Landscape Analysis of the Teaching Profession

April 2025

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INTRODUCTION

The following report represents our attempt both to synthesize the current landscape of the teaching profession in the United States and to identify areas of research, policy, and practice which show promise in strengthening the profession. To guide our development of this landscape analysis, we conducted a robust review of existing research on the state of the teaching profession, as well as of state and federal policies and programs. Additionally, we organized a series of three convenings between March 2024 and January 2025 to learn from diverse stakeholders across the field engaged in working across schools, universities, non-profits, foundations, unions, and other organizations connected to the work of teaching and teacher education. In total, over 100 distinct education researchers, policymakers, practitioners, non-profit leaders, and foundation leaders attended these three convenings (Appendix A). Each of the individuals who participated in these convenings helped push our thinking and strengthen the findings and recommendations of this report.

The resulting report documents both the intense challenges faced by the teaching profession today, as well as the immense opportunities to strengthen the education system through investing in the teaching profession. In particular, we identify four primary areas of opportunity for policymakers, researchers, and foundations to help strengthen the teaching profession:

1. Developing and conducting research on state-level teacher career trajectories
2. Investing in statewide and federal data systems
3. Building regional, field-level, and cross-state capacity
4. Investing in competitive and equitable teacher compensation models

Although we are publishing this report during a moment of mounting political challenges to public education, we see timely investments in the K-12 teaching profession as critical to protecting both our education system and democracy more broadly. As we detail in this report, doubling down on investments in the teaching profession today is critical to both ensuring that all students have access to high-quality teachers, and to safeguarding our democracy at large. We hope that the field approaches investments in the K-12 teaching profession with the urgency it requires.

Funding Acknowledgement: This research was supported by the William and Flora Hewlett Foundation. We are grateful to the Foundation for their support of this work. The conclusions and recommendations included in this report represent the views of the authors and do not represent the position of the William and Flora Hewlett Foundation.

STATE OF THE TEACHING PROFESSION TODAY

The well-being of the K-12 teaching profession is foundational to the health of our democracy (Darling-Hammond, 2005), and the failure to adequately prepare and retain a diverse, high-quality teaching force endangers the future of our democratic society. K-12 schools are one of the nation's most powerful democratic institutions: they are one of the first public spaces where the next generation learns civic participation, critical thinking, and how to navigate differences. Public education may be the most powerful tool in navigating the growing threats to our multiracial democracy, and K-12 teachers sit at the helm of this work.

As the public education system faces growing funding cuts and political attacks, preserving the health of the K-12 teaching profession is paramount. K-12 teaching is the largest occupation of college-educated workers today, with over 3.8 million Americans teaching in K-12 schools, as of 2020-21 (National Center for Education Statistics, 2022). High-quality teachers remain one of the most important school-related factors to support student learning (e.g. Darling-Hammond, 2000; Rivkin et al., 2005; Rockoff, 2004) and students' long-term life outcomes (Chetty et al., 2014). However, access to high-quality teachers is inequitably distributed across our school system (Clotfelter et al., 2005; Goldhaber et al., 2015b).

The crucial importance of teachers is complicated by the fact that the status and health of the K-12 teaching profession in the United States is "at or near its lowest levels in 50 years" (Kraft & Lyon, 2024, p. 1). School districts nationwide are currently facing persistent and growing teacher shortages (Bacher-Hicks et al., 2023; Goldhaber & Theobald, 2023; Ingersoll & Tran, 2023), while enrollment in teacher education programs have declined, on average, over the last decade (Wilson & Kelley, 2022). And despite the growing diversity of K-12 students and American society more broadly, the K-12 teacher workforce remains persistently White and female (Gist & Bristol, 2023).

Though the COVID-19 pandemic exacerbated these dynamics, teaching has historically been seen as low-status, low-skilled work in the United States (Lortie, 1975). As historians have illustrated, these negative perceptions arise, in part, from the highly-feminized nature of teaching in a society that has historically undervalued women's work (Goldstein, 2015). The undervaluation of teaching has historically led to limited investments in teaching and teacher education by policymakers and higher education institutions (Goldstein, 2015).

The declining well-being of the K-12 teaching profession should perhaps be unsurprising, given the increasing demands on teachers' work. Teachers have long been positioned as both the problem and the solution to broader issues in U.S. education (Pawlewicz, 2020). As school systems continue to rebound from the COVID-19 pandemic, teachers face increased demands on their work, such as dealing with increased student mental health challenges (Abrams, 2023). Additionally, the rapid proliferation of new technologies, such as artificial intelligence (AI), are quickly changing the demands on teachers' work.

At the same time, the historical tendency to displace broader societal problems onto the education system, and teachers especially, runs deep in the American education system (Labaree, 2008). Teachers in the US are expected to fill in social gaps in an inequitably funded system (Baker & Corcoran, 2012; Johnson, 2019), all while earning more than 25 percent less than college graduates in other fields—a gap that has widened significantly since the mid-1990s (Allegretto, 2023). Additionally, the teaching profession has become a focal point of political attacks over public schooling, with right-wing attacks on "critical race theory" and restrictions on teaching topics like race, gender, and sexuality growing nationwide and adding additional political pressures to teachers' work (Bertrand et al., 2023; Jayakumar & Kohli, 2023; LoBue & Douglass, 2023; Woo et al., 2023). In these ways, the demands on teachers' work continue to expand exponentially, at the very time respect and support for their work is at its lowest levels.

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As such, responding to the growing threats to the teaching profession and making teaching a well-respected profession, which attracts a diverse and high-quality set of professionals into its ranks, is critical. Teaching is complex, intellectual and professional work. Teachers operate within dynamic work environments, and must draw upon a robust professional knowledge base and make complex judgements in-the-moment in order to equitably serve diverse student populations in the context of persistent social inequalities. One of the most foundational roles teachers play is in supporting students to develop the skills for democratic participation. This involves fostering critical thinking, encouraging diverse perspectives, and creating inclusive environments where students can engage in meaningful dialogue (Hess & McAvoy, 2014). In these ways, teachers must be prepared to navigate not only the complex demands within their own classrooms, but must also respond to the broader social and political environments which shape schooling today. Preparing and supporting teachers to engage in this critical intellectual and democratic work requires robust investment in the recruitment, retention, and ongoing professional development of teachers.

To explore potential avenues for strengthening the teaching profession, this report begins by offering a descriptive analysis of the current state of the profession, focusing on three key areas:

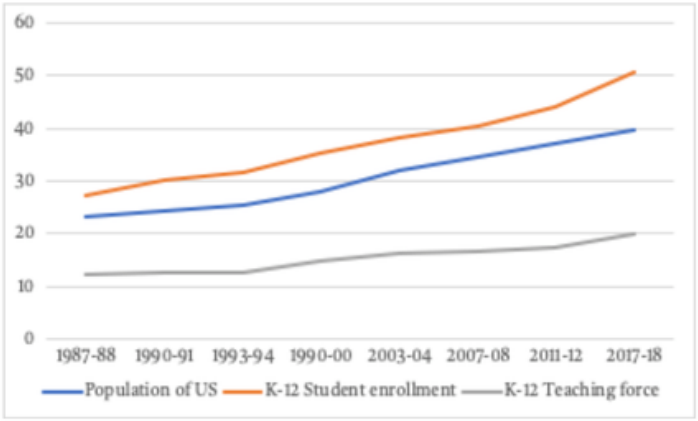
(1) who is entering teaching,
(2) how teachers are being prepared, and
(3) patterns in teacher retention and attrition.

These trends highlight the risks to American democracy if we fail to address the growing challenges to the teaching profession and set the stage for the recommendations we offer in the following sections.

Who is going into teaching?

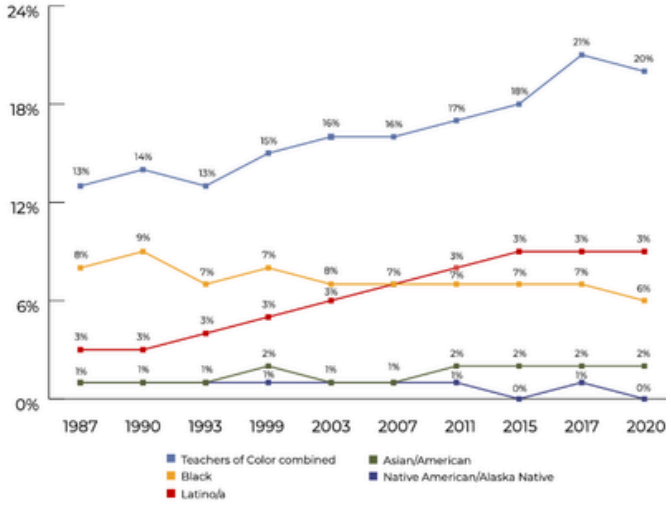
The K-12 teacher workforce remains overwhelmingly female and White. Since its inception, the K-12 teacher workforce in the US has been predominantly female—a trend that has intensified over the past several decades (Ingersoll et al., 2011). Despite the fact that students of color now comprise the majority of the K-12 public school population, more than 80 percent of their teachers are White (Figure 1). While the overall share of teachers of color has grown in recent decades (Ingersoll et al., 2021), the proportion of Black teachers has declined, with only 6 percent of the public K-12 teaching force identifying as Black as of 2020 (Figure 2). And despite an increased percentage of Latinx teachers, the percentage of Latinx teachers (3%) remains a fraction of the share of Latinx students in public schools nationally (29%) (National Center for Education Statistics, 2024).

Figure 1. Percent US Population, Students, and Teachers of Color: 1987-2018



Sources: Ingersoll et al. (2019); Ingersoll et al. (2021)

Figure 2. The Share of Teachers of Color in the Teacher Workforce: 1987-2020



Source: Bristol & Carver-Thomas (2024), drawing on data from National Center for Education Statistics

Historic racial inequities in pathways into the teaching profession have become deeply entrenched across all levels of the education system—from K–12 through higher education—disproportionately impacting Black, Latinx, Asian American, and Indigenous communities. In the wake of the landmark Brown v. Board of Education decision seventy years ago, more than 31,000 Black educators were dismissed in preparation for desegregation (Siddle-Walker, 2013). Black students accumulate significantly more student loan debt than their White counterparts—a disparity that more than triples post-graduation (Scott-Clayton & Li, 2016). Similarly, Latinx teachers are more likely to depend on federal student loans for both graduate and undergraduate education than their White peers (Fiddiman et al., 2019). Teacher licensure exams disproportionately prevent Black and Latinx candidates from entering the teaching profession (Nettles et al., 2011). Recent work in Tennessee documents that Black and White students enrolled in bachelor's degree programs report equivalent interest in completing a teaching major, but, among students who declare a teaching major, Black students are 31% less likely to become licensed than their White peers—suggesting that the licensure exams are the largest contributor to under-representation of Black educators in Tennessee (Bardelli et al., 2024).

The benefits of a diverse teacher workforce have been well-documented empirically (e.g., Blazar, 2024; Dee, 2004; Gist & Bristol, 2023; Irvine, 1989; Milner, 2006). Students' access to "same-race" teachers who reflect their own racial/ethnic identities increases their academic success and persistence, and can support students' sense of belonging in their schools (Bristol & Martin Fernandez, 2019; Dee, 2005; Gershenson et al., 2022). Teachers of color can also serve as positive role models to students of color (Villegas & Lucas, 2004), and draw on their own cultural knowledge to more effectively support their students' learning (Brayboy & Maughan, 2009; Kim & An, 2024). More broadly, cultivating a diverse teacher workforce which reflects the culture and identities of the school communities and society within which schools are embedded is foundational to the preservation of our multi-racial democracy.

Over the past several decades, the average experience level of the K-12 teacher workforce has declined. Whereas the modal teacher had 15 years of experience in 1987-1988, the modal teacher was still in their first year of teaching by 2007-2008 (Ingersoll et al., 2021). In the wake of the 2008 recession, more teachers stayed in their roles; however, by the 2017-2018 school year, the modal teacher was again in their first year of teaching. The declining experience levels of teachers is concerning, given that less experienced teachers have fewer opportunities to benefit from ongoing mentoring and induction support, and teacher experience is positively associated with higher levels of student achievement (Kini & Podolsky, 2016). Teachers in their first few years in the profession are less effective than their more experienced peers, given that teachers make their most significant improvement in these first few years (Kini & Podolsky, 2016). These patterns exacerbate school-level differences in student experiences and teacher working conditions, as Title I schools have disproportionately less experienced teachers, on average (Carver-Thomas & Darling-Hammond, 2019).

How are teachers being prepared?

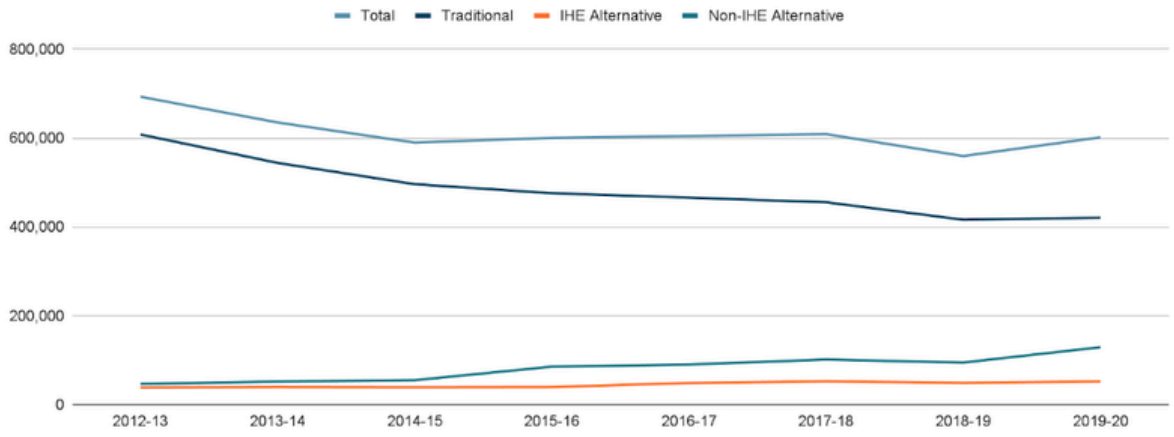
The field of teacher education has experienced declining enrollments over the past decade (Figure 3). As of 2017-18, the over 560,000 prospective teachers in the US were enrolled in teacher education programs housed in over 2,100 institutions across the nation (Irwin et al., 2021, as cited in Wilson & Kelley, 2022). Though these diverse pathways into the teaching profession are defined in inconsistent ways in the field, we employ the following language, which is employed in federal data collection:

- "**Traditional" pathways**—i.e., those based in institutes of higher education (IHE) which confer bachelor's or master's degrees. These include, for example, university-based pathways, which confer undergraduate and/or M.A. degrees in teaching. In these pathways, teacher candidates typically work as student teachers under the supervision of a mentor teacher.

- **"IHE-based alternative" pathways**—i.e., those based in IHEs which have candidates become teachers of record before they are credentialed. These include, for example, teacher residencies run through universities, wherein teachers work as teachers-of-record in the field while becoming credentialed.

- **"Non-IHE alternative" pathways**—i.e., those based in other organizations (e.g., districts, charter networks, private organizations) which have candidates become teachers of record before they are credentialed. These include, for example, pathways run through districts, for-profit programs, non-profits, etc., wherein teachers work as teachers-of-record in the field while becoming credentialed.

Figure 3. Number of Individuals Enrolled in Teacher Education, by Pathway Type: 2012-13 to 2019-2020

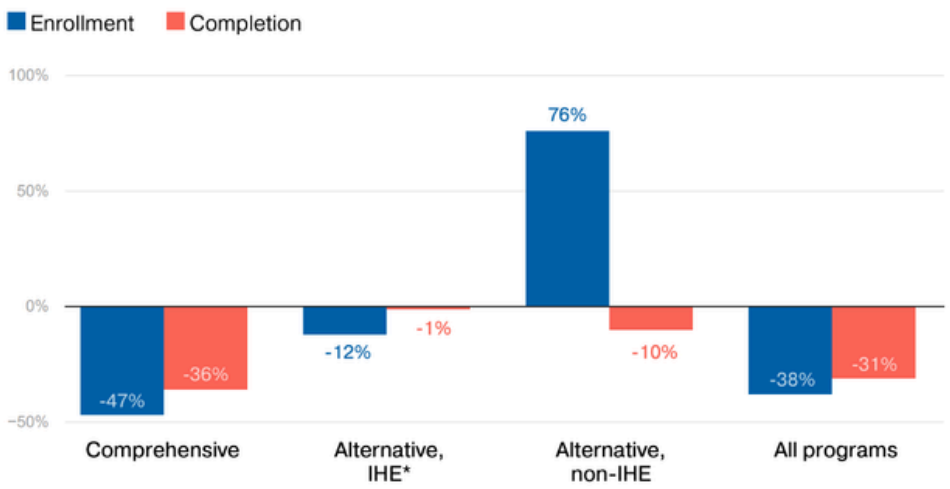


Source: National Center for Education Statistics (NCES)

Even within each of these pathways, however, there is significant variation, making it difficult to make broad claims about pathway types. Across these pathways, traditional, university-based pathways have seen rapid declines in enrollment in recent years (Figure 3). Nine states in the US have experienced declines of over 50 percent, while only five states and Washington, D.C. experienced increased enrollments in recent years (Wilson & Kelley, 2022, p. 2). Pathways such as Teach for America have experienced significant declines in enrollment over this same period (Backes & Hansen, 2023). The only pathways which have experienced increased enrollment since 2010-11 are non-IHE, alternative certification pathways (King & Yin, 2023).

All teacher education pathways have seen declines in completion rates since 2010. On average, completion across pathway types declined by 31%; however, these shifts were most concentrated in traditional, university-based pathways (Figure 4; King & Yin, 2022). Whereas completion levels in traditional, university-based pathways declined by 36% over this period, completion rates in alternative, IHE-based pathways only declined by 1%. Notably, not all teachers will go on to become teachers after going through a teacher education pathway. In Washington state, for example, one-third of the individuals who trained to become a teacher in 2005 to 2015 and received a teaching credential never pursued a public teaching career (Goldhaber et al., 2023b). In 2013, fewer than 100,000 of the over 300,000 teachers who completed teacher education pathways were hired in teaching roles nationally (Cowan et al., 2016). The declining completion rates are compounded by these additional "leaks" in the teacher pipeline, between teachers' completion of a teacher education pathway and their hiring as teachers of record.

Figure 4. Percentage Change in Enrollment and Completion in Teacher Education, By Pathway Type: 2010-11 to 2018-19



Source: King & Yin (2022)

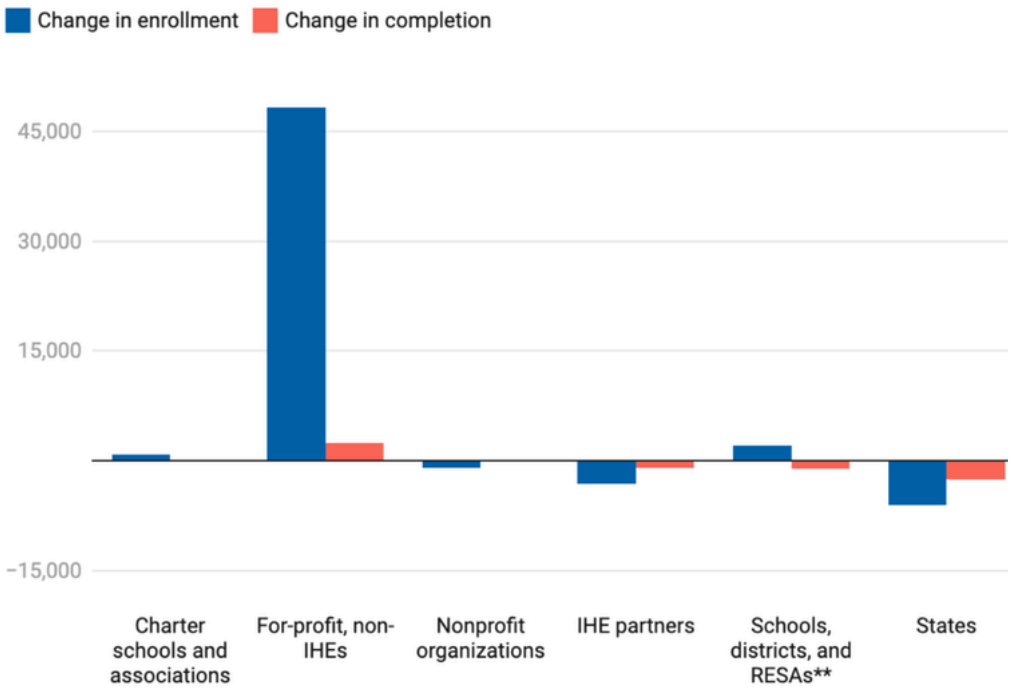
As traditional pathways prepare a declining share of the teaching profession, new pathways into teaching continue to emerge. Though traditional pathways previously held a monopoly over the preparation of teachers in the US in the 1990s (Fraser, 2007), these pathways have seen rapid declines in enrollment in recent years, and the landscape of teacher education providers in the US has grown increasingly crowded and fragmented with the emergence of new pathways into the profession (Cochran-Smith, 2023). A number of new promising pathways into teaching have emerged—e.g., Grow-Your-Own programs, teacher residencies, and pathways hosted by charter networks. The growing diversity of pathways into teaching could be viewed as a strength, as it means that school districts can be more creative in tapping into existing expertise in the field. However, the diverse pathways also present a challenge, as there may be wide variation in the quality of different pathways into teaching.

Within this shifting landscape, there has been a growing move towards control by the private sector over the work of teacher education over the last several decades. The field saw a rise of alternative certification pathways in the 1990s (Grossman & Loeb, 2008), as programs like Teach For America and other non-traditional pathways proliferated in the US. A decade later, "new Graduate Schools of Education" (or "nGSEs") emerged, largely out of charter networks, to prepare teachers. These pathways are classified as IHEs (i.e., institutions of higher education) by state governments and confer M.A. degrees to teachers, but are not based within universities (Cochran-Smith, 2021). Fifty percent of the ten known nGSEs grew out of existing charter networks, and these pathways represent a site of growing philanthropic investments ($164 million as of 2020) (Boston College, n.d.).

Within the growing non-IHE alternative sector, for-profit pathways continue to quietly and rapidly proliferate. Although alternative certification pathways have grown in popularity since the 1990s (Grossman & Loeb, 2008), there has been a more recent turn towards for-profit, non-IHE alternative certification providers since 2002, when Texas became the first state to authorize for-profit providers (Bland et al., 2023). Despite the fact that such for-profit pathways operate in only 11 states to date, they now enroll nearly 70 percent of all teachers in the non-IHE alternative certification sector (King & Yin, 2022). Mirroring the broader landscape of for-profit higher education in the United States (Morey, 2001), for-profit teacher education programs often operate in flexible online formats and at lower costs, and promise to increase the accessibility and diversity of the teaching profession.

These pathways have expanded at a particularly fast rate in states with less strict regulatory policy environments: in Texas, for example, enrollment in for-profit alternative pathways has increased by 500 percent in the past five years, and two out of every five newly employed teachers in the state between 2012 and 2020 were prepared in for-profit pathways (Bland et al., 2023). Although completion levels declined for alternative, IHE-based pathways between 2010-11 and 2018-19, this shift masks the increasing enrollment and completion rates in *for-profit pathways* (Figure 5).

Figure 5. Change in enrollment and completion by non-IHE alternative pathways: 2010-11 to 2018-19



Source: King & Yin (2022)

Within this for-profit landscape, nearly 90 percent of teachers enrolled in for-profit, non-IHE alternative certification pathways are enrolled within a single for-profit program: Teachers of Tomorrow LLC (formerly, A+ Texas Teachers) (King & Yin, 2022). This is notable, given that Teachers of Tomorrow has faced intense regulatory scrutiny in recent years for failing to meet state standards for teacher preparation in Texas (Richman, 2023). Although the program was placed on probation, they have prepared over 80,000 teachers across the ten states they are currently operating across (Teachers of Tomorrow, n.d.). Given the fact that the high costs of becoming a teacher are a barrier to diversifying the profession (Carver-Thomas, 2018; García et al., 2023), the field of teacher education must grapple with questions of how to make pathways into teaching more accessible and affordable. However, the proliferation of these routes into teaching raises concern, as we know relatively little about the quality of preparation provided.

Despite the proliferation of for-profit pathways into teaching and concerns over their quality, the research base on these pathways is scarce. The majority of research on teacher education to date has focused on traditional, university-based and alternative pathways, and much less research has examined what teacher education looks like within the growing for-profit sector. What literature does exist finds evidence that teachers who are trained through these routes are more likely to leave the profession at higher rates (Edwards & Magill, 2024), and that students who have teachers trained through for-profit routes perform worse academically in both math and ELA than their peers (Kirksey & Gottlieb, 2024).

The for-profit orientation of these programs may also undercut the democratic aims of teaching (Kaul, 2024a). As traditional pathways increasingly create partnerships with for-profit pathways (Morey, 2001), the influence of such for-profit pathways over the preparation of teachers may grow even more pronounced.

Though the challenges faced by the teaching profession today are resonant of deeper, perennial challenges faced by the profession, these findings document that the teacher education infrastructure today has become considerably more diverse than previously. This may be both a strength and a challenge of the current system. On the one hand, the diverse pathways into the profession may offer the field a greater ability to recruit a more diverse teacher workforce into the profession, and tap into existing talent already connected to school districts. However, given the wide variation in pathways and lack of consistent field-level systems to provide guardrails on these diverse pathways, the field is now faced with the challenge of ensuring that these diverse pathways all equitably prepare teachers to be effective in their roles and stay long-term in the field.

What are the patterns in teacher retention and attrition?

In addition to the growing challenges with *recruiting* teachers into the profession, teacher *retention* remains a persistent challenge across the US, as districts and states deal with the growing challenge of teacher shortages. Some scholars have argued that the problem facing the teaching profession has more to do with teacher turnover than with preparation (Ingersoll, 2001). In this way, teacher shortages are both a supply and demand issue and also a teacher recruitment issue.

Though the field is in consensus that teacher shortages exist, there are differing estimates on the magnitude of those shortages, in part due to the inconsistencies of state data systems. For example, recent estimates from the Learning Policy Institute find that over 365,000 teachers are not fully certified for their teaching assignments, and at least 41,920 teaching positions remain unfilled (Tan et al., 2024). On the other hand, Nguyen and colleagues (2024) offer slightly more conservative estimates that at least 288,000 positions are filled by underqualified teachers and at least 39,700 positions remain vacant. While estimates vary slightly, researchers agree that teacher shortages are a pressing issue in need of remedy.

Teacher shortages come at significant costs, particularly for those schools serving the least advantaged students (Carver-Thomas et al., 2020). Urban districts spend, on average, over $20,000 on each new hire to support their recruitment, hiring, training, etc. (Barnes et al., 2007). Teacher turnover also creates instability in schools and harms student achievement (Ronfeldt et al., 2013). As such, systematically addressing the problems faced by the teaching profession requires better understanding patterns in teacher retention and attrition.

Teaching is a local profession. As many have noted, there is not a singular teacher labor market, but rather many localized teacher markets (Edwards et al., 2024; National Academies of Sciences, Engineering, and Medicine, 2020). Policies related to teacher preparation, certification, and licensure vary tremendously across states and instructional policies vary by districts (Boyd et al., 2008). The infrastructure which supports teacher education across states—e.g., "relative enrollments in public and private colleges, the prevalence of 2-year colleges, articulation agreements, and reliance on traditional versus alternative routes of teacher preparation and licensure"—also varies tremendously (Goldhaber et al., 2023a, p. 13).

Further, teachers predominantly work close to the areas where they grew up and/or went to college (Blaushild et al., 2023; Boyd et al., 2005; Edwards & Kraft, 2024), suggesting that teachers' localized preferences will continue to shape the supply of new teachers into the profession. Understanding challenges to teacher labor markets must take the localized nature of the profession into account. A challenge to studying the diverse landscape of teacher labor markets, however, is that states are inconsistent in which data they collect related to teacher shortages, and there is insufficient federal data on shortages (Nguyen et al., 2024).

There are persistent teacher shortages, which are localized in nature. Particularly in the wake of the COVID-19 pandemic, public concern over teacher shortages has grown. However, teacher shortages vary significantly based on locale, subject-area, and grade-level (Edwards et al., 2024). Teacher shortages are most concentrated within districts that serve a greater proportion of low-income students, students of color, and English learners (Duncan, 2022; Learning Policy Institute, 2017) and in rural districts (Ingersoll & Tran, 2023). In turn, these same students are more likely to be taught by inexperienced teachers (Goldhaber et al., 2015b; Lankford et al., 2002). Additionally, teacher shortages in STEM subject areas (Goldhaber et al., 2015a; Ingersoll & Perda, 2010) and in special education (Billingsley & McLesky, 2004), are typically larger than shortages in other subject areas. This localized nature of teacher labor markets suggests a need for more localized solutions to the challenges faced by the teaching profession. More uniform state and federal policy mandates may be ineffective given the localized variation in the workforce (Kraft, 2024).

Teacher working conditions, such as school leadership, play a crucial role in shaping teacher retention. The majority of teacher turnover is driven by teachers leaving voluntarily, rather than driven by retirement (Ingersoll, 2001; Podolsky et al., 2016). Research suggests that teachers cite poor working conditions as a major factor in their decisions (Simon & Johnson, 2015). In addition to low pay and lack of respect for teachers' work, teachers in the US teach the greatest number of hours and have the least time for preparing for classes compared to other high-achieving OECD countries (Organization for Economic Cooperation and Development, 2024).

Key factors influencing teacher retention include the degree of autonomy teachers experience (Ingersoll, 2001; Ingersoll & May, 2012), the pay and prestige of their work (Johnson & Birkeland, 2003), and the performance level of the school (West & Chingos, 2009). Teacher turnover is notably 50% higher in Title I schools and 70% higher for teachers in schools serving the largest concentrations of students of color (Carver-Thomas & Darling-Hammond, 2017), further exacerbating the negative impact of turnover on our society's most vulnerable students. Teachers' sense of professional community is also critical, particularly in supporting teachers of color. The racial isolation many Black teachers experience in their schools contributes to their departure from the profession (Bristol, 2023; Xu et al., 2024). School leadership can be a critical lever for improving many of the underlying school conditions that drive turnover (Carver-Thomas & Darling-Hammond, 2017; Scallon et al., 2023).

There are also patterns in teacher retention and attrition based on teachers' pathways into the profession. A wide body of existing scholarship suggests that the pathways through which teachers enter the profession are associated with how long they stay in the profession. For example, research has documented that some features of teachers' pathways into the profession matter to their retention as well. For example, research has consistently documented that the duration of student teaching experiences is positively associated with teacher retention (Henke et al., 2000; Ingersoll et al., 2014; Ronfeldt, 2014; Ronfeldt, 2021; Ronfeldt & Reininger, 2012). Recent findings suggest that teachers who are trained through for-profit programs, which are largely marketed to career-switchers, report higher levels of retention (Edwards & Magill, 2024).

An important caveat to these findings is that differences in teacher retention by pathway may be partially driven by demographic differences in the types of teachers who are more likely to pursue a given pathway into teaching. Research has found that career-switchers (i.e., those who pursue a career in teaching after another career) are more likely to stay in the profession longer (Borman & Dowling, 2008; Murnane et al., 1991; Grissmer, 2000). Some evidence also suggests that career-switchers are less effective at teaching math than other teachers in their first year of teaching (Boyd et al., 2011). More research is needed on the relationship between pathways into teacher education and teacher retention, controlling for teacher demographics.

Broader social and political factors, such as the high financial and social costs to become a teacher, also shape teacher recruitment and retention. K-12 teachers earn considerably less than other college-educated workers, and this gap has grown significantly over the past several decades. As of 2022, teachers earn 73.6 cents for every dollar other college-educated professionals make, on average (Allegretto, 2023). A wide evidence base suggests that increasing teacher compensation has the power to reduce teacher turnover (Bueno & Sass, 2018; Candelaria et al., 2024; Clotfelter et al., 2008; Guarino et al., 2006; Theobald et al., 2023). PDK's annual 2024 poll reveals that the majority of Americans would not support their own child becoming a teacher, citing the inadequate pay and benefits as the leading reason (Phi Delta Kappan International, 2024).

It is, therefore, unsurprising that high-achieving college-aged students in the US can be actively socialized out of becoming K-12 teachers, given the public perception that teaching is low-status work (Mancenido, 2021). In this way, the historically low public perception of the teaching profession (Kraft & Lyon, 2024) exacerbates teacher recruitment issues.

As the field works towards building and sustaining a high-quality, diverse teacher workforce, teachers' work is under increasing political attack and the site of intense political fear-mongering (López et al., 2021). More than a dozen states have introduced "Don't Say Gay" legislation, which prohibits teachers from discussing gender identity and/or sexual orientation in the classroom (Jones & Franklin, 2022), and 247 local, state, and federal government entities across the US have introduced 861 anti-Critical Race Theory (CRT) policies (CRT Forward, n.d.). These restrictions have empowered local communities to launch vitriolic attacks on local school boards and teachers, with conservative advocacy groups calling for the community to "catch" teachers in violation of these new laws (Graham, 2021). In recent months, these political attacks have reached new heights, with executive orders to ban diversity, equity, and inclusion (DEI) in both higher education institutions and K-12 schools, and calls for local community members to individually report teachers who deviate from these orders. Further, new orders from the Department of Justice call to target teachers who support transgender and non-binary students, and the growing fears of immigration raids are instilling fear in many students and their families over sending their children to school. Though these political attacks have gained new vitriol in the last several months, they represent the result of broader efforts to undermine public education over the past several decades.

These growing political attacks on the teaching profession in recent years have further exacerbated these challenges to recruitment and retention. As a result of the growing restrictions over teachers' work, two-thirds of K-12 teachers report they have limited the social and political topics they discuss in their classrooms, often because they are unsure if their school or district leaders will support them if parents express concerns over their teaching (Woo et al., 2024). Such policies negatively impact the racial climate in K-12 schools and may be disproportionately pushing out the teachers most committed to equity and inclusion (Jayakumar & Kohli, 2023) and teachers of color (Woo et al., 2023). The full impacts of the newest federal and state political attacks on public schooling have yet to be fully seen, but will certainly intensify these impacts. These intersecting social, financial, and political challenges create a complex landscape for teacher recruitment and retention, where both economic disincentives and the heightened scrutiny of the profession converge to further deter prospective educators from entering and staying in the field.

PERENNIAL CHALLENGES IN TEACHING AND TEACHER EDUCATION & POTENTIAL SOLUTIONS

While some of the particular challenges faced by the teaching profession today are new, the perennial challenges underlying them are not. The US has experienced various waves of teacher shortages since at least the 1930's (Darling-Hammond & Podolsky, 2019). And, during periods of social and political upheaval, K-12 teachers are often the first to become scapegoats for larger political and ideological conflicts (Goldstein, 2015). In this way, one can map many of the current challenges faced by the teaching profession back to deeper perennial challenges which the field has been grappling with for decades, if not longer. As we think about potential solutions to the present challenges facing the teaching profession, it is therefore critical to situate how the present challenges reflect deeper, enduring patterns in the field, and to learn from history.

In 1990, Zeichner and Liston cautioned: "One of the most notable characteristics of the current reform movement in U.S. teacher education is its lack of historical consciousness" (p. 3). Over three decades later, the field arguably faces the same challenge. Heeding this warning, the following section aims to explore these deeper, perennial challenges in teaching and teacher education, and propose potential solutions. We acknowledge prior reform efforts addressing these same challenges and consider the viability of these solutions in the current political climate. Recognizing the wide variation in state infrastructure and the localized nature of the teaching profession, we present a range of potential levers that states and districts might pursue, depending on their political context and available resources. As history suggests, transforming the teaching profession is both a technical and a political challenge (Berry & Shields, 2017). As such, the success of any of these reforms hinges on our ability to build robust coalitions which will champion this work and sustain a coherent vision of reform over time.

Importantly, over the course of developing this landscape analysis, the federal policy landscape has shifted rapidly. With the potential cuts to the funding of the U.S. Department of Education's Teacher Training grants, National Institutes of Health (NIH), National Science Foundation (NSF), Institute of Education Sciences (IES), and K-12school funding, and the potential dissolution of the National Center for Education Statistics (NCES), many of the policies and programs described in this report are likely to be affected. While we do not know what their future will hold, as many of these decisions face challenges in the courts, it is clear that the field of teaching and teacher education will continue to face political and financial challenges in implementing many of the promising programs and policies we highlight in this report. We have included all potential programs we had initially identified as potential levers to support the teaching profession because we are hopeful that these will continue to be levers in the long-term. As we discuss in more detail in our implications, we see foundations and philanthropies as playing a critical role in the short-term, potentially serving as a stop-gap to fill in the needs emerging from these abrupt funding cuts.

Perennial Challenge 1: Championing Quality and Access in Teacher Education

Historically, when states and districts in the US experience teacher shortages, the field has responded by opening the gates into the profession, reducing barriers to entry in order to quickly fill teacher vacancies (Sutcher et al., 2016). However, by focusing on shorter-term fixes to the teacher workforce, this approach misdiagnoses the underlying causes of teacher shortages (Ingersoll, 2003), and risks undercutting the quality of the preparation and support that new teachers receive. Historically, this has resulted in teachers entering teaching through emergency teaching certificates or highly accelerated pathways, which may not prepare them well to stay in the profession long-term, further contributing to teacher turnover. In this way, investing in high-quality teacher education pathways which foster multiple entry-points into the teaching profession not only addresses immediate staffing needs but also builds a more stable, effective, and resilient teaching workforce, ultimately leading to improved educational outcomes for students. In this section, we survey promising existing models which balance quality and accessibility and have been successful in a range of district and state policy contexts.

Recruitment into the K-12 teaching profession starts early. Interest in the teaching profession among high school seniors has declined nearly 50 percent since the 1990s, reaching an all-time low (Kraft & Lyon, 2024). Given that the majority of public school teachers today earn their credentials through an undergraduate degree in education, high school students' interest in the profession may have significant implications for the strength of the teacher pipeline. Additionally, we know that the racial and ethnic disparities which shape the diversity of the teaching profession start early; the potential pool of Black and Latinx teachers, in particular, dwindles across each stage of the education system, starting in K-12 (Carver-Thomas, 2018). For these reasons, policy solutions focused on teacher recruitment must also start early (Blazar et al., 2024b).

One powerful lever to recruit a diverse and high-quality teacher workforce are **Grow-Your-Own (GYO) programs**. Although there is wide variation in what these programs look like in practice (Edwards & Kraft, 2024), these programs are generally committed to recruiting teachers locally, from the community (Gist et al., 2019). To that end, GYO programs can be structured to tap into diverse labor pools within school communities, including middle and high school students, paraprofessionals, the broader community (e.g., community activists and parent mentors), and existing college students (Edwards & Kraft, 2024; Gist et al., 2019).

GYO programs focused on recruiting middle and high school students often operate through **Career Technical Education (CTE) courses** and/or **teaching academies** in order to provide early exposure and incentives for diverse high school students to see themselves in the profession (Partnership for the Future of Learning, 2021). These programs expose high school students to careers in teaching, often through field-based experiences, to help them better understand both the value of being a teacher and what the career looks like in practice. Though the evidence base on the effectiveness of such programs is still relatively nascent (Edwards & Kraft, 2024; Gist et al., 2019), there are several evaluations of specific programs that suggest positive evidence. For example, a recent study of the **Teacher Academy of Maryland CTE certificate program** found that participating students (especially White and Black girls) were more likely to become teachers, and there were positive effects on long-term wages, especially for Black girls (Blazar et al., 2024a).

There are a number of models of state-level and national approaches for early recruitment into the profession, which have grown in prominence in the field over recent years across diverse district and state contexts:

- One of the oldest models of this approach is **South Carolina's Teacher Cadet program**. Initially piloted in 1986, the program has since expanded to include nearly 190 sites in South Carolina (Furman University, n.d.). The program is designed to introduce high-achieving high school students to careers in teaching through a college-level, dual credit course focused on exposing them to careers in teaching through field-based experiences (Berry et al., 1988). The curriculum is aligned with standards from professional associations, such as the National Board for Professional Teaching Standards (Partnership for the Future of Learning, 2021). A program evaluation of the Teacher Cadet Program conducted by the Center for Educator Recruitment, Retention, and Advancement (CERRA) found that the program costs about $150 per student and 20% of the 62,650 students who have participated in the program has gone on to earn a teacher certification (Center for Educator Recruitment, Retention, and Advancement, n.d.).

- PDK International's **Educators Rising** is another early recruitment model. Educators Rising is organized around local chapters at high schools which feed into teacher education programs. The program offers a curriculum structured to prepare students for careers in teaching, as well as national competitions and conferences, to help foster a broader community of students interested in careers in teaching. The field lacks robust independent studies on the program's effectiveness; however, Educators Rising's own research suggests promising potential: the majority of study members identify as students of color, and graduates of the program are 400% more likely to stay committed to a career in teaching than to enter another field (Educators Rising, n.d.). Additional independent research such pathways would help validate these findings.

- The **Center for Black Educator Development (CBED)** has been tackling the issue of early teacher recruitment, with a focus on attracting more Black teachers to work in the Philadelphia school system. As of 2020, the School District of Philadelphia reported 1,200 *fewer* Black teachers than they did in 2000. In response to the local and national decline in Black teachers, CBED was launched in June 2019 to rebuild the national Black teacher pipeline. To that end, CBED organizes: (1) a *Teaching Academy*: a year-long CTE course for Black students interested in teaching, and (2) *Freedom Schools Literacy Academy*: a 4-week summer intensive program offered for college- and high-school students to become educator-activists. To financially support students' participation in both of these pathways, CBED developed the *Black Teacher Pipeline Fellowship*, which offers up to $5,000 annually for four years and up to $20,000 in stipend at the start of participants' fifth year of teaching (Center for Black Educator Development, n.d.). Early evidence from the Teaching Academy suggests that participation in the program is associated with increased interest in teaching and in attending college/university (Center for Black Educator Development, 2023). As with Educators Rising, these findings might be made more robust through additional independent studies on this approach.

K-12 districts can invest in diverse recruitment strategies in order to tap into existing talent within their school system. There are a number of emerging pathways for recruiting a high-quality and diverse workforce that pulls from the existing expertise in school communities. In addition to recruiting middle and high-school students, GYO programs can also be a powerful resource for tapping into existing talents among adults already connected to school districts, such as **paraprofessionals**. Paraprofessionals are among the fastest-growing category of public-school employees and they are significantly more racially and ethnically diverse than K-12 teachers (Camp et al., 2024). Many individuals end up as paraprofessionals after initially pursuing routes into being full-time K-12 teachers, but are deterred from becoming teachers by barriers such as the lack of a bachelor's degree or certification exams (Gist et al., 2019). There is significant potential in providing pathways for paraprofessionals to become teachers, and such pathways have expanded to at least 21 states to date (Will, 2023).

Given that paraeducators report higher retention than K-12 teachers on average, the field should prioritize high-retention, high-quality pathways which help retain paraprofessionals in schools (Theobald et al., 2023). A number of states are pursuing such models that suggest potential promise. To our knowledge, two studies have empirically examined the effectiveness of state paraeducator-to-teacher pathways:

- In 2019, **Mississippi** launched a three-year pilot in which district leaders and school districts nominated promising staff and paraeducators for an **alternative performance-based licensure (PBL) program**. Candidates for the program all held Bachelor's degrees, had classroom experience as long-term substitutes, and had completed all of the requirements for becoming a teacher in Arkansas, except that they had not passed the traditional licensure exam (Laski, 2024). In lieu of the licensure exam, these pilot candidates were offered performance-based measures of candidates' readiness to teach (Barnum, 2024). An evaluation of the program reveals that these teachers perform just as well as traditionally licensed teachers, and out-perform their peers in math (Laski, 2024).

- **Arkansas** has similarly introduced GYO programs focused on creating pathways for paraeducators to become teachers. A recent study on the effectiveness of these programs similarly finds that paraeducators are similarly effective to teachers without paraeducator experience. Importantly, despite the fact that the paraeducator workforce is more diverse than the K-12 teacher workforce, White paraeducators are twice as likely to transition into teaching than their Black and Hispanic peers (Camp et al., 2024). As such, recruitment efforts for paraeducators must be highly targeted if they are going to be successful as a lever for diversifying the teacher workforce.

Another lever for supporting the recruitment, preparation, and retention of teachers in hard-to-staff schools and in high-needs subject areas are **teacher residencies**. Modeled after a medical residency model, these programs ground teacher preparation in the field, and emphasize providing new teachers with authentic, field-based learning experiences, guided by mentor teachers (Guha et al, 2019). Such programs are typically developed through a sustained partnership between institutes of higher education (IHE), local districts, and teachers unions, so that programs can be focused on addressing the specific needs of the district (Guha et al., 2019). The evidence base on the effectiveness of teacher residencies is relatively nascent. Research on the Boston Teacher Residency finds that the residency is positively associated with student achievement, but the gains are only modest in the long-run (Papay et al., 2012).

Like GYO programs, teacher residencies vary tremendously in how they are structured, and there are not consistent definitions of what constitutes a "teacher residency" in the field. In the absence of such consistency, there is evidence that teacher residencies may be becoming less distinct as a model and more closely resembling other pathways (Truwit et al., 2024). There have, however, been field-level efforts to develop a consistent definition for teacher residencies (Pathways Alliance, 2022), so the field should continue to work towards greater alignment in the design principles of teacher residencies, and engage in research to better understand the effects of these programs.

National Center for Teacher Residencies' Black Educators Initiative: Teacher Residencies as a Lever for Diversifying the Profession

The National Center for Teacher Residencies (NCTR) has been a leading organization in the expansion of high-quality teacher residencies in the US. NCTR oversees a network of 77 member programs, and organizes a Residency Design Academy (RDA) to design and prepare to launch new residencies. Central to NCTR's vision is a commitment to ensuring that "students of color and students from historically unsupported communities have equitable access to effective, diverse, and culturally responsive educators" (National Center for Teacher Residencies, n.d.). This commitment is reflected in the teachers NCTR helps bring into the profession: whereas only 21% of new teachers are people of color, 67% of teacher residents involved in NCTR's network identify as a person of color (National Center for Teacher Residencies, n.d.).

Central to NCTR's efforts to diversify the teaching profession is the **Black Educators Initiative (BEI)**. Launched in 2019 with a five-year, $20-million grant from the Ballmer Group, BEI was created with the goal of recruiting, preparing, and retaining 750 new Black educators (Eubanks et al., 2024). To that end, the program offers targeted financial support (e.g., scholarships, stipends, direct financial assistance, emergency funds), which support prospective Black educators' enrollment in high-quality teacher residencies.

BEI has already exceeded its goal. As of 2023, BEI has supported 29 teacher residency programs in 18 states in enrolling 978 new Black educators. An evaluation of BEI suggests that each additional $10,000 invested in stipends to support teacher residents in BEI is associated with a 4% increase in the share of Black teacher residents (Shand et al., 2023). As one NCTR administrator reflected on the role of BEI's financial support: "I cannot say enough about how amazing those emergency funds are and what $250 can do for someone who is on the verge of having their lights cut off. That money saves them from mental stress and trauma" (Scheib, 2022).

To fund teacher residencies, the field must explore ways to ensure that these pathways are affordable and sustainable. Though these pathways offer a promising potential lever to recruit and retain a more diverse teacher workforce, the financial sustainability of programs like teacher residencies is one of the biggest challenges to their implementation (Hirschboeck et al., 2022). The financial support offered by teacher residencies is a central draw for teacher candidates pursuing such pathways, particularly those who would otherwise not be able to afford to enroll in a teacher education pathway, but they can be expensive to sustain.

To support programs in building sustainable funding models, **Prepared to Teach**, an organization launched out of Bank Street College, has been working to support residency partnerships in developing sustainable funding models for yearlong paid residencies. Through Prepared to Teach's history of work with residencies, they have identified three design principles to help build more sustainable residencies: *reallocate* resources and roles, *reduce* costs, and *reinvest* savings from reduced turnover. Teacher residencies can tap into a diverse set of potential funding sources to that end (Table 1). As previously mentioned, the landscape of federal funding to support education has shifted rapidly over the past several months and not all of the potential funding sources we document below may be available currently. We still report these opportunities to support residencies through federal funds because we see the federal government as playing an important role in supporting the work of teacher preparation, and we hope that these funding opportunities may be available in the future.

Table 1. Summary of Diverse Funding Sources for Residencies

Source	Potential Contributions
District and School	• Recruitment funds • Staffing lines • School improvement dollars • Professional development and teacher leadership dollars • Local Control Funding Formula dollars
University	• Tuition reduction and scholarships • Work-study dollars • Open educational resources
Philanthropy	• Startup funding • Capacity building
Union	• Professional development dollars • Partnerships for national grant dollars

Table 1. Summary of Diverse Funding Sources for Residencies (continued)

Source	Potential Contributions
Voter Support	• State and local tax dollars
State	• State teacher loan forgiveness and tuition assistance programs • State teacher residency grants
Philanthropy	• Teacher loan forgiveness and scholarship programs • Federal teacher preparation grants (Title II of the Higher Education Act [HEA]) • Federal grants to Historically Black Colleges and Universities and Minority Serving Institutions of Higher Education (Titles III and V of the HEA) • The August F. Hawkins Center of Excellence Program (Title II of the HEA, if funded) • Federal work-study (Title IV of the HEA) • ESSA Title I and Title II dollars • Apprenticeships or vocational subsidies

Source: Yun & DeMoss (2020)

For example, both teacher residencies and GYO programs can additionally be transitioned into federally-recognized **Registered Teacher Apprenticeship Models (RTAPs)** in order to tap into additional federal and state funding sources (Slanda & Lachlan-Haché, 2023). An approach approved and validated by the U.S. Department of Labor, Registered Apprenticeships more broadly are defined as:

> *an industry-driven, high-quality career pathway where employers can develop and prepare their future workforce, and individuals can obtain paid work experience with a mentor, receive progressive wage increases, classroom instruction, and a portable, nationally-recognized credential. (U.S. Department of Labor, n.d.)*

As one form of Registered Apprenticeships, RTAPs have been expanding nationally as a potential lever to address teacher shortages (Merod, 2023; U.S. Department of Labor, n.d.), and operate in 31 states and territories as of 2023 (Melnick, 2024). RTAPs offer a paid pathway into the teaching profession, and programs with the federal RTAP designation can qualify for specific state- and federal-level funds to support their operations (Melnick, 2024). RTAPs are relatively nascent as a program type; the first program emerged in **Tennessee** in 2020 as an outgrowth of an existing teacher residency program.

The Tennessee model requires new teacher apprentices begin working as teacher apprentices under the supervision of a mentor teacher for at least a full year. Apprentices earn a full salary working as a paraprofessional while they complete their training, and can potentially qualify for full benefits under this model. As apprentices demonstrate their effectiveness, they qualify for higher levels of compensation (Melnick, 2024). Apprentices are expected to take a minimum of 120 hours of coursework, and have the opportunity to take courses at community colleges, or in undergraduate or graduate-level tracks within educator preparation programs—depending on their previous education (Melnick, 2024). In this way, RTAPs can build upon the infrastructure in community colleges to offer lower-cost entry points into the profession.

Community colleges are also an existing infrastructure that may be leveraged to increase the pipeline of teachers, especially for teachers of color. Though the evidence base on community colleges is relatively limited (e.g., Bragg 2009; Floyd & Arnauld, 2007; Monto, 2021), a 2003 review of the field found that there are four approaches community colleges can take to expand their role in teacher education:

1. An *articulation model*, wherein community colleges develop articulation agreements to support transfer to 4-year colleges
2. A *university center model*, wherein community colleges and 4-year colleges collaborate to provide 4-year teacher education pathways on the community college campus
3. A *certification model*, wherein community colleges collaborate with schools and 4-year programs to support teacher certification
4. A *community college baccalaureate model*, wherein community colleges are approved to confer baccalaureate degrees (Floyd & Walker, 2003).

Although the articulation model is the most common approach to supporting teacher education (Floyd & Walker, 2003), a persistent dilemma for community college pathways more broadly is that transfer agreements can be bureaucratically cumbersome and challenging to navigate (Baker et al., 2023). Future scholarship should examine promising community college pathways for diversifying the teacher workforce in ways that mitigate such bureaucratic barriers for teacher candidates.

To make high-quality pathways more accessible, prospective teachers need financial support to enter the profession. One of the biggest barriers to recruiting new teachers into the profession, and particularly teachers of color, is the high financial costs of becoming a teacher. More than half of all teachers rely on student loans in order to pursue their college degrees (Hershcopf et al., 2021). Given persistent intergenerational wealth gaps and deeply rooted patterns of racial inequality, Black teachers are disproportionately impacted by the financial costs of becoming a teacher (Weller & Roberts, 2021). Beginning teachers and special education teachers are also disproportionately more likely to accrue student debt (García et al., 2023). The financial costs to become a teacher are associated with increased stress for teachers.

The majority (60%) of teachers who have student loans report feeling highly or very stressed about them, and over 60% of teachers report having had to work multiple jobs due to their student loans (García et al., 2023).

Fortunately, there is strong evidence that financial incentives, such as loan forgiveness and service scholarships, are effective in both recruiting and retaining teachers (Bueno & Sass, 2018; Candelaria et al., 2024; Clotfelter et al., 2008; Guarino et al., 2006; Theobald et al., 2023). To date, at least 40 states offer some form of service scholarship program or loan forgiveness for teachers (Feng & Sass, 2018). As is described further in the following section, these financial incentives to support recruitment are part of a much larger suite of potential levers of teacher compensation. The following financial supports are some of the primary levers which are targeted to support teacher *recruitment* more specifically, but they also support teachers' retention in the profession:

→ Service Scholarships. Service scholarships vary in how they are structured in practice, but generally focus on offering prospective teachers with financial support if they commit to serving as a teacher for a minimum amount in a particular district and/or subject area. Service scholarships have been documented to recruit and retain individuals with higher academic credentials into the profession, particularly into schools with a high proportion of students from low-income families (Henry et al., 2012). Such service scholarships are often targeted to fill specific high-needs subject areas and districts, but can also be designed to build a more robust statewide teacher labor market more broadly:

- The **National Science Foundations' Robert Noyce Teacher Scholarship** provides scholarships to teachers committed to teaching at least two years in the high-needs subject areas of STEM. Similarly, the **Woodrow Wilson Teaching Fellowship** has historically been committed to recruiting math and science teachers for high-needs schools through financial incentives. Such programs couple financial support with professional development for new teachers, and also positively support new teachers' preparation (Porter et al., 2022).

- The federal **Teacher Education Assistant for College and Higher Education (TEACH Grant)** provides service scholarship of up to $4,000 annually, for up to 4 years, to undergraduate and graduate students who are preparing for careers in teaching and are committed to teach for four years in "a high-need field at a low-income school or educational service agency" (Federal Student Aid, n.d.a). As with any policy, the policy design and implementation of financial incentives significantly shapes their promise. A study led by the U.S. Government Accountability Office (GAO) found that one-third of TEACH grant receipts from 2013 through 2015 did not fulfill their grant requirements, and instead converted their grants into unsubsidized federal loans (Nowicki, 2015). The field has accordingly called for reforming this loan conversion policy (Darling-Hammond et al., 2023) and helping support grantees fulfill their service requirements through robust retention efforts (Sparks, 2024).

- As part of the national rise of *college promise programs* (Perna & Leigh, 2018), states can also invest in state-level promise programs which cover the cost of undergraduate degrees in education to build their statewide teacher workforce. One such model is the **University of Wisconsin-Madison's School of Education Wisconsin Teacher Pledge Program**. Launched in fall 2020, the program is an ambitious statewide investment designed to recruit diverse and high-quality candidates to enroll in UW-Madison's teacher education programs and commit to teaching in Wisconsin schools. The program covers tuition, fees, testing, and licensing costs for all teacher education students who take the "pledge" to teach for three or four school years in a Wisconsin PK-12 school. As of 2024, the program had been supported by $33.3 million in private donations (University of Wisconsin-Madison School of Education, 2023). Thus far, 772 teachers have taken the pledge, and 354 alumni are teaching in Wisconsin schools (Hess, 2024). There is current research underway to study the effectiveness and implementation of UW-Madison's Teacher Pledge Program. Given the relative nascency of the program, it is important to learn from this research to understand the effects of such programs, particularly to understand the longer-term patterns in teacher retention.

→Loan Forgiveness. Another lever to reduce the financial barrier to teachers entering the profession is through loan forgiveness. The federal **Teacher Loan Forgiveness (TLF)** and **Public Service Loan Forgiveness (PSLF)** programs offer two potential policy levers for teacher loan forgiveness. TLF offers up to $17,500 in loan forgiveness for teachers who teach full time for five consecutive years in a low-income school or educational service agency (Federal Student Aid, n.d.b). PSLF, on the other hand, does not require working in a low-income public school. Rather, it requires that teachers work for a qualifying employer, including: "government organizations at any level (U.S. federal, state, local, or tribal), not-for-profit organizations that are tax-exempt under Section 501(c)(3) of the Internal Revenue Code, or other not-for-profit organizations that provide certain types of qualifying public services" (U.S. Department of Education, n.d.).

As with TEACH grants, the program complexity and administrative barriers of the federal Teacher Loan Forgiveness (TLF) program inhibited its effectiveness (Jacob et al., 2024). Additionally, the current structure of TLF and PSLF requires teachers to pay monthly payments, before they have completed their service requirements, which can be costly for new teachers at the start of their career (DiNapoli, 2022). Ensuring that loan forgiveness and service scholarship programs are successful may hinge on whether they are easy to navigate bureaucratically (Podolsky & Kini, 2016).

To diversify the teaching profession, the field can tap into existing infrastructure, such as teacher education programs run by Minority Serving Institutions (MSIs). As the field expands pathways into the profession through routes such as GYO Programs and teacher residencies, there is an opportunity to tap into existing infrastructure to support teacher diversity at MSIs—e.g., Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs) (Fenwick & Akua, 2022). MSIs already play an outsized role in preparing teachers of color (Gasman & Conrad, n.d.). Although the 290 MSIs operating in the US today constitute only 13% of teacher education pathways nationally, they prepare 44% of the nation's teachers of color (Herring, 2024b). Even more strikingly, HBCUs constitute only 3% of colleges and universities, but produce about 50% of the nation's Black teachers (Freeman et al., 2022). Despite declining program completion rates in teacher education pathways generally over the past decade, the completion rate within programs based in MSIs has increased by 5.5%, on average, nationally (Herring, 2024a). Within this space, there is growing attention in the field to both program- and field-level efforts to support teacher preparation in MSIs:

- Given the shared focus on recruiting a diverse teacher workforce from the local community, GYO programs can tap into the existing infrastructure at MSIs. As just one example, the **Call Me MiSTER (CMM)** GYO program hosted at Clemson University started in 2000 as a partnership with three HBCUs, and has since expanded to 25 colleges in South Carolina and 9 additional colleges across other states (Jones et al., 2019; Partnership for the Future of Learning, 2021). CMM offers tuition assistance (through loan forgiveness), an academic support system, a cohort model, and assistance with job placement (Clemson University, n.d.). Since the first cohort graduated in 2004, the program has supported over 200 Black men in becoming credentialed to teach in South Carolina.

- To help build the field-level infrastructure to support MSIs around diversifying the teaching profession, the **Branch Alliance for Educator Diversity (BranchED)** has supported a network of 157 teacher education programs in MSIs. BranchED offers resources and coaching to its network members, as well as a broader community to teacher educators working within teacher education programs in MSIs. They also support programs' use of data and assessments, so that programs are able to be action-oriented.

Perennial Challenge 2: Retaining and supporting a diverse, high-quality teacher workforce

While the pathways into teaching significantly influence who enters the profession, the working conditions teachers encounter on the job significantly shape their retention and opportunities for professional growth (Bristol, 2023; Carver-Thomas & Darling-Hammond, 2017; Ingersoll, 2001; Podolsky et al., 2016; Simon & Johnson, 2015). However, the norms of the US education system, which are rooted in the outdated factory model of schooling (Darling-Hammond et al., 2023), perpetuate the "egg-crate" model of teacher work (Lortie, 1975), which isolates teachers from one another and limits opportunities for professional collaboration. This sense of professional isolation is compounded for teachers of color, and particularly Black teachers, whose frequent racial isolation in their schools contributes to their departure from the profession (Bristol, 2023; Xu et al., 2024).

And yet, despite a strong body of evidence highlighting how schools can be restructured to foster greater collaboration and continuous learning among teachers (e.g., Bryk et al., 2015; Johnson, 2020), many educators continue to work in isolation from each other, with limited built-in time for planning and collaboration (Cottingham et al., 2023). Additionally, many schools do not have the resources in place to support such collaboration. For example, over 40% of public schools in the US do not have a single instructional coach (Ng, 2024). Together, these negative working conditions can hinder teachers' professional growth and retention in the profession. Further, to diversify the teaching profession, it is insufficient to simply get more teachers of color into the profession; rather, we must ensure that teachers of color experience humanizing working conditions which support their longevity in the profession (Griffin & Tackie, 2016). In the following section, we explore current promising efforts to address these varied challenges.

To transform the teaching profession, the field must reimagine the nature of teachers' work and the structure of teachers' roles. Teachers' social networks are foundational to their work (Coburn et al., 2013; Daly et al., 2010; Datnow, 2012; Little, 1992). These networks can be powerful levers to drive shifts in teachers' practice (Coburn et al., 2012; Penuel et al., 2012), and drive improvements in student learning (Bryk & Schneider, 2002; Daly et al., 2014). Recent evidence from Tennessee finds that, when low- and high-performing teachers were paired to work together on improving the low-performers skills, there were significant shifts in the lower-performing teachers' job performance (Papay et al., 2020). Learning through such peer networks can take place through formal structures, such as professional development; however, it also frequently occurs through informal and unstructured moments as well (Bristol & Shirell, 2019; Johnson & The Project of the Next Generation of Teachers, 2004; Kaul et al., 2019). Professional networks can also be a powerful protective factor for teachers of color who face racial isolation in their schools and districts—supporting their retention and well-being in the profession (Bristol, 2023).

To support teachers' sense of professional community both within and across schools, local and national **professional networks** for teachers can be a powerful lever for elevating the professional work of teaching (Grossman, 2020). Such networks should target the areas in which teachers need support. For secondary teachers, content-area focused networks such as the **National Writing Project** can be a promising lever for both building community and developing their practice (Kaplan, 2008). In addition to content-area networks, racial affinity networks, such as the **Black Teacher Project**, can be a powerful lever for both combating the racial isolation and supporting the retention of Black teachers (Mosely, 2018; Stovall & Mosely, 2022). By embedding professional learning opportunities within rich professional networks, these approaches may help provide the structures to support the sustainability and persistence of teachers in the profession. In this way, such professional networks can be a powerful lever to transform the profession from the ground up, centering teachers in the work of systems change.

To create more opportunities for teacher collaboration within schools and mitigate professional isolations between teachers (Johnson et al., 2018), schools and districts can restructure teachers' roles through innovative **team teaching models**. Also referred to as a **"strategic school staffing"** approach (National Council on Teacher Quality, n.d.), such models bring together a team of educators—e.g., teachers, paraprofessionals, mentor teachers, teacher residents, and coaches—to work alongside each other to educate a larger group of students (Aldeman, 2024). By intentionally positioning highly experienced teachers as experts and leaders in their schools, such models can be an approach for "extending the reach" of our system's most experienced educators, while providing structures for less experienced teachers to learn from them (Hassel & Hassel 2009).

Team teaching models can therefore be a tool to leverage broader pools of talent from within schools and can be structured to provide lead teachers with additional compensation for the added responsibilities they take on (National Council on Teacher Quality, n.d.). Given the emerging evidence base documenting the effectiveness of tutors (e.g., Cortes et al., 2024; Kraft et al., 2024a; Kraft et al., 2024b; White et al., 2023), districts can also strategically leverage tutors to fill gaps within a team teaching model. Importantly, such models must be bolstered by supportive school leaders who value teacher collaboration (Cottingham et al., 2023).

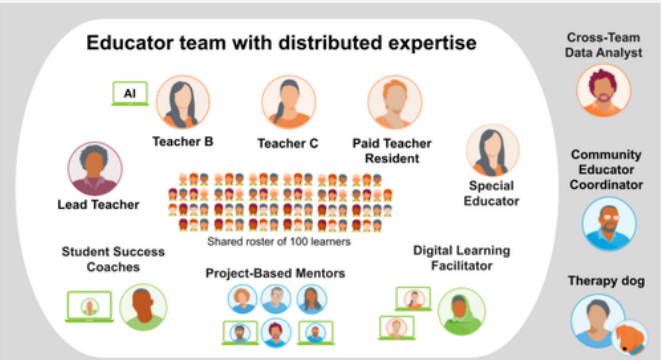
Shifting towards team-based staffing models: The Case of the Next Education Workforce

In most schools today, teachers frequently work in isolation from one another. Each teacher is responsible for their own classroom of students throughout the school day and, if teachers hope to collaborate with their peers, they are typically left to do so outside of their class time. Shifting this traditional model on its head, Arizona State University Mary Lou Fulton Teachers College's model, **Next Education Workforce**, is supporting schools and districts in transitioning to a new model. Instead, teams of 2-6 educators come together to share responsibility for educating 50 to 150 students. A central design feature of the model is that educators hold *differentiated responsibility*, based on their experience level and expertise. The "building blocks" of Next Education Workforce teams include four primary types of educators, which each bring unique expertise:

- "**Educational leaders** include leaders of teams, schools, and systems. Examples include lead teachers, principals, and superintendents. They manage people, processes, and systems.
- **Professional educators** include preservice, novice, experienced, and specialist teachers. They share accountability for students' academic and socioemotional growth.
- **Para-educators** have specific technical skills that complement those of professional educators. Examples include instructional assistants, teaching assistants, and other school employees.
- **Community educators** include volunteers and members of a community whose knowledge and skills complement those of professional educators. They help deepen and personalize student learning by enriching learning environments, forging authentic relationships, sharing professional expertise, and expanding social networks" (Basile & Maddin, 2022).

Leveraging these diverse stakeholders, one could imagine a different type of classroom: an experienced lead teacher coordinates a team of educators (e.g., other teachers, a teacher resident, a special educator, coaches and mentors, and a digital learning facilitator), who each bring diverse skills to the classroom. Together, the team works collectively to educate a larger roster of students, such that more students have access to the diverse skill sets of the teaching team (Figure 6).

Figure 6. Example of Team Teaching Model



Source: Next Education Workforce (n.d.)

Restructuring teachers' roles through team teaching models must be sustained through shifts in policy. For example, current teacher evaluation systems are organized around measures of *individual* performance. If we shift towards a view of expertise as collective and distributed across teams, there is an opportunity to evaluate *collective* performance (Basile & Maddin, 2022). Additionally, team based models can be supported by differentiated pay models, where more experienced educators are compensated for both their expertise and their role as mentors to less experienced educators. The following section explores such models.

To help make teaching into a robust profession, the teaching profession can be built around *professional career trajectories* which embed *mentoring and induction support* for teachers' ongoing learning and development. In order to make teaching a highly-respected and sought-after profession, the field must structure teaching as a life-long profession that has opportunities for career advancement and professional growth. Teaching is often criticized for being a "flat" career; unlike many other fields, there are frequently no opportunities to progress in one's career, without leaving the field of teaching for another line of work (e.g., school or district leadership). Such a system may inadvertently push the systems' most experienced and effective teachers *out* of the classroom.

To combat these dynamics, some districts and states have developed **professional career ladders**, in which teachers have incentives to receive differentiated pay and authority, as they progress into more effective teachers. In these models, as teachers aspire to higher roles, they are eligible to take on additional responsibility based on their demonstration of their skills. As such, building career ladders depends on a shared understanding of how to measure what constitutes effective teaching. Importantly, previous reforms under the name of "professional career ladders" have varied widely in practice in terms of how they restructure teacher roles (Murphy & Hart, 1986). In some cases, teachers are given additional responsibilities, expanding their roles as they develop in their career. In other models, teachers receive additional compensation based on their performance (i.e., "merit pay"), but are not tasked with additional responsibilities. And finally, other models take teachers out of the classroom to promote them to a different role.

While previous models do not always integrate professional development into the professional career ladders, we see this as critical to the implementation of such an approach. Building upon such models, such systems can additionally structure in **job-embedded mentoring and induction support**, which provides teachers with the support to develop into more effective teachers. Access to high-quality mentoring can be a key-level in supporting teacher retention (Ingersoll & Strong, 2011), so there are broader benefits to school systems investing in such an approach. Importantly, the expansion of mentoring and induction programs should be guided by the growing evidence base in this space (e.g., Hong & Matsko, 2019; Kavanagh et al., 2022; Matsko et al., 2020; Ronfeldt et al., 2023).

Professional career ladders have been implemented widely in previous waves of reform across the US. Partially in response to A Nation at Risk, professional career ladder reforms gained popularity in the United States in the 1980s (Labaree, 1989; Malen & Hart, 1987; York-Barr & Duke, 2004). In that decade, 47 states introduced some form of teacher career ladder or merit pay systems; however, all of these reforms had faded by 1990 (Darling- Hammond, 2009). As previously noted, these previous career ladder policies varied widely in their approaches, and thus their shortcomings vary as well. Previous accounts on why these reforms faded point to a range of design and implementation pitfalls, such as poorly designed evaluation systems to measure teacher quality, and policy designs which privileged teachers' individual effectiveness over the organizational effectiveness of schools (Darling-Hammond, 2009). Additionally, though earlier versions of teacher career ladder reforms aimed to professionalize teaching, these reforms have historically created more of a hierarchical "pyramid" of roles, rather than a ladder through which teachers had equitable opportunities for career progression (Labaree, 1989).

The history of these teacher professional career ladder models suggests that we must prioritize models which provide teachers with equitable opportunities to progress within the model, invest in robust professional development and evaluation systems, and be attentive to the many implementation challenges presented by the diverse state policy contexts within which these reforms may be taken up.

More work is needed to continue studying more contemporary approaches of reforming teacher roles. For example, early evaluations of Iowa's Teacher Leadership and Compensation (TLC) system, which was launched in 2014-15, suggests that teachers and leaders hold positive views of the program, but early teacher retention and student achievement data from the first three years of the program do not show positive results (Citkowicz et al., 2017a; Citkowicz et al., 2017b). Therefore, as the field turns to reinvigorate such reform approaches, it is critical that we learn from previous reforms and continue to study the implementation and outcomes of new programs. In particular, we must prioritize models which provide teachers with equitable opportunities to progress within the model, invest in robust professional development and evaluation systems, and be attentive to the many implementation challenges presented by the diverse state policy contexts within which these reforms may be taken up. Given the wide variation in how these models are structured in practice, it is critical that we better understand which design elements of these programs are effective at supporting teacher recruitment and retention, student learning, etc., and which design elements are less productive.

Learning from the Blueprint for Maryland's Future: A Statewide Vision for Elevating the Teaching Profession

Passed in 2021, the Blueprint for Maryland's Future represents a comprehensive state policy approach to transforming a state education system through sustained and robust investments in the teaching profession. This model represents a significant state-level investment, with $3.8 billion additional education funding over a 10-year period (Maryland State Department of Education, n.d.b). The central five pillars of the Blueprint include:

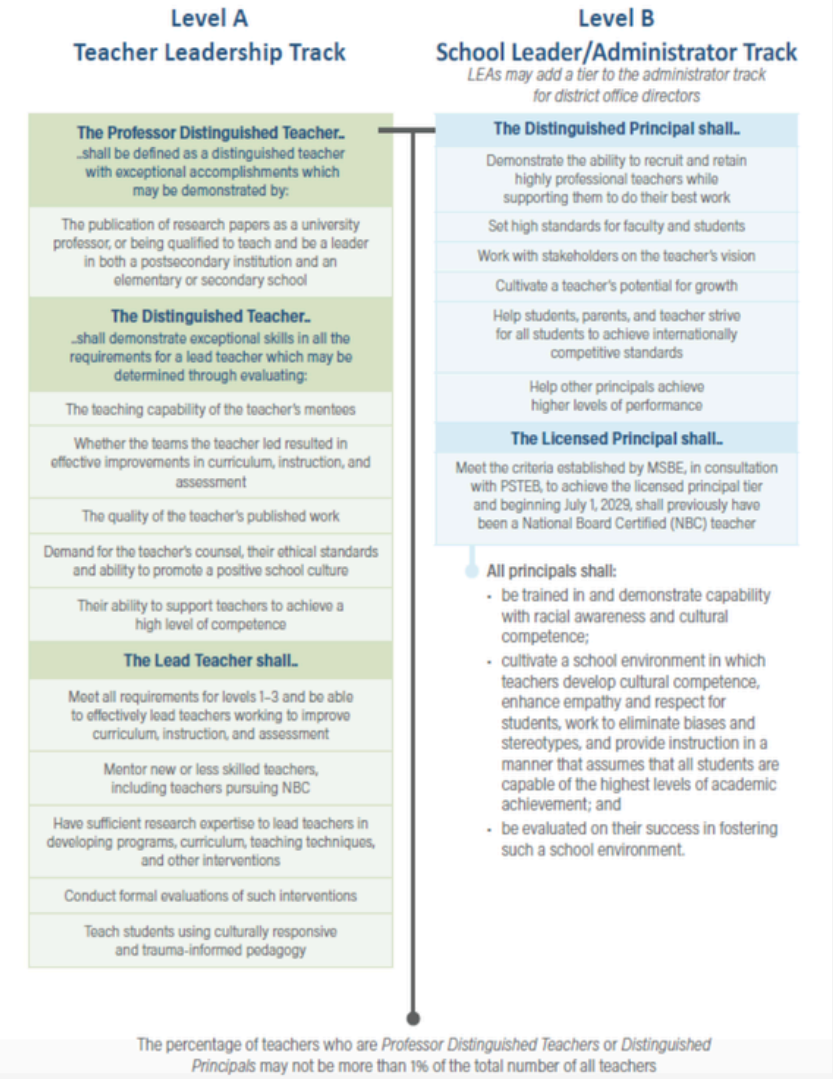
1. Early Childhood Education
2. High-Quality and Diverse Teachers and Leaders
3. College and Career Readiness
4. More Resources to Ensure All Students are Successful
5. Governance and Accountability

The second pillar, *High-Quality and Diverse Teachers and Leaders*, is grounded in the understanding that teachers are the most important school-based factor to students' success (Maryland State Department of Education, n.d.a). To that end, the Blueprint commits to increasing starting teacher salaries, building professional career ladders around the National Board Certification Model, induction support, and job-embedded professional learning opportunities.

The Blueprint calls for local systems to begin implementing a new career ladder system by July 2024. In particular, the model specifies that teachers who earn National Board Certification can receive a salary increase of $10,000, with an additional $7,000 if they teach in a low-performing school. As teachers demonstrate greater effectiveness, they can progress along the career ladder, with increases in $5,000 to $15,000 at each career level bump.

Importantly, the professional career ladder was designed to provide teachers with the opportunity to stay in the classroom, rather than moving into an administrative track in order to progress in their careers. As such, the system is built around two potential tracks for the systems' most experienced teachers: a teacher leadership track and a school leadership track. The teacher leader track offers teachers opportunities to become a *lead teacher*, who works to mentor new teachers, conduct observations, and lead their own classroom. The teacher leader track also offers the potential to develop as a *distinguished teacher* or a *professor distinguished teacher*, which come with increased leadership and authority (Figure 7). As such, the professional career ladder is structured intentionally to create the infrastructure to support other aspects of the Blueprint (e.g., mentor teacher models, new teacher induction support, National Board Certification). As Level B in Figure 7 highlights, teachers still have the opportunity to transition to roles as school leaders or administrators; however, this track is positioned as parallel to the work of being a teacher leader.

Figure 7. Blueprint for Maryland's Future Professional Career Tracks



While Maryland's Blueprint represents an ambitious state-level effort to transform the teaching profession, the field should continue to learn from the roll-out and implementation of the vision. It is additionally worth noting that Maryland is not the first or only state to recently work towards a state-level transformation of the teaching profession. Iowa's Teacher Leadership and Compensation (TLC) has supported the development of teacher leadership roles across the state since 2014-15. At the same time Maryland was developing the Blueprint, North Carolina's Department of Public Instruction was leading an ambitious effort to overhaul their teacher licensure system to provide more diverse on-ramps into the teaching profession. The effort was led by a diverse coalition of state policy leaders, district leaders, practitioners, deans of teacher education programs, researchers, etc. and received substantial political backlash from the field throughout its development. After multiple years of developing a new licensure model, the model has yet to pass into policy. Therefore, future scholarship should seek to understand how the political conditions shape the development and implementation of statewide reforms to teaching, such as Maryland's Blueprint and North Carolina's licensure reforms.

Creating more productive school working conditions depends on the better preparation of school leaders. The quality of school leadership and support is a key factor in teacher retention (Grissom, 2011; Grissom & Bartanen, 2019; Hughes et al., 2014; Jackson, 2012; Kim, 2019; Learning Policy Institute, 2017), particularly for teachers of color (Walker et al., 2019). In particular, school leaders play a key role in shaping the school working conditions, such as the quality of relationships and the structures of collaboration, which shape teacher retention (Learning Policy Institute, 2017). School leadership turnover is associated with greater teacher turnover (DeMatthews et al., 2022). Diversifying the school leader workforce may also be a potential lever to support teacher diversity, given that teachers are more likely to report higher job satisfaction with same-race principals (Grissom et al., 2021). Black principals have also been empirically found to hire teachers of color at a higher rate than their White peers (D'Amico et al., 2017; Goff et al., 2018).

Accordingly, strategies to support teacher retention should attend to the significant role that school leaders play in shaping the conditions of teachers' work. Moreover, implementing new school structures, such as team teaching models, depends on school leaders' support. A landmark systematic review of the past two decades of literature on school leadership funded by the Wallace Foundation documents four key qualities of effective principals:

1. "**Engaging in instructionally focused interactions with teachers.** Forms of engagement with teachers that center on instructional practice, such as teacher evaluation, instructional coaching, and the establishment of a data-driven, school-wide instructional program to facilitate such interactions.
2. **Building a productive school climate.** Practices that encourage a school environment marked by trust, efficacy, teamwork, engagement with data, organizational learning, and continuous improvement.
3. **Facilitating productive collaboration and professional learning communities.** Strategies that promote teachers working together authentically with systems of support to improve their practice and enhance student learning.
4. **Managing personnel and resources strategically.** Processes around strategic staffing and allocation of other resources." (Grissom et al., 2021, p. xv)

For school leaders to effectively promote these practices, they need access to high-quality preparation and professional development. Perhaps unsurprisingly, many of the conditions of high-quality *teacher* preparation similarly support high-quality *school leader* preparation. For example, previous research suggests that access to authentic learning opportunities, expert mentors, professional networks, targeted recruitment, and high-quality curriculum are critical in both preservice and in-service school leader learning (Darling-Hammond et al., 2022).

Elevating the teaching profession requires building more equitable and competitive systems of teacher compensation. One of the central challenges in both recruiting and retaining a diverse, high-quality teacher workforce in the United States today is the significant financial burdens associated with becoming a teacher. Data from the RAND Corporation suggests that the "insufficient pay to merit the risks or stress" of teaching was among the leading reasons teachers left the profession in the wake of the COVID-19 pandemic (Diliberti et al., 2021). The low compensation of teachers has also been documented as the primary reason high-achieving college-aged students choose not to go into teaching (Auguste et al., 2010). The financial burdens associated with becoming a teacher extend far beyond the relatively low pay, however, but are also compounded by rising costs of living and student debt. In addition to the financial incentives to support teacher recruitment discussed in the previous section (i.e., service scholarships, loan forgiveness, and federal grants), teacher compensation can be made more robust through a range of potential policy levers:

→ **Increasing teacher salaries.** Teacher salary models should be restructured in order to better reflect the tremendous social value of teachers and to value the expertise teachers' bring to their work. On average nationally, teachers' weekly earnings are only 80% of those of other college-educated professionals; however, there is wide variation between states in terms of the starting salaries and wage competitiveness of teacher salaries (Carver-Thomas & Patrick, 2022). As of 2019-2020, the statewide annual starting teacher salaries ranged from Montana on the low end ($32,871) to the District of Columbia on the high-end ($56,313) (Carver-Thomas & Patrick). Increasing teacher salaries has been documented to reduce teacher turnover (Bueno & Sass, 2018) and support the attractiveness of district local labor markets and increase both the size and quality of the teacher workforce (Hough & Loeb, 2013).

Importantly, teacher salaries do not work in isolation from broader strategies to build the teacher workforce. Rather, increasing salaries must be coupled with district personnel practices which focus on strategically hiring and retaining high-quality teachers (Hough & Loeb, 2013) and diversifying the teacher workforce. As the following recent case of Hawai'i's teacher bonuses suggests, the implementation of teacher compensation reforms also tremendously shapes its outcomes.

Addressing Special Education Teacher Shortages through Teacher Bonuses: The Case of Hawai'i

In December 2019, the Hawai'i Department of Education (HIDOE) announced a new strategy for addressing their persistent teacher shortages: a differentiated pay model to increase teacher compensation in the state's most intense shortage areas. The plan called for teachers in hard-to-staff schools to earn bonuses ranging from $3,000 to $8,000, Hawaiian Language Immersion teachers to earn bonuses of $8,000, and special education teachers to earn bonuses of $10,000 (Hawai'i State Department of Education, 2019). Notably, teachers who work across multiple areas—e.g. Special education teachers working in hard-to-staff schools—were eligible to bundle both bonuses (Theobald et al., 2023).

A recent evaluation of the policy documents positive results. Since the introduction of the policy, the proportion of vacant teaching positions in special education has reduced by 32%. The effects of the policy were most significant in hard-to-staff schools, where teachers received both bonuses for special education and hard-to-staff schools. Notably, the reduction in teacher shortages in special education was driven by general education teachers moving into special education routes, rather than declines in the turnover of special education teachers (Theobald et al., 2023).

Previous reforms to teacher compensation in other contexts have not had the same success for two reasons. First, such reforms can be bureaucratically challenging for teachers to manage, thereby undercutting their effectiveness (Theobald et al., 2023). The success of Hawai'i's reforms may therefore be partially attributed to the fact the policy was fairly simple, and the state invested in a marketing plan to ensure the state's educators understood the new policy (Theobald et al., 2023). Second, previous research suggests that bonuses to recruit teachers to high-poverty schools and high-shortage subject areas (e.g., special education, math, and science) should be $5,000 minimum (Wyckoff, 2024).

As other states look to teacher compensation reform as a lever for teacher recruitment and retention, the field must ensure that changes are clearly communicated to teachers (Coggins, 2023), and investments in teacher compensation are sizable enough shifts to make a dent in teacher labor markets.

→ Housing subsidies. In order to recruit and retain teachers in areas with high costs of living, districts and states can also invest in providing housing subsidies to support teachers' abilities to live comfortably near where they work. Though these programs are relatively nascent and the evidence base on the effectiveness of such subsidies is still emerging, there are a number of emerging state and district approaches which show initial promise. These approaches have particularly grown in popularity in the San Francisco Bay Area, which reports one of the highest costs of living nationally, but have also expanded nationally (Davis, 2017).

- For example, **Santa Clara Unified School District** built "Casa De Maestro," an affordable housing unit where teachers are able to live up to 7 years, in 2001. These units are rented at 80% of the market rate, to offset the high living costs in the Bay Area and help teachers save for homeownership (Santa Clara Unified School District, n.d.). Whereas the overall teacher turnover rate in the district is 24%, the reported turnover rate for teachers living in the subsidized apartments is only 8% (Davis, 2017). **San Francisco Unified School District** recently also invested in a subsidized affordable housing project for teachers called Shirley Chisholm Village, and has been working to develop additional affordable housing projects for teachers (Kukura, 2024).

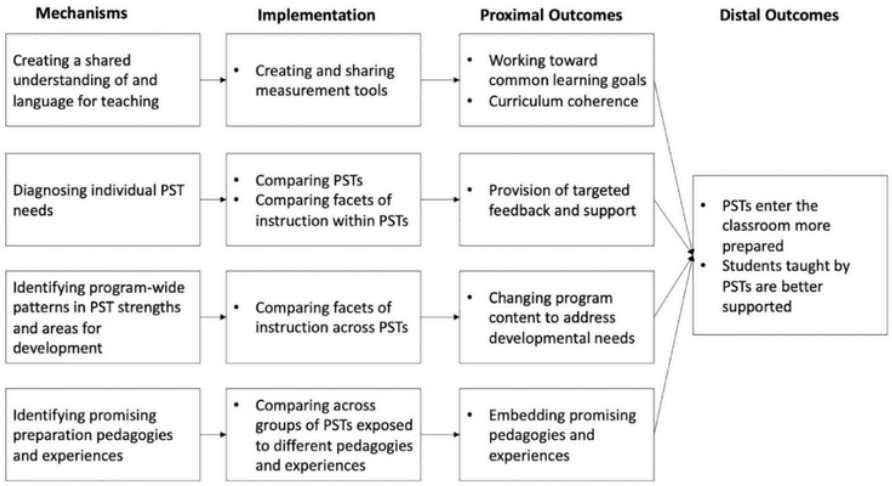
- Other programs have sought to support educators in becoming owners. For example, **San Francisco Unified School District's *Teacher Next Door* Program** offers educators loans ranging from $20,000 to $40,000 to support purchasing their new home (City and County of San Francisco, 2024). A recent report finds that school districts in California own enough developable land (75,000 acres) to build 2.3 million housing units (Center for Cities + Schools, cityLAB, and Terner Center for Housing Innovation, 2021). Accordingly, as states and districts look to finance affordable housing programs, they can tap into their developable land, already owned by districts.

Perennial Challenge 3: Developing shared measures and systems of accountability to ensure consistency in quality across the field

Given the diverse pathways into the profession, an enduring challenge in the field has been how to measure and assess whether teachers are prepared to enter the field. We know that teachers vary significantly in their impact on students (Rivkin et al., 2005). At the same time, one of the most enduring challenges at the heart of all of this work is that different stakeholders in teacher education hold different underlying conceptions of what constitutes "good teaching" or teacher quality (Ball & Hill, 2009; Cohen & Goldhaber, 2016; Kaul, 2024b; Sato, 2014). The field of teacher education has historically lacked a "common language" to describe what effective teaching looks like, as well as the measures to ensure that the diverse pathways into teaching are preparing teachers of a comparable caliber (Grossman & McDonald, 2008). To further complicate these challenges, accountability systems are typically focused on *university-based programs*, but do not have jurisdiction over the other diverse pathways into the profession.

Yet, developing such a shared language and associated measures is foundational to better supporting teachers to support K-12 students. Teacher education pathways are invested in developing teachers' "transferable skills," which will hold even beyond the particular contexts they are trained within (Bell et al., 2012, as cited in Boguslav & Cohen, 2024). As Boguslav and Cohen (2024) articulate (Figure 9), gaining better insights into teachers' knowledge, skills, and dispositions is at the core of both targeting support to pre- and in-service teachers, and ensuring that all students have access to high-quality teachers.

Figure 9. Conceptual Framework Articulating How Data on Preservice Teacher (PST) Knowledge, Skills, and Dispositions can Contribute to Improvements in Teacher Preparation



Source: Boguslav & Cohen (2024)

However, building shared measures which are widely adopted and recognized across the field is a challenge given that different stakeholders frequently hold divergent expectations, priorities, and criteria for assessment. It is perhaps unsurprising that teacher evaluation reform is one of the most contested areas of education policy (Cohen & Goldhaber, 2016). Previous efforts to develop such a common language in the field of teacher education have historically focused on developing both *standards* and *accountability systems* for pathways and licensure systems to be aligned to, as well as measures of teaching. In what follows, we describe the underlying tensions, and possibilities, in each of these areas.

Learning from Another Field: The Case of Nursing

Though the work of defining a "common language" for teaching has been challenging, similar efforts in the field of nursing suggest that this is possible. Like teaching, nursing has historically been a female-dominated field, which relies on practitioners drawing on both *technical expertise* and *relational skills* (Grossman, 2020). Unlike medicine, however, nursing had struggled as a field for decades to articulate what exactly the core "practices" of nursing entailed. Without such a common language of practice, nurses struggled to communicate their work to other disciplines, and the field lacked agreement on what knowledge nurses needed before they entered the field (Warren & Hoskins, 1990).

In response to this challenge, the field of nursing formed the North American Nursing Diagnosis Association (NANDA), and held a series of convenings, starting in the 1970s, to develop a common language for nursing. This involved developing a taxonomy of nursing practice. Today, NANDA International describes the need for such common language in the following way: "Nursing diagnoses communicate the professional judgments that nurses make every day to our patients, colleagues, members of other disciplines and the public. Nursing diagnoses define what we know – they are our words" (n.d.).

Importantly, the field of nursing also developed the Nursing Intervention Classification in the 1990s, which articulates specific nursing interventions which reflect both the *physiological* treatments nurses provide, as well as the critical *relational* work they engage in (Grossman, 2020).

The development of a common language in nursing provides a model for what is possible for the teaching profession. This diagnostic language in nursing has ultimately helped the field both streamline the preparation of future nurses, and ensure that all patients receive evidence-based care when they are seen by nurses.

To align teacher education pathways around a shared vision of teaching, the field can articulate *standards* for what high-quality practice looks like. For example, the Council of Chief State School Officers (CCSSO) has developed multiple versions of the **Interstate Teacher Assessment and Support Consortium (InTASC) Standards**, with the earliest version released in 1992. The standards are designed to provide "a common language about how to develop and grow effective teaching practice" and are designed to support *teacher education pathways* in designing curriculum; *mentors, coaches, and school leaders* in providing feedback to teachers; *state, district, and local policymakers* in informing licensure models; and *teachers* in supporting their own professional growth (Council of Chief State School Officers, 2013). These standards continue to be reflected in a number of state- and field-level licensure models, such as CAEP (Council for the Accreditation of Educator Preparation, 2022), and serve as a guide to some teacher education pathways. In this way, the standards offer a shared vision of high-quality practice which diverse systems (e.g., teacher education pathways, districts, states) can choose to align themselves around; however, the standards themselves are not necessarily tied to any particular accountability system.

Learning from Previous Reforms to Develop Common Measures: The Case of edTPA

While InTASC is not an accountability system in and of itself, it has guided the development of measures which have been tied to state-level accountability systems —most notably, the **edTPA**. Understanding the history of edTPA offers the field critical lessons that can guide future efforts to build and scale measures of teacher quality.

First developed by researchers at the Stanford Center for Assessment, Learning, and Equity (SCALE), the edTPA is a performance-based, subject-specific assessment for pre-service teachers (edTPA, n.d.), which became the most widely used tool for assessing teacher candidates by 2018 (Gitomer et al., 2021). Though some states have since moved away from edTPA, it was previously mandated by teacher education programs in 18 states, and approved by them in 21 others (Gitomer et al., 2021). Teacher candidates' scores on the edTPA therefore are often tied to consequential decisions about their licensure, which has been a point of significant criticism in the field (Hutt et al., 2018; Gitomer et al., 2021). There has been wide variation in terms of whether teacher educators and program leaders see edTPA as a lever for *inquiry* or *compliance* (De Voto et al., 2021), which has shaped the field's response to the measures. One of the biggest issues with edTPA, however, is that the measures themselves may be unreliable and invalid measures of teachers' practice (Gitomer et al., 2021).

Future attempts to develop measures of teaching should learn from the issues in both measure development and implementation from previous reforms in this space. Particularly given evidence that licensure exams can be the largest contributor to underrepresentation of Black educators (Bardelli et al., 2024), the field should be cautious about the use of measures for accountability purposes without thinking through the potential equity implications. As such, any future efforts to develop common measures in the field should grapple with the shortcomings of previous reforms in this space, and ensure that measures are both psychometrically valid and equitable.

Within the current political landscape, the primary two policy levers to align teacher education pathways, schools, and districts to such standards are *program accreditation* and *teacher licensure systems*. Program approval and accreditation of teacher education pathways has historically been highly decentralized, as diverse entities are tasked with evaluation pathways, including: "state governments, national professional accreditation, regional accrediting agencies, TPPs, the federal government, and media outlets and other independent organizations" (National Academy of Education, 2024). Teacher licensure systems are the primary policy tool that states have to operationalize policy levers discussed in this report, such as teacher professional career ladders. As such, there is value in finding ways to align systems around shared visions of high-quality teaching so that the various entities engaged with teacher preparation work in alignment.

The field must think critically and expansively about what the markers of "teacher quality" are, and what outcomes we care about, because these measures serve as the basis of any program accreditation and/or teacher licensure system. Supporting teachers to advance along a professional career trajectory requires both having a shared vision of what high-quality practice looks like and supporting teachers' ongoing professional learning and development. For example, if states build out teacher professional career ladders, there must be measures which signal teachers' readiness to progress to the next stage of the career ladder. To guide the identification of those markers, the field must ask: What are the skills, dispositions, and practices we hope all teachers possess? How would we know that teacher education pathways are supporting teachers to develop these skills? What are the skills, dispositions, and practices that we hope *mentor teachers* possess, since these are likely to be different? How would we know that mentor teachers are being supported to cultivate these skills? And, at the field-level, what would it look like to have a thriving teaching profession? To that end, the field might leverage both individual-measures of teacher knowledge, skills, and dispositions, and also consider labor market outcomes like teacher retention.

If the field uses program accreditation and teacher licensure systems as the levers for aligning our visions of high quality practice, it is worth noting that the particular measures employed across those systems might vary. Program accreditation would focus on measures tied to the outcomes of particular pathways.

For example, a recent consensus report produced by the National Academy of Education provides an overview of the different sorts of evidence that evaluations of teacher education pathways can include (Table 2). If the field chooses to invest in scaling these accountability measures, they should be employed for accrediting pathways across the board, rather than just to university-based pathways, as is often the case.

Table 2. Evidence of Teacher Education Pathway Outcomes

Program Outcomes	Measures
Mastery of knowledge, skills, and dispositions	• Knowledge-based licensure exam pass rates and/or average scores • Graduation/completion rates • Teacher performance or portfolio assessments • Teacher candidate, completer, and employer surveys
Teacher performance and practices in classrooms	• Value-added model estimates • Teacher candidate, completer, and employer surveys • Ratings of graduates by principals or employers • Teacher performance or portfolio assessments • Classroom observations
Labor market outcomes	• Hiring and retention data • Teacher candidate, completer, and employer surveys

Source: National Academy of Education (2024)

On the other hand, teacher licensure systems are typically focused on the markers of quality associated with individual teachers (or, in the case of team teaching models, teams of teachers). For example, student surveys may be a powerful way to solicit students' feedback on their perceptions of their teachers' care for them and their peers (Ferguson, 2012). The field should think expansively about the combination of measures which best captures the full range of markers of teacher quality which we value as a field.

To build a common language for teaching, the field can tap into, and build upon, existing field-level infrastructure. Acknowledging this heterogeneity in the field, and heeding the lessons from previous field-level attempts to build and scale measures of teaching, it may be appropriate to experiment with testing and developing any new measures within smaller existing networks in the field, wherein multiple institutions are already brought together around a shared vision of teaching. Such efforts should build upon the existing infrastructure, including both existing measures and structures for scaling the use of those measures:

- For example, the field can leverage existing validated measures, which have been widely taken up in the field already, such as the **Classroom Assessment Scoring System® (CLASS)** observation protocol (Pianta et al., 2006), the **Framework for Teaching (FFT)** (Danielson, 2007), as well as content-specific measures, such as the **Mathematical Quality of Instruction (MQI)** tool (Hill et al., 2008) or the **Protocol for Language Arts Teaching Observation (PLATO)** (Grossman et al., 2013). Though the field must continue to validate observation protocols based on the range of student outcomes which we value (Cohen & Goldhaber, 2016), there is evidence on the promise of these measures. For example, CLASS has been taken up at scale within pre-kindergarten settings through Head Start program (Hamre et al., 2007), and previous work in these settings has found the CLASS protocol to retain similar psychometric properties across ethnically and linguistically diverse classrooms (Downer et al., 2012). Given that cost can be a barrier to scoring such measures at scale, the field might look to new computational scoring methods which offer promise in becoming more reliable and scalable (Liu & Cohen, 2021).

- Additionally, an existing field-level infrastructure that can support scaling measures of teaching is **National Board Certification**. National Board Certification has been implemented as a *voluntary* certification process that teachers can elect to participate in, in addition to their state certification, if they are interested in developing further as professionals. National Board Certified teachers have been documented to be more effective than their peers with similar experience (Cowan & Goldhaber, 2016), and many state licensure systems already have built in systems of stipends and/or financial incentives for teachers to pursue National Board Certification.

Building shared visions and measures for quality teaching could also support states in eliminating the bureaucratic barriers to moving between states through teacher licensure reciprocity agreements. An analysis of federal data from 2012 found that one in every 10 teachers who leave their role cited a move or other geographic issue as important to their decision to leave teaching (Podolsky et al., 2016). The main barrier to expanding teacher licensure reciprocity agreements is that state licensure requirements can vary widely, and states do not have shared baseline requirements for teacher licensure. Teachers may be discouraged to re-apply for teacher licensure in a new system, given that their pension may also not be portable between states (Espinoza et al., 2018). Teacher license reciprocity agreements allow teachers with out-of-state licenses to more easily earn a license in a new state, though the actual design of these agreements varies widely across states.

Accordingly, expanding teacher licensure reciprocity agreements between states may be a strategic, low-cost way to strengthen teacher labor markets. Only 8 states offer "full" teacher license reciprocity, where fully licensed teachers can immediately receive a standard license in a new state; however, over thirty states offer licensure reciprocity conditional on some additional requirements (e.g., additional coursework, evidence of effectiveness) (Education Commission of the States, 2023). Some states offer licensure reciprocity for **National Board Certified teachers** (Espinoza et al., 2018), so National Boards may be a potential existing infrastructure to expand such agreements. Given the existing teacher shortages across the country, this seems like a relatively low-cost solution to expanding the pool of prospective teachers.

RECOMMENDATIONS FOR FUTURE RESEARCH AND INVESTMENTS

The preceding landscape analysis of the teaching profession and teacher education pathways suggests promising potential areas for future research and investments. Heeding the lessons of previous reforms in this space, we identify recommendations with attention to both the *technical* aspects of change (i.e., which investments might most significantly transform the field) and the *political* aspects of change (i.e., what are the field-level structures necessary to ensure the political durability of these transformations). The field must engage in robust research efforts to accompany any of the following shifts in policy and practice to continue to learn lessons from the implementation of these policies and practices. In what follows, we propose specific recommendations both around how to strengthen the K-12 teaching profession and how to design enduring field-level structures which might help ensure the political durability and the sustainability of reforms

In the wake of federal disinvestments in public education, there is a growing, critical role for private philanthropy to protect the public education system. Many of the programs identified in this report have been funded through federal investments which have been abruptly discontinued, so there are opportunities for philanthropy to step in to fill these gaps in the short-term. However, rebuilding the foundations of the American public education system will require a combination of short-term fixes, as well as a more robust long-term vision for building a healthy and robust K-12 teaching profession. Accordingly, our recommendations include both some opportunities for short-term opportunities as well as a set of proposed strategies for investing in the K-12 teaching profession in a way that supports democracy in the long-term. In what follows, we present a set of recommendations, which each include opportunities for *research, policy,* and *practice*.

Proposed Strategy 1: Teacher Career Trajectories

To strengthen the teaching profession, the field should invest in district- and/or state-level efforts to establish diverse professional pathways into the profession and robust professional career trajectories to support teachers' advancement through the profession. We recommend that the field invests in both ***state pilots*** of such models, as well as an associated ***research agenda*** to develop and learn from these pilots. In what follows, we first present a set of design principles to guide any potential pilots of this work, based on our conversations with a diverse array of stakeholders in the field over the past year. These principles are informed by previous, similar efforts to transform teacher roles in policy and practice, as well as the research base on previous efforts. Then, we offer our recommendations for a number of related investments in research and practice which would complement these pilots.

Design Principles for State Pilots. Importantly, we distinguish this model from previous "teacher professional career ladder" reforms that we review earlier in this report, as these earlier models varied widely and were not organized around a shared set of design principles. As such, we adopt the new language of "professional career trajectories" to highlight our departure from earlier visions of redesigning the teacher role. In particular, our model positions *professional learning* as a critical design feature in restructuring teachers' roles. Without equitable opportunities for teachers to learn and develop as professionals, such models may face the same shortcomings of previous reforms, and end up incentivizing competition, rather than professional growth. Based on our review of existing research and policy efforts, we propose such a model be adopted using the following design principles:

Principle 1: We recommend that any model of teacher career trajectories balances a state-level vision with opportunities for local adaptation at the district-level. The state will establish certain parameters within which districts can implement teacher professional career trajectories, and will leave some room open for districts to tailor these models to best serve their contexts.

Principle 2: This model would facilitate multiple potential entry points into the teaching profession, focusing on routes into the profession which may enable the field to more effectively diversify the teacher workforce. Prospective teachers enter the profession through a range of different pathways—e.g., teacher residencies, paraprofessional routes, university-based teacher education programs, Grow-Your-Own (GYO) Programs, alternative certification programs. Given the historic barriers to diversifying the K-12 teaching profession, we must leave the door open for teachers to enter the profession through a range of high-quality entry points.

More specifically, the state would have Apprentice Teacher Roles, which are open to individuals like teacher residents, paraprofessionals, student teachers, and apprentices who have not yet earned their credentials. Within these first two years, teachers would receive greater supervision (e.g., from a mentor teacher). Individuals may stay at this provisional licensure level for a maximum of 2 years, at which point they must apply to move to the following licensure level or leave their roles.

Principle 3: All individuals at the Apprentice Teacher Role, including student teachers, would be paid a stipend. Even in the current political landscape, states have moved towards funding such models because they recognize how critical alleviating the financial burdens of becoming a teacher are to the recruitment and retention of teachers in the profession. For example, in 2023, Pennsylvania signed into law Act 2033, which created a $10 million grant program to support stipends for student teaching across the state. In the 2024-25 budget, the governor doubled funding for this program (Commonwealth of Pennsylvania, 2024).

Principle 4: At the point of certification, all teachers (irrespective of which route through which they entered the profession) will be held to shared measures of teaching quality. The professional career trajectory model would facilitate pathways for teachers to become licensed both through Apprentice Teacher Roles, and directly through university-based teacher preparation programs. In order for teachers to transition from Apprentice Teacher Roles into licensed teachers, they would need to demonstrate a baseline level of teaching quality. While our model does not prescribe what that measure is, we suggest building upon existing measures which have been developed and validated in the field already, as we discuss earlier in this report.

Principle 5: Once certified, teachers would have the option to stay in their current roles as teachers of record, or could advance into teacher leader roles in which they would hold additional responsibilities as instructional leaders in their schools and/or districts. Teachers in such roles would mentor new and less skilled teachers, including serving as mentor teachers and coaches. Teachers would also have the opportunity to stay in their classrooms—e.g., as demonstration teachers—and model their exemplary practice to their peers. Schools and districts could tailor these roles to focus on specific areas of local need. For example, Iowa's statewide teacher leadership program allows districts to define their own specific teacher leader roles. In this model, districts have created roles for data leaders, instructional leaders focused on social-emotional learning, subject matter coaches (e.g., literacy and math coaches), equity and inclusion leaders, etc. Our proposed model would similarly provide districts with the jurisdiction to define the goals of teacher leader roles.

Principle 6. The model will offer teachers increased compensation as they progress to advanced roles, reflecting their expertise and/or additional responsibilities they assume. Moving into advanced roles would require an assessment of teaching quality and additional pay. These bumps in pay at each level are tied to additional responsibilities which teachers would assume. For example, teacher leader roles would take on advanced roles as instructional leaders in their schools and/or districts would receive additional compensation to reflect their expertise and time. As previously mentioned, exemplary teachers would also have the opportunity to stay in their current classrooms as demonstration teachers, serving as a model to their peers. This approach has historically not been integrated into all models of teacher leadership; however, we view it as critical to provide teachers with the opportunity to stay in the classroom, and advance in their roles, in order to retain the high-quality teachers in our schools and position teaching as the impactful, professional work that it is.

Principle 7. The pilot model could scale through *staggered implementation*, beginning with a subset of pilot districts in the first year of implementation and then expanding to additional districts in future years. Rather than asking all districts to implement the new professional career trajectory system in the same year, the state will identify a subset of districts to pilot the model in the first year. The state will have discretion to identify which districts to include, but will prioritize starting with districts that have sufficient capacity in their local teacher labor markets. Recognizing that some districts may be understaffed, the staggered implementation will provide these districts more time to build out their internal capacity. The staggered implementation will help offset the investments needed to finance the model. Additionally, the field should invest in studies on the implementation and impact of the initial pilots to surface any implementation challenges before scaling the model more widely. This research may also help make the case to state legislators to build this model into legislation in the longer-term. We see taking such a measured approach, where states invest in developing strong foundations for the model before scaling, as critical to the political durability of the model in the longer-term.

Principle 8. To support scaffolded implementation, states and/or districts might decide to set aside a particular percentage of openings for teacher leader roles at the start of implementation, based on their local labor market capacity. For example, Iowa's Teacher Leadership & Compensation (TLC) model prescribed that districts set aside 25% of openings for teacher leader roles at the start of implementation.We suggest that states and districts consider similar models, depending on what their internal capacity is. However, we also recognize that setting such a specific cut-off might not make sense for all states, given disparities in district capacity, so we suggest this as a possible consideration for states, rather than a necessary design principle.

Principle 9. By being built around existing systems, such as the National Board for Professional Teaching Standards, this model could be leveraged to support teachers' movement across states. As discussed earlier in the report, the diverse state-by-state landscape of teacher licensure policies creates hurdles to teachers staying in the teaching profession when they move between states. Some states offer licensure reciprocity for **National Board Certified teachers** (Espinoza et al., 2018), so National Boards may be a potential existing infrastructure to expand such agreements.

Principle 10. Depending on their internal capacity, districts may experiment with creative team teaching models (also known as "strategic staffing models") in order to strategically leverage existing talent in districts and leverage talented mentor teachers to support the training and induction of newer teachers. As described earlier in the report, these models bring together a team of educators—e.g., teachers, paraprofessionals, mentor teachers, teacher residents, and coaches—to work alongside each other to educate a larger group of students (Aldeman, 2024). As districts build out their teacher leadership capacity through this proposed model of differentiated teacher roles, there may be a growing opportunity to strategically leverage teacher leaders in team teaching models. These models might be particularly useful in districts and schools facing teacher shortages as they also provide potential pathways for paraprofessionals to work towards certification while working in classrooms. Such models can also provide an opportunity to more effectively leverage staff like paraprofessionals and tutors who are not pursuing teacher certification by intentionally pairing these staff with experienced mentor teachers.

In addition to supporting the development and piloting of such statewide models, we recommend the following avenues for future research and practice, which would complement statewide teacher career trajectory models:

Recommendation for Research: Research on the State-level Implementation of Teacher Career Trajectories. To understand the political conditions necessary to sustain such statewide efforts, the field should invest in more research on longitudinal and cross-state implementation studies of reforms to teaching and teacher education, which highlight contrasting political environments. For example, research might investigate the political conditions necessary both to develop and implement such reforms. Such research might investigate, for example, why Maryland was more successful than North Carolina in launching major statewide reforms to teaching, and consider how to foster such political conditions.

Recommendation for Research: Research on High-Quality Mentoring. While we have measures for what quality teaching looks like, there are less robust understandings of what it takes to be a high-quality mentor teacher. Absent such an understanding, teachers transition into mentor teacher roles based on measures of their effectiveness as teachers or their experience-level, rather than because they actually have the skills and dispositions to effectively mentor their peers.

The field should deepen the evidence base on what knowledge, skills, and dispositions are necessary to be an effective mentor teacher. A parallel, related line of research should investigate the in-service training and support teachers need to develop those knowledge, skills, and dispositions. A challenge of research on teacher leadership and mentor teachers is that such programs vary tremendously in practice. As such, future efforts to develop this evidence should draw attention to the knowledge, skills, and dispositions necessary to support particular dimensions of teacher leadership and/or mentor teaching.

Recommendation for Research: Research on the Quality of Pre-service Pathways into Teaching. As pathways into the teaching profession become more diverse, the field must invest in generating a stronger evidence base on programs, such as for-profit pathways, GYO programs, and teacher residencies. In particular, the field should invest in better understanding the extent to which these pathways support teachers to effectively teach their students and the retention of graduates. Given the wide variation in these pathways, such research may focus on isolating programmatic features which are effective in preparing teachers.

Recommendation for Practice: Policy Guardrails to Ensure the Quality of Pre-service Pathways into Teaching. Building upon this expanded evidence base on the effectiveness of various pathways into teaching, the field should invest in developing more guard rails around potential pathways into the profession, to ensure that all prospective teachers have access to high-quality teacher preparation. As the field's prior experience with the rise of for-profit colleges suggests, the introduction of a profit motive in higher education can result in harm to students. As such, the field should follow the regulatory concerns with such programs and work to develop greater accountability for non-IHE-based pathways. Given the current political climate, it is likely that there will be significant headwinds to regulating the for-profit higher education landscape in the short-term; however, we see this as a critical step if and when there is sufficient political will.

Proposed Strategy 2: Statewide and Federal Data Systems

To support the field's ability to diagnose and identify solutions to future challenges faced by the teaching profession, the field must invest in improved statewide data systems, and infrastructure for research-practice partnerships focused on teacher education and teacher workforce issues. One of the biggest challenges to understanding the state of teaching and teacher education across states is the wide variation in data systems between states. Without strong, and comparable, data across states, we lack a shared understanding of the nature of teacher workforce issues, and are hindered in our ability to diagnose potential solutions to those challenges. Given this variation of pathways into the teaching profession, it is critical that the field has some way of understanding pre-service teachers' level of preparedness upon completion of respective pathways, so that districts can target mentoring and inductions support accordingly. Therefore, the field would benefit from improved data systems, and accompanying infrastructure for research practice partnerships to study such data.

Recommendation for Practice: Invest in Federal and State-level Data Collection. Given the potential shuttering of the National Center for Education Statistics (NCES), there may be a significant gap in the information we have moving forward about all aspects of the education system, including critical information about the teacher workforce. If the federal government discontinues this data collection, there will be a tremendous gap in the field's ability to track educational progress and to diagnose and address educational inequities at all levels of the system. At this moment, there is an opportunity for philanthropies to be nimble and creative in finding ways to fill these gaps in critical data collection, unless state and federal governments are able to fill this critical function again.

Recommendation for Practice: Invest in Data Infrastructure, such as Integrated Data Systems (IDS). The field should invest in building out state-level data systems related to teaching and teacher education, and work towards building greater alignment across states. States are inconsistent in which data they collect related to teacher shortages, and there is insufficient federal data on shortages (Nguyen et al., 2024). The model of Integrated Data Systems (IDS) goes one step further by providing the infrastructure to bring together individual-level data from diverse public agencies (e.g. schools, human services, the justice system). Together, such systems are aimed to promote more targeted and evidence-based decision-making, but also encourages cross-sector collaboration that bridges data silos and fosters shared accountability (Fantuzzo & Culhane, 2015).

States with robust integrated data systems display the potential of investment in such models more widely across the field. Currently, the evidence base on teacher labor markets is concentrated to a relatively small subset of states that have the ability to link data. For example, Washington state's Education Research & Data Center (ERDC) offers linked education and workforce data from diverse state agencies. Tennessee has also long been a leader in data systems, with their robust Tennessee Longitudinal Data System (TLDS) and accompanying research-practice partnership housed at Vanderbilt University: Tennessee Education Research Alliance (TERA). In Texas, the Education Research Center (ERC), housed at UT Austin, offers longitudinal data to follow students from their first day of school through their careers. Similarly, the North Carolina Education Research Data Center (NCERDC) partners with the North Carolina Department of Public Instruction to link two decades worth of teacher- and student-level data. Building out these sorts of systems across states, and aligning them at the national level, is critical in allowing the field to consistently diagnose the nature of teacher workforce issues, and work towards shared solutions to those problems.

Recommendation for Practice: Invest in Research-Practice Partnerships. To provide the infrastructure to make the most of these data systems, the field should also invest in research-practice partnerships (RPPs) to provide ongoing analyses of these data, and to study the other potential reforms identified in this report. These RPPs must engage diverse stakeholders involved in the education system (e.g., practitioners, teacher education pathway leaders, community colleges, state policymakers, policy researchers). As such, there is an opportunity to embed and/or position such RPPs in partnership with regional collaboratives.

One potential model of such an RPP is the **Center for Longitudinal Data in Education Research (CALDER) at the American Institutes for Research (AIR**). CALDER brings together researchers from AIR, external research partners from a range of universities across, and has an advisory board of policymakers and practitioners from diverse state partners. Building on the infrastructure of robust state data systems in states like Tennessee, CALDER is positioned to conduct research, driven by problems of practice in the field, which is responsive to both teacher education programs and state agencies and policymakers.

Recommendation for Practice: Invest in Developing Measures of High-Quality Teaching. The field should expand efforts to build shared measures for high-quality teaching. Given the wide variation in visions of what effective teaching looks like, there is an opportunity to support pilots to experiment scaling measures of high-quality teaching at a smaller scale, within existing networks with shared visions of quality teaching. Learning from previous reform efforts, efforts to scale measures must be led by diverse coalitions of both policy experts and psychometricians who can consult on measurement best practices.

Proposed Strategy 3: Build Regional, Field-level, and Cross-State Capacity

To ensure the viability of these reforms over time, the field should build the local and field-level infrastructure to sustain these recommended policy reforms. These structures might be sustained at the practitioner-level—e.g., through teacher professional networks, at the regional-level—e.g., through multi-sector regional collaboratives which bring together the diverse stakeholders engaged in the work of teacher education, or even at the national level—e.g., through networks for states to learn from each other. Although the nature of the networks at each of these levels look quite different, as we discuss in further detail below, they each reflect investments in the *infrastructure* of the field. Any other recommendations identified in this report require there are strong systems in place to both implement and ensure the longevity of any new programs or policies. As such, we see investments in the following networks as investments in the long-term health of the profession and education system at large.

Recommendation for Practice: Teacher Networks. The field should continue to support national professional networks for teachers which offer the infrastructure for professional learning in the context of robust professional communities. Particularly given that many teachers operate in professional isolation, creating networks for teachers to share their expertise and learn from their peers, is critical to sustaining both teachers' sense of their own professionalism and the fields' capacity for professional learning. Such networks can both provide teachers with tailored professional development in their content area, and provide a sense of professional community and belonging. Particularly for teachers of color who may encounter racial isolation within their schools, such networks can provide a critical lifeline that sustains teachers' retention and well-being in the profession. As we discuss earlier in the report, there are a number of existing professional networks which exist, such as the **National Writing Project** and the **Black Teacher Project,** so the field should build upon this existing infrastructure.

Recommendation for Practice: Cross-sector Regional Collaboratives. The field should pilot regional collaboratives, which bring together the diverse stakeholders engaged with teaching and teacher preparation in a particular labor market. The work of implementing reforms to teaching and teacher education requires the collaboration of diverse education systems (e.g., K-12, community colleges, and higher education) and stakeholders outside of education (e.g., the workforce, municipal government). One of the reasons previous reform efforts to transform the teaching profession have fallen short is due to unintended consequences in implementation. Regional collaboratives that include multiple stakeholders can provide a critical space for proactively working through issues that might arise in implementation.

There are a number of existing models that such collaboratives might be designed after, the most notable of which being the **U.S. Department of Education's Comprehensive Centers Program**. A smaller-scale model is **Southern Regional Education Board's Human Capital Roundtables**, which specifically focused on convening diverse stakeholders across four states (Alabama, North Carolina, Mississippi, and Oklahoma) to collaborate around improving issues related to teacher workforce issues.

Recommendation for Practice: Cross-State Learning Communities. To support states engaged in similar efforts to transform and uplift the teaching profession, and pathways into the profession, there would be tremendous value in investing in cross-state learning communities to enable state policy leaders and practitioners to learn from those in similar roles in other states. For example, this recommendation could be paired with the first proposed strategy related to teacher career trajectories. A cross-state learning community could bring together states like Maryland and North Carolina to learn best practices and other lessons in implementations from other states transforming teacher roles.

Proposed Strategy 4: Competitive and Equitable Teacher Compensation Models

The field must invest in competitive and equitable teacher compensation models. To recruit and retain a diverse and high-quality teacher workforce, teachers' work needs to be compensated commensurate with its social value. In addition to increasing teacher salaries, teacher education programs, districts, and states can pursue a number of other compensation sources to financially support teachers, including: service scholarships, loan forgiveness, and housing subsidies.

Notably, many of the programs we review in this landscape analysis have historically relied on federal teacher training grants, such as the Supporting Effective Educator Development (SEED) grant program and Teacher Quality Partnership (TQP) program grants, which are in danger of losing funding. In February 2024, the American Association of Colleges for Teacher Education (AACTE) estimated that 31 SEED grants and as many as 75 TQP grants had been cancelled (Merod, 2025). Though these programs have since been protected through a legal challenge, there is ongoing political uncertainty regarding the stability of this funding. This volatility significantly impacts many programs designed to diversify the teaching profession, such as paraprofessional pathways, teacher residencies, teacher funding incentives for special education teachers, and more.

Recommendation for Practice: Building More Equitable Pre- and In-Service Teacher Compensation Models. The field should continue to invest in and expand robust teacher compensation through increased teacher pay, loan forgiveness, service scholarships, and housing subsidies. Expanded teacher compensation should both raise the floor, such that all teachers have a living wage and the ability to thrive in the profession, and can also be targeted to support the recruitment and retention of a more diverse teacher workforce. Expanded compensation for differentiated roles also has the potential to raise the earning potential of career teachers. In particular, we recommend investments to support paid student teaching models (e.g., integrated with teacher residency models).

Recommendation for Practice: Protecting and Expanding Student Loan Programs. Given the robust evidence on the administrative barriers to teachers accessing existing federal loan forgiveness and service scholarships (e.g., Teacher Loan Forgiveness [TLF], Public Service Loan Forgiveness [PSLF], TEACH grants), the field must work to both defend the survival of these programs, and reduce the intense administrative complexity of these systems. For example, the field should push for programs like TLF and PSLF to not require teachers to pay monthly payments at the start of their career, before they have completed their service requirements.

Recommendation for Research: Cost-effectiveness of Teacher Compensation Models. The field should continue to invest in research which seeks to understand the cost-effectiveness of various teacher compensation approaches. For example, given the relatively recent rise of teacher housing subsidies, the field should investigate how these programs support teachers' long-term retention in the profession. Particularly given the financial stress districts and states will be under given recent federal funding cuts, the field will need to prioritize cost-effective models.

CONCLUDING THOUGHTS

Given the profound challenges currently facing our country, now is a critical moment to reaffirm and double down on investments in the teaching profession. With widespread teacher shortages impacting communities across the country, there is a unique opportunity for robust bipartisan support to strengthen the recruitment and retention of teachers. Despite the uncertainties of this particular moment, one thing is clear: ensuring that all students have access to high-quality teachers will lay the foundation for strengthening our society. As we outline in this report, we see many potential avenues to invest in the teaching profession which could have a profound impact, and hope that the field takes seriously the power such investments have to help us rebuild and strengthen our democracy at this moment.

> Despite the uncertainties of this particular moment, one thing is clear: **ensuring that all students have access to high-quality teachers will lay the foundation for strengthening our society.**

How we choose to invest in public education ultimately reflects the nation's broader vision for education's role in our democratic society. As attacks on public schooling and the very foundations of American democracy mount, it is increasingly important to safeguard and strengthen the teaching profession. Though the current moment presents unprecedented challenges, the teaching profession has always been at the center of the nation's democratic project (Goldstein, 2015). Schools have historically been positioned as both the *problem* and *solution* to broader political projects. Today, K-12 teachers are caught in the political crossfire, left to make extremely consequential decisions about how to teach in their own classrooms, while they may fear losing their own jobs (Woo et al., 2024). Teachers seek respect, trust, and the ability to be engaged in decisions about their work (Collins, 2020). Ensuring that all students have access to high-quality teachers therefore is foundational both to improving educational outcomes, and to strengthening our education system and society at large.

Yet, even as we present these recommendations, concerted efforts at the federal level seek to undermine the public education system (James & Ragland, 2024). Many vital programs highlighted in this report, such as Teacher Training Grants, face severe budget cuts. Consequently, a central challenge in sustaining a reform vision for teaching demands navigating intense partisan politics. Previous reform efforts offer a critical lesson: transforming the teaching profession is as much a *political* challenge as it is a *technical* one (Berry & Shields, 2017). Meaningfully transforming the teaching profession, therefore, depends as much on attending to implementation of policy solutions and to the political context as it does on identifying potential policy solutions in the first place. It is imperative that policymakers, educators, and communities recognize the stakes and commit collaboratively to strengthening the teaching profession.

Learning from Previous Reforms to the Teaching Profession: The Power of Political Durability

There have been several field-level calls for reforms to uplift the status of the K-12 teaching profession over the past several decades—one of the most notable of which originated from National Commission on Teaching and America's Future (NCTAF)'s 1996 report, "What Matters Most: Teaching for America's Future." Motivated by many of the same challenges the teaching profession faces in the current moment, NCTAF aimed to develop "a blueprint for recruiting, preparing, and supporting excellent teachers in all of America's schools."

To that end, the report called for a number of policy recommendations, such as professional standards for teachers and students, investments in teacher education and induction support, targeted recruitment strategies for shortage areas, professional career ladder, and incentives for improved school conditions (e.g., school leadership).

In response to the publication of the landmark report, multiple states underwent systemwide reform efforts to implement the recommendations in the report. **California**, for example, responded with a major effort to reduce class sizes. An unintended consequence of doing so, however, was that, despite a range of targeted recruitment efforts (e.g., tax credits, fellowships, loan forgiveness), the state could not produce enough qualified teachers to fill classrooms. More experienced teachers also ended up leaving high poverty districts for better resourced districts, given these shifting demands. By the time the recruitment initiatives began to show promise, they were shut down by the state, forcing the state to fill teaching positions with underprepared and uncredentialed teachers. In the end, the state's attempts to build a robust teacher development model fell short due to both political and economic reasons. California was left with extreme teacher shortages, and without the infrastructure it needed to rebuild the teacher pipeline (Berry & Shields, 2017).

The shortcomings of reform in California suggest the success of any of the policy recommendations offered in our present report hinges upon the political durability of those reforms. Transforming the ways in which society views, and ultimately invests in, teachers' work demands deep cultural shifts which can only be achieved through sustained, coherent policy efforts over time (Kaul, 2024a). At the same time, a historic challenge is that state and local initiatives are often highly sensitive to budget cuts and/or governance changes (Darling Hammond et al., 2023).

More sustained federal commitments to the teaching profession can therefore be a buffer against the more fragile nature of states and districts. Given the uncertainty and volatility of federal funding in the current moment, this will be a challenge in the short-term. However, the federal government has a lot to gain from investing in its education system, and investments in teaching and teacher education have long been within the purview of the federal government, so it is not unreasonable to think it will continue to be again in the longer-term.

As the case of California highlights, a critical shortcoming of previous reform efforts has been the lack of political durability of reform efforts. To address this potential shortcoming, any new efforts to transform the teaching profession should invest in creating enduring structures which will support the political durability of reforms over time. It is equally important to cultivate robust coalitions who will champion the work. Such coalitions must bring together the diverse stakeholders involved in the work of teaching and teacher education, who are positioned to grapple with issues in implementation as they emerge. In the current political landscape, centering political durability and bipartisan coalition-building is of heightened importance.

Making these investments in the teaching profession now will ultimately help ensure that our public education system, and democracy writ large, is able to withstand the present moment. By investing in the K-12 teaching profession today, we can lay a strong foundation for a more stable, equitable, and democratic future.

APPENDIX A. ACKNOWLEDGEMENTS

As part of gathering the data for this report, we held a series of three convenings between March 2024 and January 2025, and additionally conducted follow-up interviews with a number of stakeholders. The first convening in Washington, D.C. was jointly organized by Chris Morphew, Dean of the Johns Hopkins University School of Education, Diana Hess, Dean of the University of Wisconsin School of Education, and the authors. We are grateful to everyone who participated in these activities; we learned so much from all of you.

Below we list the individuals with whom we interacted in developing this report. We gratefully acknowledge their feedback and contributions. However, the final report does not represent the views of the Hewlett Foundation or any of the individuals, or their affiliated organizations, listed below. Any errors are the responsibility of the authors alone. (Note that each individuals' affiliated organizations reflect their organizations at the time of our conversations with them.)

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- Brent Maddin, Arizona State University
- Anne Mahle, Teach for America
- Shanetta Martin, Maryland Philanthropy Network
- Hannah Mason, D.C. Policy Center
- Kavita Kapadia Matsko, Northwestern University
- Meredith Mehra, School District of Philadelphia
- Kent McGuire, William and Flora Hewlett Foundation
- Angela McLean, Montana University System

- Carlene Millen, Chiefs for Change
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- Christopher Morphew, Johns Hopkins University
- Na'ilah Nasir, Spencer Foundation
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- Peter Rivera, William and Flora Hewlett Foundation
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- Valeria Sakimura, Deans for Impact
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- Ryan Saunders, Learning Policy Institute
- Patrick Sexton, University of Pennsylvania
- Jim Short, Carnegie Corporation of New York
- David Schuler, The School Superintendents Association (AASA)
- Rachel Silverstein, University of Pennsylvania
- Jesse Solomon, Boston Plan for Excellence
- Shayne Spalten, Schusterman Family Philanthropies
- Josh Starr, Center for Model Schools
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- Brenda Turnbull, Policy Studies Associates
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- Jose Vilson, EduColor
- Nathan Warner, William and Flora Hewlett Foundation
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- Donna Wiseman, University of Maryland College Park
- Amy Wooten, Deans for Impact
- Judy Wurtzel, Schusterman Family Philanthropies

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