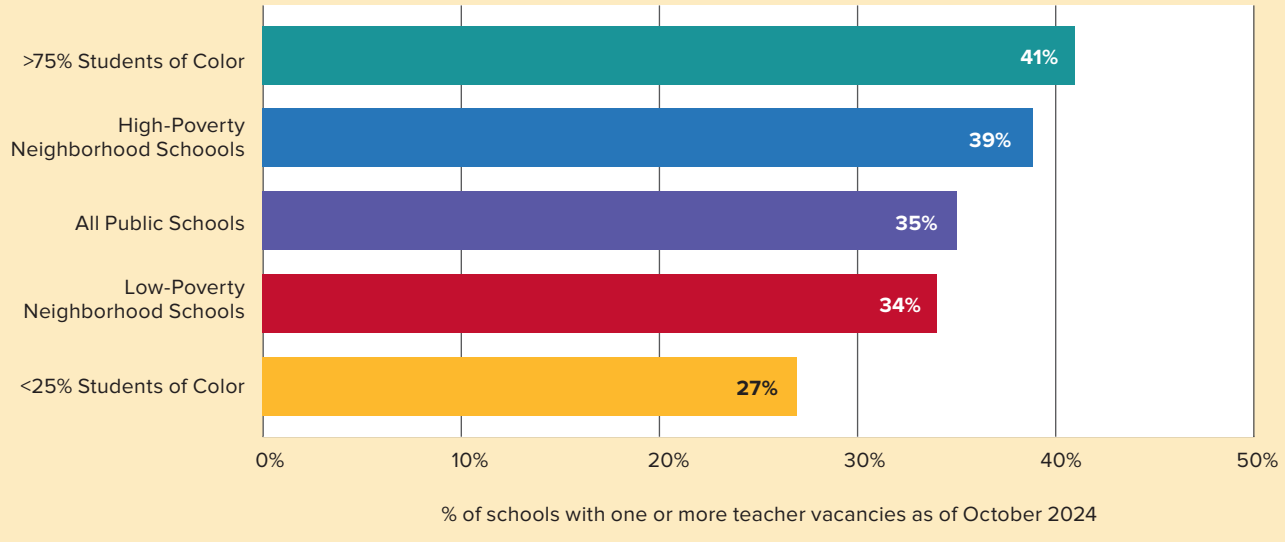
English Learner and bilingual education, and STEM subjects.[63,64] As Dee and Goldhaber (2017) concluded: "While anecdotal accounts of substantial teacher shortages are increasingly common, we present evidence that such shortages are not a general phenomenon but rather are highly concentrated by subject (e.g., mathematics, science, and special education) and in schools (e.g., those serving disadvantaged students) where hiring and retaining teachers are chronic problems." [65]

The Big Picture on Concentrated Shortages. A 2023 survey of school leaders by ABC News found that "Two parts of the subject matter pool are particularly strained, according to local education officials: special education and science, technology, engineering and mathematics, or STEM."[66] Similarly, a recent Gallup poll showed that nearly half of school leaders find it "very challenging" to hire well-qualified math teachers and over 4 in 10 saying the same for science teachers.[67] The survey results also showed significantly higher difficulty in rural and lower-income areas (both 55%). NCES data also show significant shortages in special education, math, and English Learner and bilingual education, with over half of surveyed school leaders reporting one or more special education teacher vacancies in March 2024, the last time a full set of vacancy data was collected.[68]

> *"What has historically been true and remains true, however, is that shortages are particularly acute in high-poverty schools, schools primarily serving students of color, and in specialty areas, particularly special education, English Learner and bilingual education, and STEM subjects."*

Schools with High Student Poverty Rates and More Students of Color. Recent data from NCES shows that high-poverty schools and schools primarily serving students of color have greater staffing challenges than their counterparts. In the 2024-2025 school year, they were more likely to have at least one vacancy.[69] Notably, however, the NCES data does not capture the magnitude of the problem—that is, how many teacher vacancies there were in each of those schools with higher vulnerable populations relative to those with lower vulnerable populations. **The puzzling decision by NCES to limit**

Schools with the most marginalized students have the highest vacancies



Data source: NCES School Pulse Panel - Staff Vacancies

reporting for schools with "one or more" vacancies unfortunately obscures understanding of just how severely understaffed high-poverty schools and schools with more students of color are compared to their counterpart schools.

Special Education. Special education teachers play an indispensable role in supporting students with diverse learning needs. However, the requirements and challenges of the role are unique, leading to higher burnout and turnover rates.[70] Distinct from other teaching roles, there are strict provisions in federal law—for good reason—that prohibit waiving of certification requirements for special education teachers.[71] According to the Council for Exceptional Children and the Council of Administrators of Special Education, about 50% of special education teachers leave within their first five years.[72]

As a result, the vast majority of states report shortages of special education teachers. According to U.S. Department of Education data, 37 states and Washington, D.C. identify special education as a persistent high-need area. In many districts, special education has the highest vacancy rate among all teaching subjects and specializations.[73]

English Learners and Bilingual Education. A 2021 study by the Comprehensive Center Network concluded that "More than half of states nationwide are experiencing bilingual teacher shortages, and the states with the most acute shortages are those that provide bilingual education to the greatest numbers of English learners."[74] The authors concluded that inadequate compensation and a dearth of pay incentives are two of the top three causes of the shortage and that providing financial incentives to teachers of English Learners should be a key strategy in attracting and retaining these essential educators.

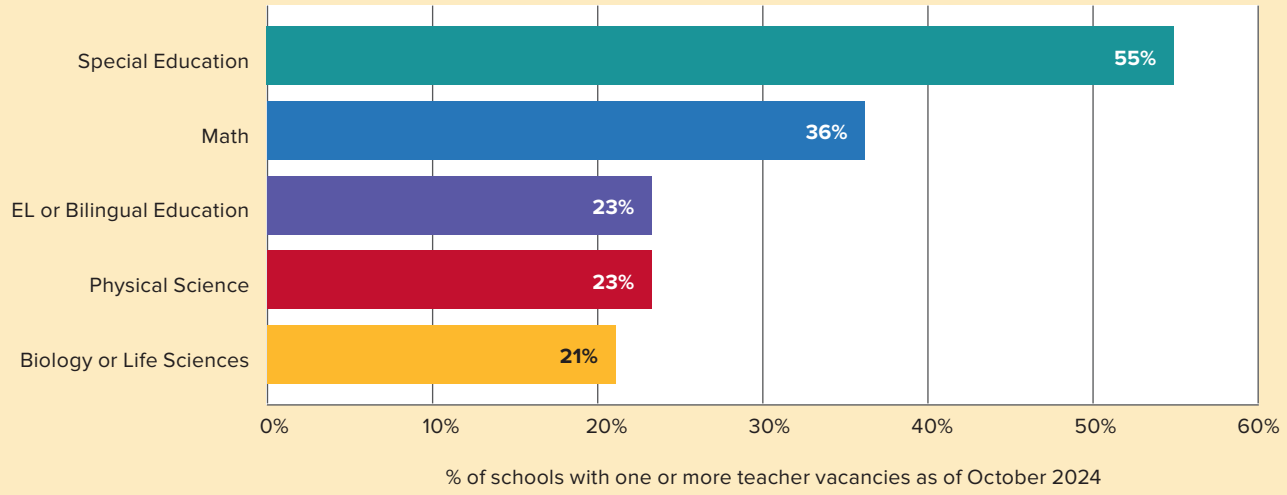
STEM. Because of higher-paying career opportunities elsewhere, those with STEM expertise appear less likely to enter the profession and, once in, more likely to leave it early on in their teaching careers. Research suggests that math teachers are actually paid about 4.5 percent less than other teachers, and science teachers earn 2.9 percent less.[75] This is likely because math and science teachers are more likely to leave the profession early, and therefore have fewer years of experience and, in turn,

lower seniority-driven pay. One study found that while starting salaries for biologists are similar for teachers and positions in biology outside education, salaries for the latter grow much more quickly and reach a nearly $40,000 pay gap within 16 years.[76]

As a result, nearly every state continues to report significant shortages in STEM fields in both middle and high schools.[77] These shortages are especially acute in high-poverty and rural districts. In the aforementioned ABC poll, about three-fourths of public schools reported it was somewhat or very difficult to recruit and retain physical science (78%) and mathematics (75%) teachers.[78] Recent estimates indicate the number of new certified STEM teachers produced annually dropped from nearly 32,000 in 2011 to under 20,000 in 2022 (a 37% decline).[79]

While more data is needed to more precisely diagnose teacher shortages across the country, improving such data infrastructure will take time. In the meantime, ***leveraging differentiated pay to address shortages based on the information available would have an immediate effect on alleviating the areas where shortages are indisputably dire: schools with high concentrations of low-income students and students of color as well as special education, English Learner and bilingual education, and STEM classrooms.*** Providing differentiated pay for special education, English Learner and bilingual education, and STEM teachers would acknowledge the high level of expertise they bring to the classroom and the level of need for such skills in schools.

Specialty-specific vacancies are pervasive across all schools



Data source: NCES School Pulse Panel — Staff Vacancies

Reducing Churn and Instability

While previous research has suggested that overall turnover in the teaching profession is not substantially different from other comparable professions,[80] newer research suggests that teachers are now leaving at faster rates than their peers in comparable professions and at higher rates than teachers in high-achieving countries.[81,82] Regardless of relative rate, the effects of teacher attrition negatively impact students' long-term education outcomes and fall disproportionately on marginalized student groups.[83]

Like teacher quality maldistribution and domain-specific shortages, teacher turnover tends to disproportionately impact already disadvantaged students. According to a 2017 study by the Learning Policy Institute, teacher turnover rates are approximately 50% higher for Title I schools and 70% higher for schools that primarily serve students of color.[84]

Education Resource Strategies came to a similar conclusion in a 2025 report, noting that the highest-poverty schools disproportionately experience the most departures by teachers who transition to lower-poverty schools within the district.[85]

> *"… leveraging differentiated pay to address shortages based on the information available would have an immediate effect on alleviating the areas where shortages are indisputably dire: schools with high concentrations of low-income students and students of color as well as special education, English Learner and bilingual education, and STEM classrooms."*

Evidence for Differentiated Pay for Hard-to-Staff Assignments and Specializations

The predominant differentials in teacher pay—for seniority and advanced degrees—aren't aimed at recruiting and retaining teachers where they are most needed nor are they highly correlated with teacher effectiveness or performance.[88,89,90,91] While examining the effects of various differentiated pay strategies on teacher effectiveness falls outside the scope of this paper, it is worth noting that the limited relationship between the prevalent pay differentials in the field and teacher effectiveness creates an opportunity to explore and adopt pay strategies that have more pronounced effects on both teacher retention and recruitment and on student outcomes.

In the states and districts where substantial amounts of differentiated pay for high-need schools and specializations are offered, the positive impacts on recruitment and retention are encouraging.[92] In 2022, NCTQ concluded that "Research has shown repeatedly that, although not a panacea, strategic pay is an effective tool to attract and retain teacher talent to hard-to-staff schools and subjects, with some forms of strategic pay appearing to be related to higher teacher diversity." [93] Here are some examples:

"

"In the states and districts where substantial amounts of differentiated pay for high-need schools and specializations are offered, the positive impacts on recruitment and retention are encouraging."

"

… research indicates that turnover negatively affects student achievement and school culture, with the impacts being worse for low-performing students and students of color."

- **The Teacher Talent Transfer Initiative** (TTI), launched and evaluated by Mathematica for the U.S. Department of Education, tested whether large financial incentives could encourage high-performing teachers to transfer to struggling schools in **10 large and economically diverse school districts in seven states.** Teachers receiving the incentive were more likely to stay in their new schools during the two-year payout: 93% retention after year one, compared to 71% in the control group. After the incentives ended, most TTI teachers remained, but the difference in retention rates between TTI and control groups decreased substantially. Moreover, elementary school students taught by TTI transfer teachers moved up 4 to 10 percentile points in math and reading over two years relative to all students in the state. The researchers estimated that this transfer incentive could provide the same impact on student achievement as class size reduction for $13,000 less per grade per school.[94]
- In 2020, **Hawai'i**—in which the entire state K-12 education system is encompassed within a single school district—implemented a $10,000 pay differential for special education teachers and an additional $8,000 for working in a historically hard-to-staff school. A 2023 study of this incentive found that differentiated pay for special education teachers reduced the proportion of special education positions that were vacant or filled by an unlicensed teacher by 35%. The effects were most pronounced in the hardest-to-staff schools—i.e., the two incentives worked in tandem and in an additive fashion to reduce inequities.[95]

> *"… in Dallas, teachers who were selected to teach in underperforming schools received a $2,000 annual signing bonus and highly effective teachers could receive an additional $10,000. This led to a significant increase in both math and reading scores for students, bringing average achievement in the previously lowest-performing schools close to the district average."*

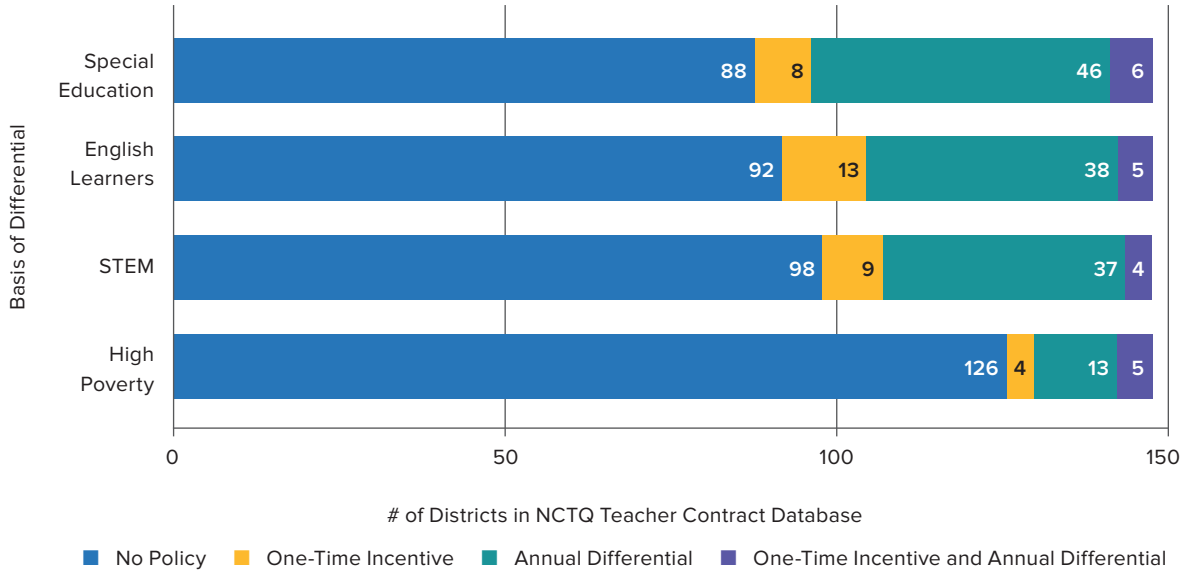
- Between 2010 and 2015, **Georgia** provided up to $21,000 over six years to teachers certified in math and science, which reduced attrition rates of teachers receiving differentials by 18-28%.[96]
- From 2001-2004, **North Carolina** provided a (meager) $1,800 retention bonus each year to certified math, science and special education teachers who taught in high poverty or academically failing schools, resulting in a 12% average reduction in staff attrition among targeted teachers, with up to 18% lower likelihood of departure among math teachers who received the bonus.[97]
- Though yet to be formally studied, a similar strategy seems to have worked effectively in **Detroit**, where a $15,000 recurring annual bonus for special education teachers led to the elimination of almost all of their 300 vacancies, even through the middle of the pandemic.[98]

The evidence for differentiated pay to work in hard-to-staff schools or subjects, *when tied to educator effectiveness,* is even more compelling:

- Under the Accelerating Campus Excellence (ACE) initiative ***in Dallas, teachers who were selected to teach in underperforming schools received a $2,000 annual signing bonus and highly effective teachers could receive an additional $10,000. This led to a significant increase in both math and reading scores for students, bringing average achievement in the previously lowest-performing schools close to the district average.*** Highlighting the importance of sustained pay differentials, when the stipends for highly effective teachers were removed, turnover increased and test scores fell substantially.[99]
- In **Washington D.C.,** researchers found that differentiated pay improved teacher effectiveness. Under the IMPACT program, teachers were strongly incentivized to achieve "Highly Effective" ratings, with teachers in high-poverty schools and a high-needs subject who received a Highly Effective rating for 2 years in a row being eligible for up to a $27,000 increase in base pay or a maximum $25,000 one-time bonus for one highly effective rating. The performance-based incentives significantly improved the effectiveness of the DCPS teacher workforce.[100]

These standalone studies align with a recent meta-analysis of the available literature on teacher retention and attrition, which indicated that salary increases are associated with teachers' decisions to switch schools and that targeted financial incentives such as merit pay and retention bonuses decrease attrition rates.[101] While the nascent nature of differentiated pay for hard-to-staff assignments and specializations in teaching has limited its study, the available research on the topic is quite encouraging.

Most large school districts offer no pay differentials for hard-to-staff assignments or specializations



Data source: NCTQ Teacher Contract Database

Infrequency and Inadequacy of Differentiated Pay for Hard-to-Staff Assignments and Specializations

As noted, districts are much more likely to give—and unions are much more likely to support—across-the-board pay raises and seniority-driven compensation systems rather than differentiated pay for teachers in high-need schools and subjects,[102] even though a number of studies support the latter's effectiveness, especially when the dollar amounts are substantial.[103]

Across several of the high-need categories highlighted earlier—high-poverty schools, special education, English Learner and bilingual education, and STEM—*an analysis of data from the **Teacher Contract Database** published by the National Council on Teacher Quality (NCTQ) indicates that the vast majority of large school districts in their sample fail to provide any differentiated pay whatsoever for hard-to-staff assignments and specializations.*[104]

As the above chart shows, most of the 148 school districts in the database do not offer any kind of financial incentive for teachers in high-poverty schools or special education, English Learner, or STEM roles. Only 41% of the districts had contract language about differentiated pay for special education teachers, with even less incentivizing English Learner teachers (32%), STEM teachers (18%), or teachers in high-poverty schools (15%).

"… an analysis of data from the Teacher Contract Database published by the National Council on Teacher Quality (NCTQ) indicates that the vast majority of large school districts in their sample fail to provide any differentiated pay whatsoever for hard-to-staff assignments and specializations."

Further investigation into the available contracts reveals that, when they do exist, many of the differentials which are offered are nominal—both in terms of dollar amounts and continuity—and unlikely to influence the recruitment and retention of teachers in these areas. A 2022 analysis

by NCTQ found that while many districts have language in their contracts about differentiated pay for teachers in hard-to-staff schools and subjects, the average incentive amounts are often not enough to be a meaningful differentiator for educators, which NCTQ estimates—based on the available evidence—to be at least 7.5% of a teacher's salary.[105,106] Moreover, the language varies widely, with few districts integrating the incentives into their salary structures or having a similarly predictable and clear pathway to earning differentials. Instead, gatekeeping decisions about differentials are left to school boards or other bodies where there is little public transparency or accountability.

The types of pay differentials that are most frequent within teaching tend to be for seniority and advanced degrees (via "step-and-lane" salary schedules). There are a number of practical and political reasons for the prevalence of seniority- and education-based differentials and the limited use of others, such as the historical development of the step-and-lane compensation system as a method of fair pay through standardization,[107] budgetary constraints limiting innovative approaches to maximizing human capital, and spillover effects of political opposition to performance-based differentials.[108]

The most significant barrier to differentiated pay for hard-to-staff assignments and specializations in teacher contracts, however, may be opposition from union leaders. Union leadership has sometimes expressed support for such differentials but, more often than not, opposed them. [109,110]

In 2000, the National Education Association passed an official resolution that included opposition to differential pay for shortage areas such as math and science.[111] In North Carolina, the state NEA affiliate publicly criticized a state proposal to pay bonuses for STEM teachers, arguing that such differential pay would harm cohesion and fairness among educators.[112]

More recently, Cal Matters reported in 2023, in an article entitled "Extra Pay Could Lure Experienced Teachers To Poorer Schools. Why California Won't Do It":

> "The California Teachers Association codified its opposition to differentiated pay in its policy handbook, which explains that school districts use what is known as a "single salary schedule" to pay all teachers at all schools the same wages based on their experience and education levels. 'The model is widely accepted because it is seen as less arbitrary, clearer and more predictable,' the handbook states. 'Because of these factors, the single salary schedule will continue to be the foundation of educators' pay.'
>
> "Claudia Briggs, a spokesperson for the association, said public school districts should not be using their limited pool of funds to pay certain teachers more than others. '(Differentiated pay) can be very divisive and hard to implement fairly and consistently," Briggs said. "And it doesn't get to the root of the problem.'" [113]

"*The most significant barrier to differentiated pay for hard-to-staff assignments and specializations in teacher contracts, however, may be opposition from union leaders. Union leadership has sometimes expressed support for such differentials but, more often than not, opposed them.*"

Briggs did not elaborate on what she saw the "root of the problem" to be.

In 2009, in testimony before the U.S. House Education and Labor Committee, then-NEA President Dennis Van Roekel pledged that "the union would encourage its local affiliates to 'address barriers' to teacher distribution in contracts by writing a 'memorandum of understanding' allowing officials to waive contract provisions that prohibit staffing high-needs schools with 'great teachers.'" Education Week noted that "The testimony did not specify seniority provisions, which many administrators say allow more-experienced—and often more-effective—teachers to move to schools with fewer challenges." **Nothing more was ever heard from Van Roekel or the NEA on this issue.**

Consistent with these stances, in a 2022 "lay of the land" analysis, Thomas Toch concluded:

> "For their part, teachers' unions, influential voices on state and local staffing policy, tend to back expensive strategies that benefit every teacher rather than concentrate resources where there's clear need. An American Federation of Teachers shortage task force in July recommended higher across-the-board pay, smaller classes, and a reduction in the use of student achievement to measure school and teacher performance." [114]

As a result, differentiated pay for hard-to-staff assignments and specializations seems to be uniquely uncommon in teaching as compared to many other professions that provide an essential public service, including those represented by unions.[115] As researchers at the Brookings Institution concluded: "Both state policies and teachers unions have blocked differentiating teacher compensation for things like teaching in high-demand subjects or in high-need school settings, but this type of price discrimination would be an expedient way to address many of the persistent teacher vacancies districts increasingly face." [116]

It should be noted, however, that rank-and-file teachers overwhelmingly support differentiated pay for hard-to-staff assignments and specializations. In E4E's 2023 Voices from the Classroom teacher survey, educators overwhelmingly favored financial incentives for teachers who work in hard-to-staff schools (93%) and subject areas (87%).[117] Both types of incentives were strongly supported by union members and teachers of color at similar rates as the overall survey population. **The popularity of this idea was sustained in the 2024 survey, when teachers selected "Opportunities for higher pay for working in a hard-to-staff school or subject area" as one of the strategies most likely to attract talented and diverse candidates to the teaching profession—and teachers of color choose it as the number one strategy.**[118]

"

It should be noted, however, that rank-and-file teachers overwhelmingly support differentiated pay for hard-to-staff assignments and specializations."

> *"States and districts should increase compensation in subject areas and schools with acute staffing needs… In a world of constrained resources, such targeted salary increases will be both more feasible and more effective than across-the-board pay increases."*
>
> DAN GOLDHABER, ERIC HANUSHEK, THOMAS KANE, AND JIM WYCKOFF

Differentiated pay strategies also have support from some of the most prominent experts on the educator workforce. In a 2023 memo, national education workforce experts Dan Goldhaber, Eric Hanushek, Thomas Kane, and Jim Wyckoff stated that *"States and districts should increase compensation in subject areas and schools with acute staffing needs… In a world of constrained resources, such targeted salary increases will be both more feasible and more effective than across-the-board pay increases."*[119] In a 2023 paper, Education Resource Strategies made a set of similar recommendations.[120]

In contrast to the teaching profession, nursing contracts appear to make much more frequent use of differentiated pay for hard-to-staff assignments. **By contrasting pay policies in teaching with those in nursing—which, as we will elaborate, shares many parallels with teaching—we can gain valuable insights on how to reform and evolve teacher pay.**

Comparing Teaching and Nursing

Parallels between Teaching and Nursing

Teaching and nursing share several commonalities between their respective workforces: demographics, education requirements, and union affiliation.

Demographics. The teaching and nursing workforces have similar numbers of professionals among their ranks, with about 3,764,000 full- and part-time public school teachers and about 3,460,000 actively licensed and employed Registered Nurses (RNs).[121,122] Their gender ratios are also similar: Over 75% of the professionals in each workforce are women. This skewness is substantially different from the overall U.S. workforce, which is about 47% women.

While both professions are also predominantly White, the nursing workforce is somewhat more diverse (65% White, 11% Black, 9% Asian, and 9% Hispanic) than the teaching workforce (80% White, 9% Hispanic, 6% Black, and 2% Asian).[123,124]

Education Requirements. There are similarities between the professions in terms of education requirements as well. Licensed teachers and RNs both often require postsecondary training and a state-issued certification or license. These certifications or licenses usually require passing a test which verifies that candidates possess essential skills relevant to the profession. As part of licensure, RNs must pass the National Council Licensure Examination (NCLEX-RN) which is considered a rigorous exam because it assesses critical thinking and application of knowledge in complex, high-pressure situations rather than just memorization. Teacher licensure tests vary state-to-state (though most use common standardized tests including the PRAXIS or NES series, although with varying "cut scores" for passage) and often require a subject knowledge test in addition to a competency and/or pedagogy test.[125,126,127]

> *"By contrasting pay policies in teaching with those in nursing… we can gain valuable insights on how to reform and evolve teacher pay."*

For teaching, the postsecondary training required to enter the field generally involves a bachelor's degree at minimum, with some candidates choosing to complete an educator preparation program (EPP) as an undergraduate or graduate candidate or to complete an alternative EPP after attaining their bachelor's degree. In addition, some states require a master's degree to maintain licensure. As of the 2020-2021 school year, over half of all teachers in the U.S. had a master's degree or higher while 38% had only a bachelor's degree.[128]

For nursing, however, there is more variation: In 2022, 30% of licensed and employed RNs had an Associate's Degree in Nursing (ADN) or completed a two- to three-year clinical practice program; 58% held a bachelor's degree; and 12% had a master's or doctorate.[129] These education statistics suggest that nurse candidates have more pathways into their profession than teacher candidates, the latter of whom almost uniformly require at least a bachelor's degree to enter the profession.

It's important to note that these statistics only reflect the education levels of RNs and do not include Nurse Practitioners (NPs) or Advanced Practice Registered Nurses (APRNs), as those certifications can result in different job functions. We set them aside for the purposes of this paper in order to make the most appropriate comparison to teaching roles, whose job functions generally do not change with the attainment of an advanced degree.

Union Affiliation. Importantly, both professions have union representation, but there is a large gap in the level of affiliation. Nearly 70% of public school teachers are affiliated with a union,[130] while only about 17.5% of nurses report being unionized (though this is the highest prevalence among all healthcare workers). Both are higher than the total proportion of U.S. workers (10%) who are affiliated with a union.[131]

The difference between union affiliation of each field may be a result of the larger mixture of public and private employers in the healthcare ecosystem relative to the education ecosystem.

A commonality also exists within their union representation: the American Federation of Teachers (AFT) is the second-largest national union for teachers and the second-largest union for nurses within the AFL-CIO.[132]

	Employed Registered Nurses	Employed Licensed Teachers	U.S. Workforce
Population Size	3,459,209	3,764,000	170,591,000
% Women	88%	77%	47%
% By Race/Ethnicity	9% Asian 9% Black 11% Hispanic 65% White	2% Asian 6% Black 9% Hispanic 80% White	7% Asian 13% Black 19% Hispanic 77% White
% With Advanced Degree	12%	53%	16.5%
% Union Affiliated	17.5%	69%	10%

Data sources: National Library of Medicine, NCES 2018 National Teacher and Principal Survey, NCHWA Nursing Workforce Dashboard, Pew Research Center, U.S. Bureau of Labor Statistics: 2024 Employment Status, U.S. Bureau of Labor Statistics: 2023 Labor Force Statistics, and U.S. Bureau of Labor Statistics: 2024 Union Members.

State of Pay

Despite the similarities between the professions and the essential human services they provide to the country, the salaries of teachers and registered nurses are markedly different. As of 2024, the median annual wage for RNs was $93,600.[133] By contrast, the median annual wage for K-12 teachers was about $63,000.[134,135,136] In other words, at any K-12 grade level, the median salary for a registered nurse is about $30,000 more per year than a teacher. Without any adjustments for inflation, raises, or investments, **that's a difference of $1,500,000 in lifetime earnings**–meaning that teachers are far outpaced by nurses in their ability to afford basic expenses and save for the future.

Methodology

Through a comparative analysis, we examined six collective bargaining agreements (CBAs)—three in teaching and three in nursing—in which the AFT represents both nurses and teachers. The nurse and teacher CBAs were selected due to their overlapping or adjacent geographical jurisdiction in each state (Connecticut, Ohio, and New Jersey). Our goal was to understand how each CBA provides compensation for positions that are more in-demand and harder to staff.

It should be noted that these contracts are massive, complicated documents. In nursing, the documents ran anywhere between 39 and 75 pages. In teaching, they ranged from 87 to 125 pages. Nurse CBAs were also much harder to obtain than those for teachers. These considerations factored into our decision to limit our analysis to six CBAs.

For the purposes of comparing differentiated pay solely related to hard-to-staff teaching placements and specializations, we selected areas of need identified through our literature review. For hard-to-staff assignments in teaching, this meant differentials related to working in high-poverty schools (something that only requires willingness, not qualifications); for specializations, it meant serving in roles related to special education, EL or bilingual education, and STEM which generally, though not always, require additional experience or skills. We did not consider other teacher pay differentials such as for advanced degrees or education credits, lead teacher stipends, teacher mentorship, or performance pay. Though such types of differentiated pay may be useful compensation strategies worth policy consideration, they are not within the scope of this analysis.

To provide the best available comparisons of hard-to-staff assignments within nursing, we included differentials related to shifts that are generally less desired by workers—evening, overnight, and weekend. Like teaching in high-poverty schools, these require only willingness, not additional qualifications. Research indicates that evening, night, and weekend shifts tend to disrupt workers' family and social life, with notable negative effects on marital and parental relationships, leisure time, and opportunities for personal pursuits.[137,138] These disruptions are a major reason why such shifts are unpopular and why incentives are needed to fill them.

While we did include one nursing specialization in the discussion—nurse anesthetists—its analytical value is limited due to the nuances of the role which we explain below. To avoid improper comparisons, we did not consider differentials related to charge nurse shift premiums, Advanced Practice Registered Nurse (APRN) and Nurse Practitioner (NP) rates, travel nurse rates, on-call premiums, and overtime pay, Two of these—i.e., APRN and NP—involve substantially different job functions or increased responsibilities beyond that of a standard RN role (somewhere between an RN and a physician). Others are less directly comparable to teaching. Furthermore, in many cases—such as for travel nurses—national data is lacking.

Given structural differences in compensation between the professions—namely, that nurses are typically paid on an hourly basis while teachers are salaried and their corresponding differentials in the contracts were articulated accordingly—we compared differential amounts by calculating the differentials as a proportion of the lowest base salary in each contract. E.g., for nurses whose entry-level base pay is $30 per hour and can earn an overnight differential of $6 per hour, they can earn a 20% differential. For a teacher whose entry-level base salary is $50,000 and can earn a $5,000 bonus for working in a high-poverty school, they can earn a 10% differential.

Findings

Despite being negotiated by chapters of the same parent union (AFT), the CBAs we examined for teachers and nurses diverged substantially when it came to differentiated pay for hard-to-staff assignments and specializations. The contracts for nurses specified differentiated pay for hard-to-staff assignments (e.g., evening, overnight, and weekend shifts) and one high-demand specialty (anesthesiology) in ample amounts, acknowledging the added complexity and higher burden associated with certain work. Even though we know that nurses in certain speciality areas (e.g., ER nurses and those serving in neonatal intensive care units) are paid much more than other RNs, we did not see those differentials in the CBAs we studied. We discuss possible reasons below, but this did limit our ability to make direct comparisons between teaching and nursing when it comes to specializations.

By contrast, the contracts for teachers had either non-existent or much smaller differentials for hard-to-staff assignments and specializations.

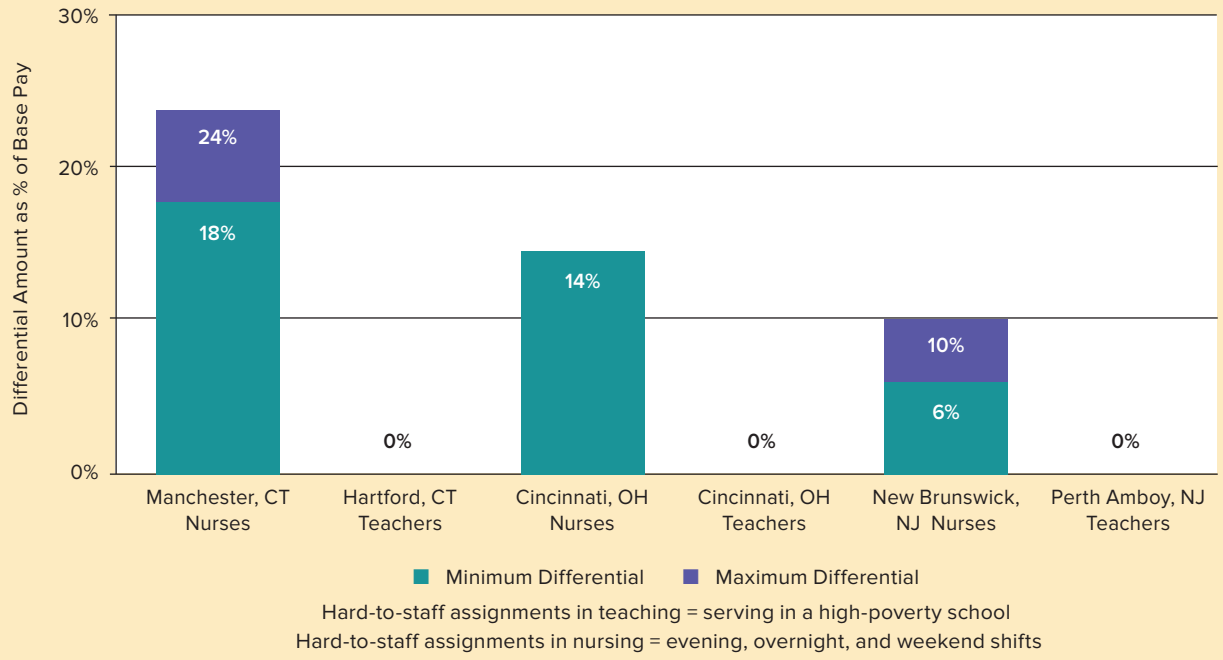
Where the teacher CBAs included language about differentials for hard-to-staff assignments and specializations, the accessibility of the differentials varied—restricted by administrator approval in all cases for hard-to-staff assignments and, in two of three cases, amounts were generally not enough to be a meaningful differentiator in teachers choosing a hard-to-staff placement.[139]

Specifically examining differentials for hard-to-staff assignments in each contract revealed that the nurse contracts provided substantial supplemental pay relative to base salaries. In contrast, the teacher contracts had, in theory, some albeit lower amounts of extra pay for serving in a high-poverty school which were, however, reduced to zero in practice by the failure to actually implement them (see additional details under each contract description below).

Summaries of the CBAs for each area are as follows:

Cincinnati, OH. In Cincinnati, Ohio, nurses receive a shift differential of $4 per hour for evening and overnight shifts, equating to a differential of about 14% for nurses with three or fewer years of experience.[140]

Unlike teachers, nurses tend to have access to differentials for hard-to-staff assignments



Source: Examined nurse and teacher collective bargaining agreements (see Appendix B) as well as follow-up communications with school districts about policy usage (given administrative restrictions in the contracts).

> *"Despite being negotiated by chapters of the same parent union (AFT), the CBAs we examined for teachers and nurses diverged substantially when it came to differentiated pay for hard-to-staff assignments and specializations."*

By contrast, teacher pay differentials are theoretically available for hard-to-staff placements in Cincinnati but, in actuality, are non-existent.[141] While there is a clause in the Cincinnati Federation of Teachers contract giving the superintendent authority to declare shortage-based needs, the funding is restricted behind multiple layers of bureaucratic processes. When contacted, Cincinnati Public Schools **officials informed us that the incentive policy has not been used since at least 2022.** Information was not available on its use prior to 2022.[142]

Manchester and Hartford, CT. Nurses in Manchester, Connecticut receive a shift premium of $5.25 per hour (18% of the starting pay rate as of 2021) for evening shifts and $7 per hour (24%) for overnight and weekend shifts.[143]

Like in Cincinnati, there are promising provisions in the Hartford teacher contract regarding differentiated pay for "high-need" schools that are not being implemented. They are, however, implementing some strong differential pay provisions for specializations, as detailed below.

In the Hartford contract, it is up to the school board to determine "areas of shortage or extreme need in filling vacant positions," for which the board may offer the "highest-quality" applicants a maximum boost of $10,000 ($5,000 in the previous contract) as a signing bonus (18% of the base salary rate).[144] Additionally, administrators of schools designated as "in need" by the school board have the discretion to offer signing bonuses for internal transfers of up to 20% of the teacher's base salary in exchange for a two-year commitment to their school.

Unfortunately, the district has essentially avoided availing itself of the latter opportunity in the contract. **The provision is made moot by the fact that *all* schools in Hartford have been deemed by the district as "high need."** As such, the 20% transfer incentive has not been used, according to district officials who spoke on the matter.[145]

However, the usage of Hartford's differentiated pay policy by district administrators is a little more encouraging than that of Cincinnati when it comes to *specialization*. Upon inquiry, officials shared that the district has used the policy to recruit teachers to shortage areas such as special education, science, math, Teaching English as a Second Language, and bilingual education. The average bonus per employee was just over $5,000 (9% of the base salary rate). Special education had the largest number of incentives distributed by far, accounting for nearly 50% of employees receiving bonuses for transferring or being hired into shortage areas. While the use of these differentials is commendable, they are still half the magnitude or less of the differentials for nurses in Manchester. And, as we pointed out earlier, these results are not all that surprising; differentials for special education teachers are offered by 41% of those districts studied nationally by NCTQ.

Officials also shared that the district had two special hiring initiatives—for which the policy was applied—focused on recruiting teachers who reflected the cultural backgrounds of their student population (specifically, those from Puerto Rico and the Carribean). Under these initiatives, teachers who joined the district were offered additional signing incentives (stable housing stipend, relocation stipend, and signing bonus) up to $11,000 (18% of the base salary rate). These are commendable and were not seen in any of the other contracts we studied, either in teaching or in nursing. But we don't have data on how often they were used and they don't quite fit into the categories we established for this paper.

New Brunswick and Perth Amboy, NJ. At Rutgers University (a public institution of higher education) medical campuses in New Brunswick, NJ, registered nurses receive evening and overnight differentials of $3.50 per hour (10% of their lowest pay rate as of 2021) as well as a weekend differential of $2.00 per hour (6% of their lowest pay rate).[146]

In the Rutgers nursing contract, we also found a pay differential for one specialization (with a caveat): Certified Registered Nurse Anesthetists (CRNAs), who specialize in administering anesthesia and other medications, have a starting salary of $224,640. CRNAs are a type of advanced practice registered nurse (APRN) in higher demand across the healthcare industry. This nursing specialization, however, is a difficult one to compare to teacher specializations, as it requires an advanced degree and several years of experience.[147]

Once again, the differentials for teachers in nearby Perth Amboy pale in comparison to those for nurses in nearby New Brunswick. While the existing contract (recently renewed) does have codified differentials for dual language and bilingual teachers and special education teachers, they are only annual stipends of $2,500 (5% of the lowest pay rate) and $1,000 (2%), respectively.[148,149] There is no differential for teaching at a high-poverty school.

Implications

The Importance of Substantial and Sustained Differentials. ***Based on this case review of teacher and nurse collective bargaining agreements in 3 geographic areas, differentiated pay appears to be an underutilized strategy within the teacher profession compared to the parallel profession of nursing, especially when it comes to hard-to-staff assignments*** (high-poverty schools in the case of teaching, and less desirable shifts in the field of nursing). Despite existing evidence about the effectiveness of differentiated pay for hard-to-staff assignments and specializations in teaching, **the examined contracts for teachers showed bureaucratically restrictive and financially inadequate policies on supplemental pay for hard-to-staff assignments and specializations, especially when compared side-by-side with nursing contracts.**

“Based on this case review of teacher and nurse collective bargaining agreements in 3 geographic areas, differentiated pay appears to be an underutilized strategy within the teacher profession compared to the parallel profession of nursing, especially when it comes to hard-to-staff assignments…”

The danger of restrictive and underfunded differentiated pay policies for hard-to-staff assignments and specializations in teacher CBAs is that they fail to adequately address high-quality teacher recruitment and retention. As the available literature shows, there does seem to be a threshold at which differentiated pay incentives work,[150] but both the CBAs examined here and the broader analysis of 148 school districts by NCTQ suggest that few districts are meeting the amounts that studies show are needed for them to be effective. Fundamentally, differentiated pay exists to pull educators into and retain them in places and subjects that they would otherwise not choose. It will take substantial, sustained incentives much larger than those currently offered to influence such career decisions at scale.

District and State Policy Implementation. In a time of strict budgetary constraints, differentiated pay for hard-to-staff assignments and specializations is one of several strategic staffing tools districts and states can use to address teacher shortages, turnover, and satisfaction—all of which influence student outcomes.

Differentiated pay could be implemented in a number of ways. In this paper, we focus on the role of collective bargaining agreements because that is the most common approach in both education and nursing. At the district level, differentiated pay could also be offered as annual bonuses outside of contracts (though negotiation through an MOU or the like may still be required) or by giving school leaders, such as principals, autonomy over hiring (instead of assignments based on bumping and seniority) and weighting funding based on student needs rather than teacher seniority in order for school administrators to set salaries and staffing assignments according to their school's specific needs.[151,152]

However, recognizing that district-level implementation is limited by economies of scale and that relationships with local teachers' unions may complicate scalability, state-level investments present another possible avenue. At the state level, funding could be offered to districts or schools through grant programs specifically tailored to address shortages in high-poverty and rural schools and specializations, such as the Teacher Vacancy Grant Pilot Program implemented in Illinois and the Teacher Incentive Allotment used in Texas which is formula funded but optional.[153,154] States could also offer pay scheme flexibility to districts, as was the case in Wisconsin, where increased autonomy from union contacts via state action resulted in higher and differentiated teacher pay as well as improved student outcomes.[155]

To directly incentivize individual teacher candidates, states might consider scaling a scholarship program that covers full tuition costs for a teacher preparation program in exchange for a multi-year commitment to a hard-to-staff assignment or specialization, as is the case for the federal Nurse Corps program.[156] While this may sound similar to the federal TEACH grant program, which has been found to be highly ineffective,[157] Nurse Corps has much more generous benefits for participants and, apparently, better management. Another approach with a different tact could be to introduce a sliding scale tax credit for teachers based on the poverty level of the school in which they teach, as seen in federal legislation introduced by Senator Cory Booker.[158]

We can't go into all the advantages and disadvantages of the above models in the limited space we have here. Most broadly, however, ***it is critical that incentives are widely known by, and readily accessible to, teachers who could prospectively take on roles in areas of need. It's also important that decisionmaking and access not be restricted by layers of bureaucracy.*** Additionally, the pay differential should be a substantial proportion of a teacher's salary and sustained over time in order to maximize its effects on teacher recruitment and retention.

"

…it is critical that incentives are widely known by, and readily accessible to, teachers who could prospectively take on roles in areas of need. It's also important that decisionmaking and access not be restricted by layers of bureaucracy."

Limitations and Future Considerations

Analytical Limitations. It is relevant to name the obvious: This comparative analysis between teacher CBAs and nurse CBAs is limited in its scope. This is for several reasons. Publicly available CBAs can be difficult to obtain, particularly in large enough numbers to analyze in aggregate. While NCTQ made a monumental effort to collect and summarize teaching CBAs across the country, no such database, that we are aware of, exists for nursing CBAs. And even when CBAs are obtained, they must be collectively analyzed within a few years; otherwise, they expire and may become inaccurate.[159]

In addition, to make appropriate comparisons between contracts, it was most worthwhile to find CBAs from the same geographic area, and ideally from the same parent union (such as AFT). This helps ensure that comparisons are appropriate relative to the demographics of the area, the workforce landscape, the cost of living, laws and policies, and other related local factors.

Relatedly, the employer landscapes between the fields have notable differences. The distribution of nurses across public and private healthcare institutions is markedly different than that of teachers, who disproportionately teach in public schools. This likely affects bargaining processes and outcomes; however, limited information was found during this analysis that could mediate this difference, so we determined that comparing contracts from the same localities and under the same parent union was the most apt approach. A future method to close this comparison gap could be to look solely at nursing CBAs from public hospitals.

Another limitation is ambiguity around pay rates for nursing specializations. The omission of rates for high-paying nursing specializations makes it more challenging to provide a substantial comparison to specializations in teaching. According to Nurse.org (and the Bureau of Labor Statistics data from which it sources its data), there are a number of nursing specialties that earn significantly more than the median salary noted earlier for RNs (but also require additional education or training).[160] These include, for example, emergency room nurses and those who serve in neonatal intensive care units. With the exception of the CRNA salary rates found in the Rutgers contract, such specializations were not specified in the examined contracts. This may be due to our limited sample size of collective bargaining agreements, the large proportion of nurses not affiliated with unions, the existence of pay differentials that operate outside CBAs, or other factors. Because we tried to be fairly focused here and make the most valid comparisons between teachers and rank-and-file RNs, not to mention our limited capacity to collect the necessary information, we did not delve deeply into differential pay for various nursing specializations—but it may be a worthy area of study for other researchers.

Finally, there is an unexplored connection between pay differentials in nursing and efficacy. Our exploration of the research did not yield any studies that examined the relationship between differentials for hard-to-staff assignments and specializations in nursing contracts and recruitment and retention, workplace efficacy, or patient outcomes. Instead, the literature suggests that differentials for hard-to-staff nursing roles are seen as market rate pay adjustments necessary to meet workforce and institutional needs. The relationship between differentials for hard-to-staff nursing roles and outcomes is an opportunity for future research; at the same time, ***the acceptance of differentiated pay as an essential feature of nursing compensation to meet the needs of the profession is a lesson from which the education ecosystem could learn.***

> *"… the acceptance of differentiated pay as an essential feature of nursing compensation to meet the needs of the profession is a lesson from which the education ecosystem could learn."*

Limitations to Differentiated Pay as a Strategy. There are also important limitations to note regarding the use of differentiated pay as a strategy to improve the teaching profession. **First and foremost, differentiated pay should not be considered a "silver bullet" solution** to the challenges plaguing the educator workforce; the strategy may have a limited effect unless it is implemented in tandem with other vital reforms, especially those that improve the preparation and working conditions of teachers and that condition differentiated pay on qualifications and/or effectiveness.

Second, ***in instances where differentiated pay for hard-to-staff assignments and specializations is incorporated into teacher CBAs, the amounts must be substantial enough to be a compelling incentive*** to influence decision-making by teachers regarding their choices to teach at hard-to-staff schools and in high-demand subjects. While it is clear that differential amounts offered through contracts are often inadequate, the precise threshold at which they consistently influence placement decisions is as yet unclear; as noted, however, available research suggests that it is at least 7.5% of a teacher's base salary.[161,162]

Finally, there are political considerations as well. When contemplating policies about teacher pay, politicians and policymakers may be more readily drawn to the merits of universal increases to teacher pay. The message of "more for all," understandably, is a simpler one than "more for some who serve the greatest need." However, as noted earlier, the fiscal reality of districts is that substantial universal increases are unlikely at this time due to budgetary constraints, and even with such increases, shortages in schools and subject areas that experience more teacher vacancies would be likely to remain without targeted investments. Moreover, simply providing universal pay in perpetuity locks us in, forever, to the many inequities and inefficiencies of the current system.

"

in instances where differentiated pay for hard-to-staff assignments and specializations is incorporated into teacher CBAs, the amounts must be substantial enough to be a compelling incentive…."

Policymakers may also receive opposition from the leadership of teachers' unions who believe that differentiated pay is, in some way, unfair, as is the case in California.[163] As noted earlier, however, the vast majority of rank-and-file union members support differentiated pay, with 92% of union members surveyed favoring differentiated pay for working in hard-to-staff schools and 87% favoring it for hard-to-staff subjects.[164] And, as this paper makes clear, such pay differentials are de rigueur in a parallel profession under union representation.

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Policymakers may also receive opposition from the leadership of teachers' unions who believe that differentiated pay is, in some way, unfair, as is the case in California. However, the vast majority of rank-and-file union members support differentiated pay…."

There is a clear need for additional research and policy development. In terms of comparing teacher and nurse contracts, a more expansive review of comparable collective bargaining agreements would help to confirm and expand beyond the preliminary findings of this paper. Additionally, if available in the literature, an understanding of the impacts of differentiated pay for hard-to-staff assignments and specializations in nursing on outcomes as well as how nurses in specializations are compensated would also be informative. As the implementation of differentiated pay expands, it will be important to examine long-term effects on teacher demographics, quality, job satisfaction, retention, and similar measures. Much of these analyses will be contingent on the presence and robustness of district- and state-level data collection systems which the lack thereof, as noted earlier, is a hindrance to effectiveness analysis of teacher shortages.

“There is a clear need for additional research and policy development. In terms of comparing teacher and nurse contracts, a more expansive review of comparable collective bargaining agreements would help to confirm and expand beyond the preliminary findings of this paper.”

Conclusion

Providing substantial and sustained differentiated pay for those working in hard-to-staff schools and subjects is a crucial action to strengthen U.S. education systems. By valuing and supporting educators through fair and targeted compensation, we can attract and retain highly qualified individuals who are passionate about teaching while also investing in areas of greatest need.

Specifically, these measures would provide more equitable education to historically underserved communities, promote STEM proficiency, embrace language diversity, and meet the unique needs of students with disabilities. By prioritizing these areas, we can foster a well-educated and empowered generation capable of addressing complex national and global challenges.

The differentiated compensation model used in nursing—a demographically similar field to teaching—provides a promising example of how schools, districts, and states could leverage differentiated pay for hard-to-staff assignments and specializations to recruit and equitably distribute qualified teachers across schools and subjects with the highest need. It also shows that there is nothing inherently "anti-union" about differentiated pay. With an evidence basis from districts and states across the country and precedent set by a parallel public service field with overlapping union representation, differentiated pay for hard-to-staff assignments and specializations is an opportunity for industry leaders and policymakers to invest in the present and future of the educator workforce.

The urgency to recruit and retain effective teachers in the most chronically understaffed schools and classrooms is clear. Schools with high concentrations of low-income students and students of color as well as special education, English Learner and bilingual education, and STEM classrooms continue to experience dire staffing shortages. Policymakers must respond to this ongoing crisis. The field of nursing, with its similarities to teaching, offers a lesson on how to move forward: Provide differentiated pay for hard-to-staff assignments and specializations to get the best teachers we have to where we need them most.

"*The differentiated compensation model used in nursing provides a promising example of how schools, districts, and states could leverage differentiated pay for hard-to-staff assignments and specializations to recruit and equitably distribute qualified teachers across schools and subjects with the highest need. It also shows that there is nothing inherently "anti-union" about differentiated pay."*

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Appendix A Summary of Studies on Differentiated Pay for Hard-to-Staff Assignments and Specializations in Teaching

Study	Location	Year(s)	Dollar Amount and Differentiator(s)	Results
The Impact of a $10,000 Bonus on Special Education Teacher Shortages in Hawai'i	Hawai'i	2020-present	$10,000 salary increase for special education teachers; "tiered school" bonuses of up to $8,000 for teaching in hard-to-staff schools.	Reduced the proportion of vacant special education teaching positions by 32% and the proportion of special education positions that were vacant or filled by an unlicensed teacher by 35% (mostly through movement from general education roles).
Can a District-Level Teacher Salary Incentive Policy Improve Teacher Recruitment and Retention?	San Francisco	2009-present	$2,000 bonus for teaching in a hard-to-staff school; $1,000 bonus for teaching in a hard-to-fill subject; $2,500 retention bonus after the 4th year and $3,500 after the 8th year.	District-wide-policy. Overall, the district received more and better applicants. Financial incentives did not have an impact on retention in hard-to-staff schools (likely due to the economy). Retention was high across the district during the study.
Incentives, Selection, and Teacher Performance: Evidence From Impact	Washington, D.C.	2009-present	Up to $25,000 one-time bonus for highly effective teachers, and up to $27,000 increase in base pay (if you teach in high-poverty school/high needs subject and get highly effective rating for 2 years in a row).	Increased retention of high-performing teachers (highly effective) and increased voluntary attrition of teachers who were ineffective or minimally effective.
Attracting and Retaining Highly Effective Educators in Hard-to-Staff Schools	Dallas	2015-2018	$2,000 signing bonus, and between $6,000-10,000 depending on prior year evaluation to teachers who taught at ACE schools (lowest-performing).	Achievement increased in both math and reading; retention was high as long as stipend remained. Teacher turnover increased after stipend ended.

Appendix A Summary of Studies on Differentiated Pay for Hard-to-Staff Assignments and Specializations in Teaching *(continued)*

Study	Location	Year(s)	Dollar Amount and Differentiator(s)	Results
The Effects of Differentiated Pay on Teacher Recruitment and Retention	Georgia	2010-2015	Total of $21,000 in years 1-5 (it was supposed to extend to teachers beyond 5 years of experience, but never did).	Bonuses reduced attrition of existing math and science teachers between 18-28%. No evidence it attracted more teaching candidates into becoming math and science teachers.
Effective Teacher Retention Bonuses: Evidence From Tennessee	Tennessee	2012-2013	$5,000 bonus (about a 10% salary increase) for any teacher that is highly effective (Level 5) and teaches at a "Priority School," or the 82 schools in the bottom 5% of all schools according to composite proficiency rate.	In tested subjects, retention of highly effective teachers increased by statistically significant by up to 20%. In non-tested subjects, retention decreased. Authors surmise teachers in non-tested subjects, even with retention bonus, have little incentive to stay since school performance is heavily weighted in teacher evaluations for non-tested subjects (Which might make a teacher no longer be highly effective in a low-performing school).
Do Bonuses Affect Teacher Staffing and Student Achievement in High Poverty Schools? Evidence from an Incentive for National Board Certified Teachers in Washington State.	Washington	2007-2013	$10,000 for Nationally Board-Certified Teachers (NBCTs) in high-poverty schools.	The proportion of NBCTs in high-poverty schools increased by 4-8 percentage points over the first five years of eligibility, but did not result in detectable effects on student test achievement. This suggests that achieving NCBT status may not be a good pairing for differentiated pay to work in high-poverty schools.
Transfer Incentives for High-Performing Teachers	Varied	2009-2012	$10,000 bonus each year for two years (total of $20,000).	Higher retention of teachers receiving the bonus; higher test scores for elementary students; no effect on student achievement for middle school students.

Appendix A Summary of Studies on Differentiated Pay for Hard-to-Staff Assignments and Specializations in Teaching *(continued)*

Study	Location	Year(s)	Dollar Amount and Differentiator(s)	Results
Financial Incentives to Promote Teacher Recruitment and Retention: An Analysis of the Florida Critical Teacher Shortage Program	Florida	1995-2012 (study done in 2015)	Loan forgiveness for teachers in high-need subjects ($2,500 per year, $5,000 for graduate loans).	Loan forgiveness did lower attrition compared to the control group, but also some data pointed to lower value-add of teachers who took loan forgiveness. A follow-up study found that the loan forgiveness program reduced attrition, and the effect dissipated when the amount was lowered. The one-time bonus program was also effective.
Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina	North Carolina	2001-2004	$1,800 retention bonus per year to certified math, science, and special education teachers in high poverty or academically failing schools.	12% reduction in turnover for those receiving bonus.
Do Financial Incentives Help Low-Performing Schools Attract and Keep Academically Talented Teachers? Evidence from California	California: Governor's Teaching Fellowship	2000-2002 (program discontinued after 2 years due to costs)	$10,000 bonus each year for two years (total of $20,000).	Higher retention of teachers receiving the bonus; higher test scores for elementary students; no effect on student achievement for middle school students.

Appendix B Summary of Examined AFT Collective Bargaining Agreements (CBAs)

Contract	Differential Type	Differential Specifics	Dollar Amount	% of Base Pay	Annualized Differential
Cincinnati, OH Nurse CBA	Hard-to-Staff Assignment	Evening or overnight	$4.00 per hour	14%	$8,320
Cincinnati, OH Teacher CBA	Hard-to-Staff Assignment or Specialization	Superintendent-designated for content area shortages or a district/ building need	Up to $3,000 one-time signing bonus	6%	$3,000
Manchester, CT Nurse CBA	Hard-to-Staff Assignment	Evening	$5.25 per hour	18%	$10,920
	Hard-to-Staff Assignment	Overnight or weekend	$7.00 per hour	24%	$14,560
	Specialization	Listed certifications	$250 per year	<1%	$250
Hartford, CT Teacher CBA	Specialization	Board-designated areas of shortage or extreme need; for "highest-quality" candidates.	Up to $10,000 one-time signing bonus	18%	$10,000
	Hard-to-Staff Assignment	Administrators of Board-designated schools in need may issue to internal candidates in exchange for two-year commitment to location.	Varies (up to 20% of base salary)	20%	$10,910
New Brunswick, NJ Nurse CBA	Hard-to-Staff Assignment	Evening or overnight	$3.50 per hour	10%	$7,280
	Hard-to-Staff Assignment	Weekend	$2.00 per hour	6%	$4,160
	Specialization	Certified Registered Nurse Anesthetists (CRNAs)	$224,640 base annual salary	N/A	N/A
Perth Amboy, NJ Teacher CBA	Specialization	Dual language and bilingual education	$2,500 per year	5%	$2,500
	Specialization	Special education	$1,000 per year	2%	$1,000

Note: *Because nurse compensation is listed on an hourly basis in the contracts, the annualized base pay and differential calculations assume a schedule of 40 hours per week for 52 weeks. Actual accrual of differentiated pay may be less or more depending on the regularity of a nurse's shifts related to the differential or any overtime related to the differentiated rate. However, because both the base pay and differential rates are hourly, the proportion is still constant (e.g., a nurse under the Cincinnati contract who works an evening or overnight shift will earn a differential equivalent to 14% of their hourly rate, regardless of whether it was one shift or every shift).*