

#3 IN THE SERIES

The Pandemic Learning Project

*What States Can Learn From COVID-Era
Emergency Teacher Licensure*

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About This Series: In partnership with the Center for Analysis of Longitudinal Data in Education Research (CALDER) at the American Institutes for Research, Bellwether examines how COVID-19 pandemic-era research can support state and local leaders in navigating K-12 policy challenges now and into the future.

Executive Summary

The COVID-19 pandemic prompted an unprecedented, short-term shift in state K-12 teacher licensure policies. When testing centers and K-12 schools closed during the pandemic, most states waived teacher licensure requirements on a temporary basis. One estimate suggests that more than 100,000 new teachers might have entered the classroom under changed licensure policies.¹ This move helped states avoid catastrophic teacher shortages while reviving debates around how licensure requirements shape the teacher workforce. In the years since, more than a dozen states have altered teacher licensure requirements.²

As more states consider changes to teacher licensure policy, the need for clear, actionable evidence has never been greater. Recent studies of pandemic-era licensure waivers in Massachusetts,³ Michigan,⁴ and New Jersey⁵ offer some of the best available evidence on how policies that allowed new teachers to enter the classroom before completing standard licensure requirements influenced who became a teacher, where they taught, how well they performed, and whether they stayed in the profession. This report explores what the evidence reveals and what state policymakers should keep in mind moving forward.

These findings underscore how the design and implementation of emergency licensure policies matter. The scope, duration, and requirements connected to licensure reforms all shape the composition, effectiveness, and stability of the teacher workforce. Early evidence suggests some risks can be mitigated through targeted strategies, but that broad and indefinite policies carry greater trade-offs. While states implemented COVID-era waivers under immense

KEY TAKEAWAYS FROM RESEARCH ON EMERGENCY TEACHER LICENSURE

- **Does offering emergency licenses — which defer licensure requirements until after candidates start teaching — alter who becomes a teacher and the diversity of a state’s teaching workforce?** The most consistent finding across studies is that emergency licensure policies that relax licensure requirements increase the percentage of new Black and Hispanic teachers.
- **In what schools are teachers with emergency licenses placed?** State policymakers should expect that individuals who enter teaching under emergency licenses will end up in high-need schools.
- **Are new teachers who enter the classroom under deferred licensure requirements as effective as their peers who satisfy all requirements?** Emergency licensure policies that are long-term and expansive in scope may result in cohorts that perform worse on licensure tests and have a negative effect on student achievement, though results vary by study, grade level, and cohorts.
- **How do emergency licenses influence teacher retention?** Retention patterns are mixed, with higher attrition in states with broader, less structured emergency licensure policies, whereas short-term, targeted policies may lead to less attrition.

pressure with little time for planning, states now considering similar policy changes have an opportunity to apply lessons learned from this research to strengthen — not weaken — teacher quality.

Specifically, research suggests that state policymakers exploring licensure waivers consider the following recommendations:

- **Build comprehensive and cohesive teacher data systems.**
- **Conduct state-specific research on COVID-19-era waivers.**
- **Prioritize targeted, short-term emergency licensure policies.**
- **Ensure licensure test replacements are valid, reliable, fair, and efficient.**
- **Subsidize costs for licensure exams to support teachers in earning certification.**
- **Support emergency-licensed teachers with targeted mentorship and learning opportunities.**
- **Align hiring, layoff, and evaluation policies to support licensure reforms.**

Teacher licensure reform is not a binary choice between access and quality. With careful design and a commitment to research and continuous improvement, states can make progress on both.



Introduction

State teacher licensure policy sits at the intersection of three persistent challenges in K-12 education: ensuring every student has access to a qualified teacher, addressing teacher shortages, and building a teacher workforce that reflects the racial demographics of the student population. Licensure requirements — including, but not limited to, licensure testing rules — determine who is eligible to teach in public schools and are intended to ensure all teachers meet a minimal standard of competence before entering the classroom (Sidebar). Since the early 1980s, states have expanded requirements for prospective teachers to pass one or more licensure tests before they begin teaching.⁶ As a result, licensure testing requirements in particular play a significant role in shaping the size and composition of the teaching workforce.

Since the 1990s, states across the country have grappled with teacher shortages, struggling to fill vacancies in urban and rural districts; in schools serving more Black and Hispanic students or low-income families; and in the science, technology, engineering, and mathematics (STEM) and special education fields.⁷ Furthermore, as student demographics shift and Black and Hispanic students account for a greater percentage of K-12 students, the teacher workforce has remained majority white. As of 2021, the percentage of Black and Hispanic public K-12 students nationwide has grown to 43%, whereas the corresponding percentage of teachers is only 15%,⁸ a troubling disparity given emerging research showing all students can benefit from a more racially diverse teacher workforce.⁹

To address shortages and improve workforce diversity, many states have turned to issuing emergency or temporary licenses that allow prospective teachers to enter the classroom before passing a licensure test, with varying requirements for obtaining a standard license. The efficacy of this strategy has been debated for decades. Some argue that licensure testing is necessary to maintain a minimum bar of teacher quality and should be required *before* entering the classroom; others argue that licensure tests do not

predict teacher performance and therefore serve as an unnecessary barrier to initial entry into the classroom. Historical inequities in education, for example, have resulted in differential pass rates that act as a barrier for many Black and Hispanic teachers seeking to enter the profession.¹⁰ With ongoing teacher shortages and persistent underrepresentation of Black and Hispanic teachers, many states have reevaluated or are reevaluating whether preservice licensure tests strike the right balance between access and quality.

In recent years, more than a dozen states have eliminated, loosened, or modified their licensure testing requirements¹¹ in ways that resemble COVID-era emergency waivers. In 2022, Iowa eliminated its licensure content test requirement, removing the exit exam that had been required for teacher certification as part of a broader push to address staffing shortages,¹² though a 2024 law now requires that some prospective teachers take a Foundations in Reading test before obtaining a license for certain endorsements.¹³ Also in 2022, Delaware enacted a temporary one-year measure that lowered the cut score (i.e., the score used to determine who passes or fails) on the state's content area licensure test. Prospective teachers who scored within two standard errors of the cut score still qualified for certification if they met GPA and other competency benchmarks. The policy excluded special education and specialist areas but reflected Delaware's effort to reduce testing barriers while maintaining a minimal standard of competence.¹⁴ Several other states now allow teacher candidates to use a portfolio or other alternatives in place of licensure tests, reflecting a shift toward performance-based certification models.¹⁵ These policy changes reflect a growing willingness to experiment with licensure testing requirements.

The widespread issuance of emergency or temporary licenses during the pandemic created an unparalleled natural experiment, allowing researchers to assess how *deferred* licensure requirements influenced who became a teacher, where they taught, how well they performed, and how long they stayed in the

profession. These COVID-era studies, along with pre-pandemic research, offer valuable insights into the trade-offs that policymakers must consider when weighing similar strategies today. These studies, including ones from Massachusetts,¹⁶ Michigan,¹⁷ and New Jersey,¹⁸ can inform broader debates on state teacher licensure policy. It is important to note that these states, and many others, waived not only licensure testing requirements during the pandemic but also certain student teaching and training requirements. This report examines the full scope of these waivers, with particular emphasis on licensure testing, as it is an active state policy issue and remains one of the most well-documented, persistent barriers to becoming a teacher.

This report also draws on the best available data on pandemic-era emergency licensure to help policymakers understand what to expect from emergency licensure and altering licensure test requirements, the trade-offs they may encounter, and potential unintended consequences. Four critical questions guide this analysis:

- **Does offering emergency licenses — which defer licensure requirements until after candidates start teaching — alter who becomes a teacher and the diversity of a state’s teaching workforce?**
- **In what schools are teachers with emergency licenses placed?**
- **Are new teachers who enter the classroom under deferred licensure requirements as effective as their peers who satisfy all requirements?**
- **How do emergency licenses influence teacher retention?**

This report begins with an overview of ongoing debates about licensure testing policy, then turns to the evidence and concludes with recommendations for state policymakers. The information presented is intended to equip state policymakers with the guidance and insights needed to carefully plan, design, and implement licensure reform — an opportunity that states were not afforded during the pandemic.



Overview of K-12 Teacher Licensure Policy in the United States

Responsibility for setting minimum requirements for obtaining a teacher license lies with state policymakers. In most states, individuals have access to traditional and alternative routes to teaching.¹⁹ In school year (SY) 2019-20, 77% of teachers took a traditional route to the classroom, which required enrolling in and completing an educator preparation program affiliated with an institution of higher education, participating in supervised student teaching, and passing one or more licensure tests before earning a state license to teach. The remaining 23% of teachers entered teaching by completing an alternative program offered by an institution of higher education (11%) or a nonprofit or for-profit organization (12%).²⁰ These alternative programs vary in duration, course requirements, what constitutes preservice classroom experience, and whether teachers can complete these requirements prior to or while beginning their career as a teacher of record. Examples include state-approved programs offered by nonprofit organizations such as Teach For America, for-profit organizations such as Teachers of Tomorrow, and institutions of higher education that run alternative training programs.²¹

Regardless of whether a teacher completes a traditional or alternative program, most prospective teachers must pass at least one basic skills or subject-matter assessment to be issued a state license to teach.²² In some states, passing a standardized basic skills assessment (e.g., the Praxis Core, also known as the Praxis 1 exam or an equivalent state-developed test) is required for prospective candidates to enter a teacher preparation program,²³ but some states also require passing the Praxis 1 to become eligible for a state teaching license.²⁴ This assessment measures candidates' basic reading, writing, and mathematics skills. Most states also require a more specialized assessment, such as the Praxis 2, to test prospective teachers' subject matter expertise and teaching skills.²⁵ States vary in what combination of licensure tests they require; some require only passing an assessment of basic skills, some require a subject matter test, and some require both.²⁶ In some states, passing these exams is required to work as the teacher of record in a classroom; in others, new teachers have a limited window to complete testing requirements after being hired.²⁷ Some states require teachers to pass the edTPA, a performance-based portfolio, in addition to the basic skills and subject matter exams in order to graduate from a teacher preparation program and/or receive a teacher license.²⁸ Other states require that teacher candidates pass a different type of performance-based portfolio.²⁹ There are hundreds of licensure tests in use across the country that vary in design, alignment to assessment standards, and technical quality.³⁰

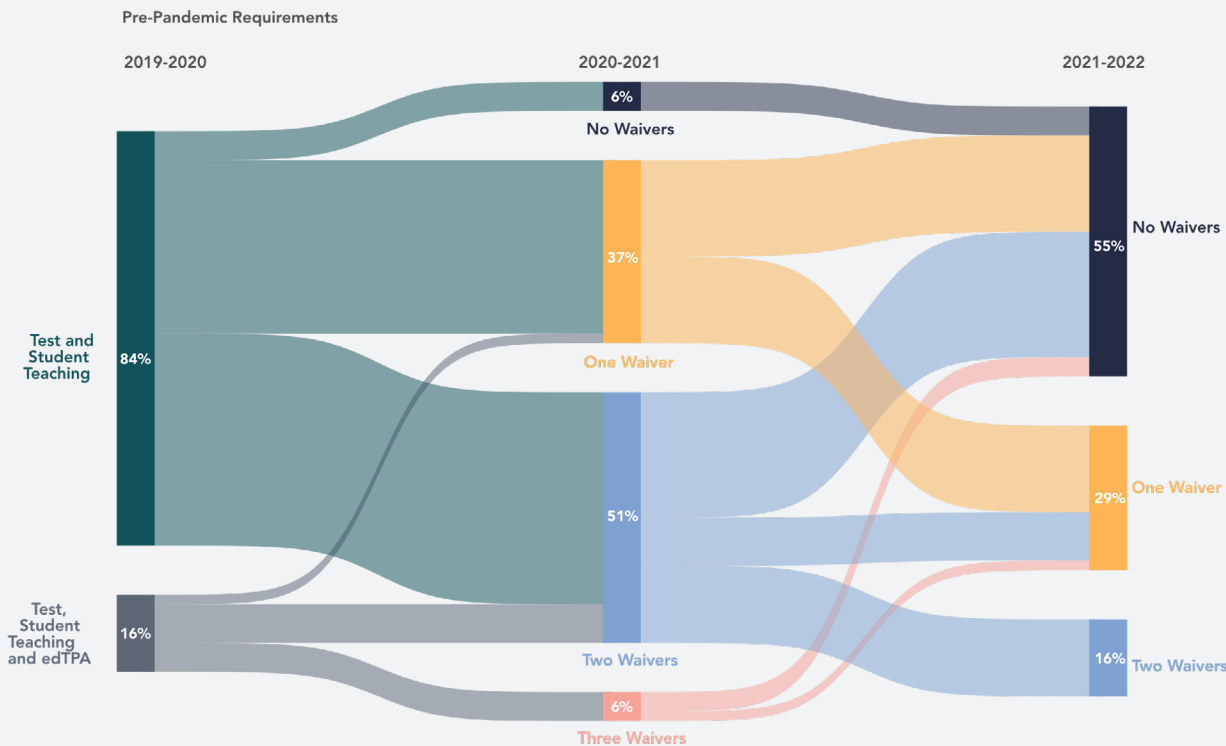
In times of teaching shortages or crises, states have also issued special licenses that allow individuals to bypass some or all state requirements, including passing licensure tests. These licenses — referred to as **emergency** or **temporary** — allow prospective teachers who may or may not have undergone training to begin teaching while they work toward long-term certification. How long the temporary licenses are valid for, what grade levels and subjects they apply to, and what teachers must do to earn a standard state teaching license also varies by state.

Even prior to the pandemic, states had used emergency waivers of licensing requirements or allowed for alternative certification to address specific teacher shortages.³¹ Although national data on the use of emergency waivers is limited, data from the U.S. Department of Education reveals that they have been in use for decades.³² In 2014, the last year the federal government reported on the prevalence of emergency waivers, 42 states, the District of Columbia, and several territories reported offering a total of 253 different types of emergency licenses.³³ Not every state reports on the number of teachers who hold an emergency license, but one study found that of the states with publicly

available data between SY21-22 and SY23-24, the percentage of teachers with emergency licenses ranged from less than 1% to approximately 9%.³⁴ Although terminology varies across states, uncertified teachers are individuals teaching without having met all state licensure requirements and who may or may not be obligated to complete them to continue teaching. In contrast, emergency licensees are required to fulfill all licensure requirements within a specified time frame while teaching under a temporary license.³⁵ A 2024 study that included data from 49 states and the District of Columbia estimated that, at a minimum, 11% of K-12 teachers are not fully certified for their current teaching assignments.³⁶

During the height of the pandemic, when most states temporarily waived their teacher licensure requirements, more than 100,000 new teachers across the country may have entered the classroom under an emergency licensure policy.³⁷ The sudden rise in emergency license holders has created an opportunity to study how waiving licensure requirements influences a state's teacher workforce. In the first year of the pandemic, most states waived or changed their licensure requirements. As the country emerged from the first year of the pandemic, licensure waivers expired in 55% of states, while the remaining 45% of states continued or renewed temporary waivers (Figure 1). National data on the status of state-level waivers in 2025 does not exist, nor is there a firm understanding of the number of teachers holding an emergency license today.

FIGURE 1: THE WAVE OF WAIVERS CRESTED IN 2020-2021, WITH A RETURN TO NORMAL IN MOST STATES IN 2021-2022: EMPLOYMENT WAIVERS 2020-2021 TO 2021-2022



Note: "CALDER collected waiver data from three main sources: *The AACTE, State Policy Tracking Map: State Actions to Support EPPs and Teacher Candidates*; the Deans for Impact *COVID-19 Teacher Preparation Policy Database*; and NCTQ's *Provisional and Emergency Licensure State Teacher Policy Database*. When waiver data was unavailable or inconsistent among these sources, CALDER examined individual state education agency websites and state executive orders to determine whether a state used waivers." **Source:** Reproduced from CALDER, "*COVID's Under-The-Radar Experiment With Teacher Licensure*," March 2023.

Debates on teacher licensure testing have persisted for decades.

Licensure exams have long been debated for their efficacy and overall influence on the teacher labor force. On one side of the debate, advocates for strong licensure testing requirements point to the not-so-distant 1970s and 1980s, when professional standards in teaching were minimal or absent altogether. Without a common set of standards (and a way to assess achievement of those standards), critics argued that teacher preparation and in-service professional development efforts were “poorly connected and often badly organized.”³⁸ Today, most states have accreditation standards for education programs, licensing standards for teachers, and advanced certification opportunities (e.g., National Board Certification), all of which are aligned to create a “three-legged stool of quality assurance.”³⁹

Proponents argue that high standards for licensure testing are critical for quality assurance and that these exams screen out ineffective teachers. These proponents point to studies suggesting licensure tests are valid predictors of teachers’ ability to improve student achievement.⁴⁰ For example, in a literature review from the National Council on Teacher Quality (NCTQ), 11 out of 15 studies found a positive relationship between a teacher’s ability to pass licensure exams and their future performance, most often measured by their contribution to student test score gains.⁴¹ Another review of the research shows that licensure test scores are positively associated with student achievement, with most evidence found at the elementary level, although the strength of this relationship varies depending on the test, subject, and grade level.⁴²

On the other side of the debate, proponents of alternatives to traditional licensure testing practices argue the exams are poor predictors of teaching abilities and serve as barriers due to differential and low first-time pass rates and high costs.⁴³ These proponents point to other studies suggesting scores on licensure assessments do not serve as a reliable predictor of student achievement.⁴⁴ Others note

that even when test scores correlate modestly with outcomes on average, not all tests have demonstrated strong predictive validity. That means some licensure tests can produce “false positives” (i.e., weak teachers who pass) and “false negatives” (i.e., strong teachers who fail).⁴⁵ Some licensure tests also predict outcomes in certain subjects but not others, and predictive validity may vary even across assessments within the same state.⁴⁶ Furthermore, while these exams test content knowledge, they are not designed to measure all the teaching and interpersonal skills educators need to be successful in the classroom.⁴⁷ Some caution, though, that eliminating tests without a strong replacement could lead to a drop in instructional quality if alternative measures do not meet adequate validity and reliability thresholds.⁴⁸ Proponents of licensure tests also maintain that efforts to reduce licensure barriers in response to teacher shortages may yield short-term benefits but carry long-term risks to instructional quality and student learning.⁴⁹

Those in favor of alternatives also argue that licensure exams serve as a barrier preventing many prospective Black and Hispanic teachers from entering the classroom. One study that examined test scores from SY14-15 to SY16-17 found that 38% of Black teacher candidates and 57% of Hispanic teacher candidates passed the most-used licensure tests (after either one or multiple attempts), compared with 75% of white candidates.⁵⁰ Some suggest differential pass rates reflect “systemic racial inequities perpetuated in our [pre-K through Grade 12] education system” that are “deepened in higher education when there are no systemic interventions and content gaps are left to individual prospective teachers alone to fill,” rather than a flawed or biased test.⁵¹ Yet others suggest racial bias may be embedded in the design of the test itself.⁵²

The cost of licensure exams also draws criticism from opponents.⁵³ Most states require prospective teachers to pass at least one standardized assessment, often from the Praxis series, which range from \$64 to \$209 per attempt.⁵⁴ A 2019 study found, on average,

between 24% and 55% of prospective elementary school teachers (depending on the state) failed their first licensure test,⁵⁵ forcing many aspiring candidates to retake the exam multiple times. This dynamic places an additional financial strain on beginning teachers, who earn, on average, less than \$47,000 a year⁵⁶ and almost half of whom hold an average of more than \$58,000 in student debt.⁵⁷ One study found about one-fifth of the individuals who failed their first attempt did not attempt the exam again and stopped their pursuit of teaching.⁵⁸ The exam costs can create financial barriers limiting lower-income candidates' ability to complete the requirements for a standard teaching license.

So, who is right? Do preservice licensure tests keep ineffective teachers out of the classroom and improve teacher quality? Or are these tests an unnecessary regulatory hurdle that keeps some effective teachers out of the classroom and reduces the overall diversity of the teaching workforce? Recent studies in Massachusetts,⁵⁹ Michigan,⁶⁰ and New Jersey⁶¹ represent some of the best available evidence to inform answers to these questions.

The COVID-19 pandemic led most states to adopt some form of emergency teacher licensure, though approaches differed.

During the height of the pandemic, state quarantine mandates required K-12 schools, institutions of higher education, and testing centers to close or limit operations, leaving prospective teachers at the tail end of their preparation programs in limbo. To ensure these individuals stayed on a pathway to the classroom and to avoid catastrophic teacher shortages, nearly every state temporarily waived state licensure requirements and issued temporary licenses to new teachers. In 2020, an estimated 100,000 new teachers entered the workforce under emergency licensure policies, including some teachers who may not have met all the state's licensure requirements in the absence of pandemic-related policy changes.⁶²

Research from Massachusetts,⁶³ Michigan,⁶⁴ and New Jersey⁶⁵ offers valuable insights on the effects of emergency teacher licensure during the pandemic, though the duration of the policy, eligibility criteria, and implementation varied across each state.

- **Massachusetts** established a multiyear emergency license for teacher candidates with bachelor's degrees who could show progress toward obtaining a full license, such as enrolling in a teacher preparation program or taking the Massachusetts Tests for Educator Licensure. Teachers could renew emergency licenses for up to five years before final expiration. All teachers were required to secure a standard teaching license after their emergency license expired to remain in the classroom.⁶⁶
- **Michigan** implemented a shorter-duration and more limited policy. Teacher candidates from in-state, traditional preparation programs could teach under a one-year emergency license before passing state-mandated licensure exams, and they received flexibility in student teaching requirements if certain conditions were met. Unlike Massachusetts, Michigan's flexibilities were not extended to alternative-route candidates and were tied to completion of traditional-route programs. However, the state did allow prospective teachers and those with certification in another state to obtain an emergency license if they could not complete Michigan licensure testing during the pandemic.⁶⁷

- **New Jersey** also took a one-year approach. Prospective teachers from either traditional or alternate pathways could obtain an emergency license without passing state-mandated licensure exams, provided they had completed 50 hours of preservice training. Before the pandemic, all candidates had to pass the Praxis 1 and a subject assessment to qualify for a provisional teaching certificate. The pandemic-era waivers temporarily suspended these testing requirements, but teachers were still required to complete the testing requirements within one year.⁶⁸

There are some notable limitations when generalizing from a small number of studies to a broader, non-pandemic-era context. First, teachers granted emergency licenses during the pandemic entered their preparation programs without knowing that testing or other requirements would be waived, meaning their motivation for entering the profession may have differed from that of individuals who pursued teaching knowing that certain requirements — including licensure tests — would be waived. For example, an analysis of multiple cohorts of emergency licensure holders in Massachusetts showed that earlier cohorts were more likely to be enrolled in a teacher preparation program or to have attempted a licensure exam.⁶⁹

Second, there are limits to making comparisons across states because of differences in the scope, duration, and requirements of each waiver policy. Michigan's emergency waiver, for instance, lasted only one year and was limited to candidates who had completed almost all of the traditional licensure requirements. Massachusetts allowed emergency waivers for up to five years and permitted a broader range of candidates to begin teaching under temporary licenses. New Jersey's waiver was short-term, like Michigan's, but was different in that it expanded eligibility beyond prospective teachers trained in traditional teacher preparation programs, like Massachusetts. All three of these examples stand in clear contrast to **Texas**, which adopted sweeping, long-term deregulation policies in recent years that have lowered the barrier to entry for new teachers. Policy changes in Texas have resulted in more than half of the state's teacher workforce being uncertified.⁷⁰ Uncertified teachers in Texas, who are

employed with no state license and are not required to obtain a license to remain in the classroom,⁷¹ are distinct from emergency-licensed teachers, who are conditionally licensed and almost always on a path to standard licensure. Uncertified teachers represent the most acute form of deregulation and are a useful reference point for understanding degrees of deregulation in teacher licensure policy. To provide a comparison case, research from Texas is included throughout this report to illustrate the differing effects policymakers can expect from varying levels of licensure reform.

Third, and perhaps most important, state policymakers had no choice but to make rapid and expansive changes to teacher licensure policies during the pandemic to avoid massive teacher shortages. These policymakers were not afforded the time, resources, or expertise needed to make careful decisions, plan implementation, and set up systems to monitor progress for continuous improvement. Policymakers today, however, are in a much better position to learn from these pandemic-era experiences and take a deliberate approach to planning, designing, and implementing licensure reforms. Research on COVID-era licensure waivers includes some of the best available evidence on the trade-offs that state policymakers should weigh when considering similar reforms today and in the future. The differing approaches Massachusetts, Michigan, and New Jersey took to emergency licensure allow researchers to examine how policy design choices influence students, teachers, and schools.



How Can Recent Evidence Inform Debates on Emergency Teacher Licensure?

This section describes how delayed or waived testing requirements shape who enters teaching, where they are placed, how they perform, and how long they stay in the profession.

Does offering emergency licenses — which defer licensure requirements until after candidates start teaching — alter who becomes a teacher and the diversity of a state’s teaching workforce?

KEY TAKEAWAY

State policymakers should expect that delaying or waiving licensure testing requirements will increase the proportion of new Black and Hispanic teachers entering the profession each year. When emergency licensure policies include broad eligibility criteria, it is also reasonable for policymakers to expect more new teachers to enter through alternative routes and with less preparation overall.

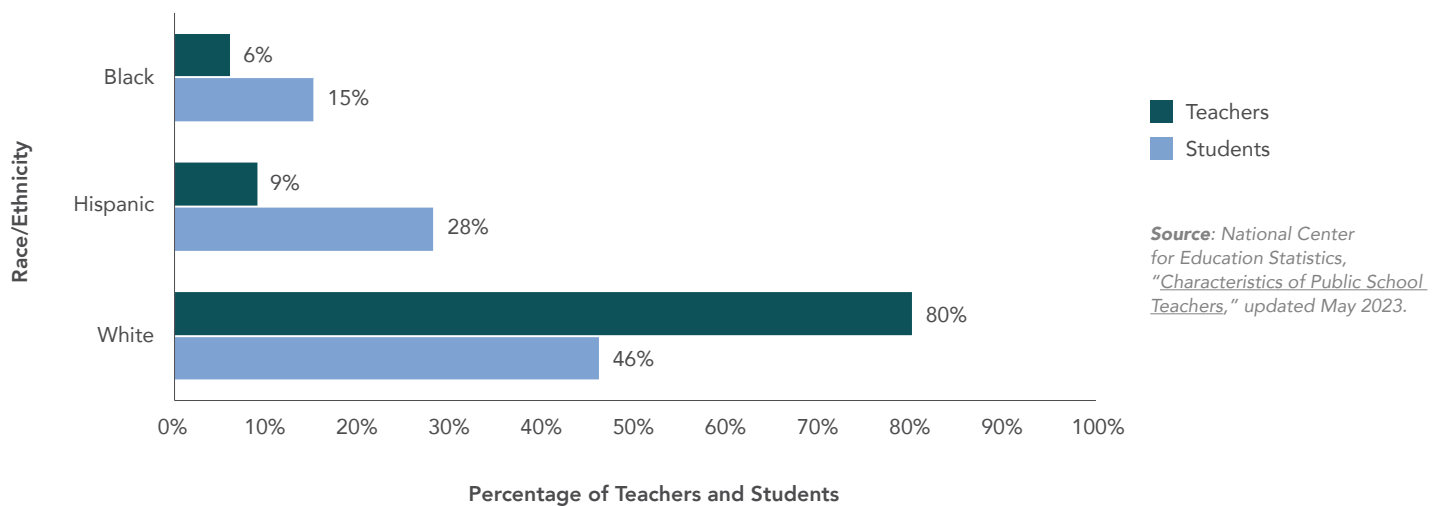
Pandemic-era licensure waivers did more than just expand access to the profession — they shifted the overall composition of the teacher workforce. In states like Massachusetts, Michigan, and New Jersey, new teachers who entered classrooms under emergency or temporary licenses differed in key ways from their peers with standard licenses. In Massachusetts, emergency license holders were more likely to have worked as paraprofessionals and had less formal preparation.⁷² Michigan’s COVID-era licensure waiver applied only to students who had completed most requirements for their in-state teacher preparation programs but had not

completed student teaching or passed the necessary licensure exams.⁷³ In New Jersey, emergency-licensed teachers were more likely to enter through alternate routes.⁷⁴ And in all states, licensure waivers increased the diversity of new teachers.⁷⁵

The teaching profession has remained majority white for decades, with Black and Hispanic teachers composing 6% and 9% of the profession in SY20-21, respectively, and white teachers composing almost 80%.⁷⁶ Conversely, the racial breakdown of the student population looks quite different. White students make up 46% of the public school student body, while Black and Hispanic students make up around 15% and 28%, respectively (Figure 2).⁷⁷

These statistics are notable given research showing Black and Hispanic students experience better academic outcomes and lower rates of suspension and expulsion when taught by a teacher of the same race, all else equal.⁷⁸ Some research shows that teachers are better able to connect with and have positive interactions with students of the same race when they understand their home and community environment, a dynamic referred to as “cultural congruence.” These researchers theorize that cultural congruence can also reduce bias and make it less likely that same-race teachers will view student behavior through a biased lens, which can

FIGURE 2: RACIAL BREAKDOWN OF TEACHERS AND STUDENTS IN SCHOOL YEAR 2020-21, UNITED STATES



combat persistent and harmful stereotypes that lead to disproportionate disciplinary rates. Same-race teachers can also serve as positive role models and mentors for students, which can enhance motivation, improve confidence, and increase student engagement.⁷⁹ Other research also suggests that teachers have higher expectations for students of the same race, and that students respond to those expectations by attending school more often.⁸⁰ Finally, emerging research suggests that all students can benefit from a more racially diverse teacher workforce.⁸¹

Easing licensure requirements may be one of the most reliable policy approaches for diversifying the teacher pipeline. Each of the studies in Massachusetts, Michigan, and New Jersey found that teachers entering under emergency licensure policies were more racially diverse than those entering through standard certification pathways. In Massachusetts, researchers found that emergency license holders were more likely to be Black or Hispanic than standard license holders. The share of emergency license holders who were Black ranged from 11% to 14% across cohorts, significantly higher than the 3% among standard license holders. Hispanic representation was also higher among emergency license holders (12%) than among those with standard licenses (4%). Emergency license holders in Massachusetts were also more likely to work in

classrooms with more students of color, better reflecting the demographics of the student population.⁸²

In New Jersey, during the first two years of the pandemic, just 7% of traditionally licensed novice teachers were Black, and 11% were Hispanic. Among temporarily licensed teachers, those figures rose to 19%-21% and 20%-30%, respectively, better aligning with the state's student population,⁸³ which is approximately 15% Black and 32% Hispanic.⁸⁴ Michigan also saw increases in the racial diversity of emergency-licensed teachers, though the patterns were more nuanced. During Michigan's waiver period, the proportion of new Black teachers increased across all certificate types, including those unaffected by licensure waivers. Researchers concluded that while licensure flexibility likely played a role, broader pandemic-era shifts in the teacher labor market, including who chose to enter the profession, may have been an even stronger influence.⁸⁵ Finally, analysts studying COVID-era licensure waivers in Texas also found that new teachers with temporary licenses were more likely to be Black or Hispanic than teachers with temporary licenses before the pandemic.⁸⁶ Despite clear evidence showing that pandemic-era licensure waivers led to an increase in the percentage of new Black and Hispanic teachers, more research is needed to understand the mechanisms driving that change.

In what schools are teachers with emergency licenses placed?

KEY TAKEAWAY

Consistent with past evidence, policymakers should expect that individuals who enter teaching without passing licensure tests will be concentrated in high-need schools, schools in urban and rural areas, and schools serving high proportions of Black and Hispanic students. These sorting effects are likely to be most pronounced when licensure requirements are relaxed in response to teacher shortages, which are often concentrated in the very schools hardest hit by limited access to certified and experienced educators.

Research shows that across the country, highly qualified teachers are unevenly distributed across schools: Schools serving more Black and Hispanic students, schools with more students experiencing economic challenges, and schools with low levels of student achievement are less likely to have access to experienced, licensed, and high-performing teachers.⁸⁷ For example, one study found that schools with more Black and Hispanic students in California and New York employ almost twice as many unlicensed and inexperienced teachers as those with fewer Black and Hispanic students.⁸⁸ Moreover, “teacher shortages have exacerbated these inequities in access because shortages can lead to the hiring of underprepared teachers.”⁸⁹

Studies from New Jersey and Massachusetts confirm that teachers with temporary or emergency licenses were more likely to be placed in high-need schools. The

New Jersey study found that teachers with temporary licenses were more likely to serve in classrooms with more Black students and students from low-income households. On average, temporarily licensed teachers also taught in schools that had low levels of student achievement before the pandemic.⁹⁰ In Massachusetts, emergency-licensed teachers were more likely than their traditionally licensed peers to work in classrooms with more students experiencing economic challenges and more Black and Hispanic students. Students in their classrooms also had lower prior test scores and non-test outcomes (e.g., absences, disciplinary referrals, grade progression, and grade point average), aligning with pre-pandemic research that emergency-licensed teachers were more likely to be assigned to schools and students with higher needs.⁹¹ Similar placement patterns were observed among teachers in Michigan. Before the pandemic, alternatively certified and out-of-state teachers on temporary licenses were more likely than traditionally licensed teachers to work in schools where over 50% of students were students of color or students experiencing economic challenges. Although this gap narrowed during and after the waiver period, the disproportionality persisted.⁹²

Another example of a state where teachers without standard licenses tend to work is Texas. Recent studies show that uncertified teachers in Texas are most concentrated in rural districts, making up more than 80% of new teacher hires in more than 40 counties in SY22-23.⁹³ These teachers were most often assigned to high-need subject areas, including secondary STEM and career and technical education, where certified candidates were in short supply.⁹⁴ District leaders in Texas reported that uncertified teachers were often hired out of necessity in schools, and data showed that districts in small towns and rural areas employed the largest percentage of uncertified teachers.⁹⁵

Are new teachers who enter the classroom under deferred licensure requirements as effective as their peers who satisfy all requirements?

KEY TAKEAWAY

Emergency licensure policies that are long-term and expansive in scope will likely result in cohorts that perform worse on standard licensure tests and have a negative effect on student achievement, especially in cases where the policy does not require emergency license holders to gain preservice classroom experience. On the other hand, short-term waiver policies that target prospective teachers who have already committed to the profession may not have a significant influence on teacher effectiveness.

Few studies directly compare the performance of teachers who did and did not satisfy standard state licensure test requirements, given the challenges of designing those studies. As a result, most research on the effectiveness question looks at the predictive validity of licensure tests. The weight of the evidence suggests that teachers with higher licensure test scores are more likely to improve student outcomes; however, some studies find a weak or nonexistent relationship with student achievement.⁹⁶ Given the variety of tests in use, the predictive validity of a given licensure exam depends on a host of factors, such as the aims of the assessment, the subject, characteristics of the test-takers, and the cut score used to determine who passes and fails the assessment (e.g., higher cut scores often result in lower pass rates).⁹⁷

Findings from Massachusetts, Michigan, and New Jersey demonstrate just how complicated this effectiveness question can be. These studies also illustrate how variation in the design of emergency licensure policies influences the composition of new teachers and conclusions about their effectiveness in the classroom.

In New Jersey, researchers examined the pass rates for the first and only cohort of emergency-licensed teachers when they took their deferred licensure tests. Researchers found that although emergency-licensed teachers in New Jersey had lower pass rates on the Praxis 1 and Praxis subject area tests when compared with traditionally licensed teachers, their test performance had no adverse impact on student achievement in SY21-22, the first year statewide testing resumed. In fact, researchers found that temporarily licensed teachers were just as effective as, and in some cases more effective than, other novice teachers, as measured by student test score gains.⁹⁸

By contrast, researchers observed variation in effectiveness across cohorts of emergency licensees in Massachusetts. Overall, students with emergency-licensed teachers had lower test scores in math and science than students taught by standard licensed teachers in the same school, but these aggregated effects were driven mostly by the second and third cohorts of emergency-licensed teachers. The first cohort — the one most similar to the emergency licensure holders studied in New Jersey — was more likely to have already enrolled in teacher preparation programs, worked as paraprofessionals, and attempted a licensure exam.⁹⁹ In Michigan, teachers with temporary certificates, most of whom came from traditional in-state teacher preparation programs, had similar teacher evaluation rates compared with those with standard teaching licenses, though fewer received a “highly effective” rating.¹⁰⁰

Recent research from Texas adds additional evidence to this growing body of work. Two studies found that the state has experienced a rapid rise in uncertified teachers (i.e., those without any form of state-approved certification and no requirements to obtain one), increasing from 10% in SY13-14 to 52% in SY23-24.¹⁰¹ Both studies also found that students tend to make less academic progress when taught by uncertified

teachers.¹⁰² These researchers found that students with uncertified teachers experienced between one and six months of learning loss compared with those with standard certified teachers, with results varying by grade level and subject.¹⁰³

The variation in these findings could reflect differences in who was eligible for an emergency license. For example, Massachusetts¹⁰⁴ and New Jersey¹⁰⁵ allowed a broader pool of candidates to obtain an emergency license, including those not yet enrolled in a teacher preparation program, while Michigan limited its waivers to traditional-route candidates who had largely completed their coursework.¹⁰⁶ Early emergency license holders also may not be representative of future applicants when these policies were extended beyond the initial year. Those who earned an emergency license during the initial years were motivated to teach regardless of the easing of licensure requirements. Later cohorts may have included individuals drawn in by the lowered barriers to entry that lacked key elements of preparation.¹⁰⁷ The limited or lack of preparation may be one reason teachers with emergency licenses appear less effective than their peers.



How do emergency licenses influence teacher retention?

KEY TAKEAWAY

While evidence from New Jersey suggests that emergency-licensed teachers are more likely to leave after their first year, findings from Michigan suggest that licensure policies that are short-term, target prospective teachers at the end of their teacher preparation program, and require progress toward a standard license may not necessarily lead to higher attrition. Retention outcomes also likely depend on preparation experiences, school context, and broader labor market conditions.

The best available estimates suggest that between 19% and 30% of all teachers leave the profession within their first five years.¹⁰⁸ Other research has found higher rates of turnover among alternative pathway¹⁰⁹ or uncertified teachers.¹¹⁰ For example, using nationally representative data from 2012 and 2013, researchers found that alternatively certified teachers “are 25% more likely to leave their schools and the profession, even after controlling for their students, schools, and teaching conditions.”¹¹¹ As with any sector, the reasons people leave a job are varied, personal, and context-dependent.¹¹²

Research on pandemic-era waiver policies paints a mixed picture when it comes to retention of emergency-licensed teachers. In the New Jersey study, results suggest teachers with temporary licenses were more likely to leave the profession after their first year than their peers.¹¹³ This aligns with recent findings from Texas, where more than 30% of uncertified teachers

exited the profession after just one year, a rate much higher than the attrition rates for teachers entering through traditional or alternative certification pathways. Researchers also found that uncertified teachers faced steep challenges in classroom management and instructional effectiveness, contributing to higher rates of early career exit. District leaders interviewed in the Texas study reported that many uncertified hires were overwhelmed by the demands of full-time teaching, particularly if they were completing certification requirements at the same time.¹¹⁴

In contrast, emergency-licensed teachers in Massachusetts were more likely to stay in the state’s teaching workforce and at the same school than their peers with standard teaching licenses, though the differences were very small. Retention patterns also varied by cohort and race and ethnicity. Later cohorts appeared more likely to remain in the workforce and same school. Among teachers with standard licenses, Black and Hispanic teachers were less likely than their white peers to stay in the workforce and at their school. However, among emergency-licensed teachers, this pattern reversed: Black and Hispanic teachers with emergency licenses were *more* likely to stay in the workforce and at their school than their white peers with emergency licenses.¹¹⁵

Michigan also found little difference in retention rates for emergency-licensed teachers. Teachers with temporary certificates remained in the profession at similar rates as those with standard certificates, and school-level retention rates increased across all certificate types. Teachers across all certification types were also more likely to remain in the profession during the waiver year than in previous years, a trend that appears to reflect broader labor market patterns during the pandemic rather than the licensure changes alone.¹¹⁶

Recommendations for State Policymakers

The best available evidence suggests that waiving or deferring licensure testing requirements can expand the pool of new teachers and increase racial diversity in the teacher pipeline, with a notable increase in the percentage of Black and Hispanic novice teachers. While some emergency-licensed teachers perform similarly to their traditionally licensed peers, most appear to perform worse. The variation in effectiveness is likely due to the design of the emergency licensure policy and how much training and student teaching candidates have completed.

There are also trade-offs. Teachers who enter through emergency or temporary licensure pathways are more likely to be placed in high-need schools and schools serving more Black and Hispanic students, students from low-income households, and students with lower prior academic achievement. In some states, they are also more likely to leave the profession after their first year, though this outcome is not universal and may be influenced by broader labor market conditions. State policymakers considering experimenting with licensure testing requirements should anticipate these trade-offs and respond with proactive strategies to mitigate unintended consequences.

These trade-offs have not stopped states from experimenting with licensure policy in recent years.¹¹⁷ We will know more about the effects of these policy changes as more data become available. For now, researchers and analysts are just getting started, and general understanding remains limited regarding how many of these teachers are still in the profession, their performance in the classroom, or whether they have taken or passed any licensure exams. Policymakers, of course, have to rely on the best available evidence when making decisions. The specific policy actions most relevant for a given state will be shaped by the design, duration, and scope of its licensure testing changes. Whether a state is eliminating tests altogether,

allowing candidates to use alternative licensure tests, or issuing short-term emergency licenses that require all or some teacher preparation, different challenges and solutions apply. Below are recommendations for state policymakers, based on available research and lessons from recent state experiences.

Unlike during the COVID era — when waivers were issued rapidly in response to crises — states now have the opportunity to approach licensure reform with more data, better research, and a clear understanding of the potential trade-offs they will encounter.

Build comprehensive and cohesive teacher data systems.

To better understand how changes in state licensure policies shape the teacher workforce — including who becomes a teacher, where they teach, how well they perform, and whether they stay in the profession — states need to have or build comprehensive and cohesive teacher data systems. In the absence of these systems, it is challenging, if not impossible, to evaluate the effect of changes to teacher licensure, including changes related to emergency licensure and testing requirements.

Teacher data systems should provide information on a range of topics, including real-time data on teacher supply and shortages; teacher licensure pass rates by preparation program; and teacher placement, retention, and effectiveness. All of this data has some value in isolation, but in the ideal case, it is part of one comprehensive and cohesive system that can inform policy, enable research, and produce transparent information for the general public. For example, real-time data on teacher supply can reveal whether licensure testing is a barrier contributing to shortages, inform what solutions might work, and test the efficacy

of those policy changes. When licensure test pass rates are tied to institutions, teacher preparation programs, and in-service teacher performance, it can help pinpoint effective programs that can serve as models for entities struggling to prepare teachers for these tests and the demands of teaching.

Many states fall short when it comes to creating robust teacher data systems.¹¹⁸ For example, 18 states provide no public data on their teacher supply. Despite the many challenges of creating data systems, states such as Colorado, Indiana, and Texas are promising models that others can learn from.¹¹⁹ States with comprehensive and cohesive data systems are best positioned to learn from the past, including COVID-19-era waivers.

Conduct state-specific research on COVID-19-era waivers.

There is good news for states considering modifying licensure test policy in some way: Data from pandemic-era licensure waivers holds enormous promise for predicting how future policy changes will shape the teacher pipeline in their state. Just like the studies highlighted in this report, state-specific research can answer important questions about who is most likely to pursue and obtain a temporary license in a state, how their performance differs (or not) from that of other novice teachers, and the likelihood they will stay in the classroom in the long term. There are many ways states can alter teacher licensure testing, including subsidizing test fees; waiving licensure tests for students who have a high enough GPA, have passed a separate assessment (e.g., SAT/ACT, GRE), or have been granted a waiver without meeting any alternative criteria; or altering the test cut score. These examples reflect ongoing efforts to try different approaches for assessing teachers' preparedness for the classroom and content matter expertise. As more state-specific research is conducted, the field will gain a better understanding of the efficacy of different state policy approaches and what unintended consequences to be aware of.

State-specific research can also provide policymakers with a sense of the costs and benefits of licensure

reform relative to other approaches to address teacher shortages and increase teacher diversity. For example, the Council of Chief State School Officers offered several recommendations for creating a diverse teacher workforce, including approaches during the preservice (e.g., reevaluating licensure requirements, providing access to loan forgiveness) and in-service (e.g., creating better data systems for tracking retention and attrition, funding to support teacher professional development) stages.¹²⁰ Efforts to diversify the teacher workforce are needed at key points across the entire teacher pipeline, from enrolling in teacher preparation programs through early years in the classroom,¹²¹ but the reality is that state resources are scarce, and funding should be dedicated to the initiatives that have the greatest measurable effect. Further research on altering teacher licensure testing requirements can give state policymakers the information they need to weigh the benefits and costs of this approach relative to others.

Prioritize targeted, short-term emergency licensure policies.

Evidence from pandemic-era waivers suggests that the design of emergency licensure policies plays a critical role in shaping who enters the teacher workforce and how prepared they are. Broad, open-ended waivers that require little or no progress toward full certification appear to attract candidates with less preparation and lead to lower retention rates. In contrast, more focused policies that require ongoing progress toward certification and some level of teacher preparation may mitigate some of the risks related to instructional quality, student achievement, and retention outcomes.

Targeted policies may be more likely to attract individuals who are already motivated to teach and have been pursuing a path to the profession. On the other hand, broad, longer-term policies may lower the barrier to entry in ways that attract less-prepared candidates. In Texas, which may have the broadest form of deregulation when it comes to teacher licensure, there has been a massive surge in uncertified teachers, many of whom lack bachelor's degrees, formal preparation, or classroom experience. These uncertified teachers



are leaving the profession at a higher rate, likely due to being unprepared and undertrained when it comes to effective classroom management and pedagogical practices.¹²² By contrast, Michigan's emergency waiver expired after one year and was available only to candidates who had completed most requirements of a state-approved preparation program. Teachers entering under Michigan's emergency waiver had similar retention rates and teacher evaluation outcomes compared with peers with standard licenses.¹²³ Massachusetts and New Jersey fell somewhere in between: Each allowed a wider range of candidates to begin teaching under an emergency or temporary license but required eventual progress toward full certification.¹²⁴ Massachusetts' waiver lasted up to five years,¹²⁵ whereas New Jersey's expired after one year.¹²⁶ Results in those states were mixed. Some cohorts of emergency-licensed teachers performed similarly to their peers, while others showed lower effectiveness or retention, depending on the cohort and license type.¹²⁷

State policymakers should avoid indefinite or broad waiver policies and instead consider temporary and focused policies tied to specific labor market needs. For example, aligning waiver policies to subject areas with documented teacher shortages can further narrow their scope and reduce the risk of unintended consequences. When temporary licenses are used, states should require clear timelines and progress benchmarks toward standard certification, ensure candidates receive structured support, and monitor teacher effectiveness and student achievement.

Ensure licensure test replacements are valid, reliable, fair, and efficient.

For states considering eliminating licensure testing altogether or allowing teachers to demonstrate competency through alternative measures, the central challenge is finding replacements that are fair, cost-effective, and predictive of teacher effectiveness. Performance-based measures, such as portfolios,

GPA thresholds, and classroom observation rubrics, can provide valuable insights, but they fall short of standardized licensure exams in terms of consistency, comparability, and content coverage.¹²⁸ The research base on the predictive validity of these alternatives is growing but remains limited. For example, some studies suggest that performance assessments like the edTPA can predict teacher effectiveness, while others raise concerns about the reliability of scores.¹²⁹

States considering alternatives to traditional licensure tests should pilot them first — a critical step for improving design and evaluating technical quality. For example, Massachusetts and Mississippi have piloted performance-based certification models that draw from student teaching experiences, professional evaluations, or classroom artifacts. These approaches show promise when implemented within strong preparation programs with robust support and oversight.¹³⁰ However, they require careful implementation. State policymakers should set clear guidelines for what constitutes a viable alternative, identify which measures can be standardized across institutions, and invest in longitudinal research to evaluate their predictive validity. Any licensure replacement should be tested for bias and held to similar standards as current exams in terms of validity, reliability, fairness, and efficiency.

Subsidize costs for licensure exams to support teachers in earning certification.

Many teachers who have entered the workforce under an emergency waiver or similar policy that delays initial licensure testing are still required to pass licensure exams. Most often, temporarily licensed teachers are given a certain amount of time to pass their state's basic skills test, core competency test, or both, to obtain a standard state license to teach. States should consider subsidizing or assuming the costs of these exams to make them more accessible to a wider range of prospective teachers. With Praxis exams costing upward of \$200 per attempt with a pass rate lower than 50%, plenty of aspiring teachers are required to take

the assessment multiple times before passing. If states require both a basic skills and a subject matter exam, policymakers can identify which exam is associated with the greatest drop-offs and invest resources there.

Several states have opted to reduce or waive licensure test fees for prospective teachers, such as Arizona, Connecticut, Florida, Indiana, Massachusetts, New Jersey, North Carolina, Oregon, and Virginia.¹³¹ Although research on fee waiver policies is sparse, some evidence suggests they can have a sizable effect on the supply of teachers. When Florida waived licensure test fees in 2020 at the onset of the pandemic, the state saw a dramatic increase in the number of exam registrations when compared with time periods with test fees in place. When Florida's test fees were waived, 56,000 examinees registered for 110,000 tests within 49 days, forcing the fee waiver program to end early (it was initially set to run for 120 days). During the same 49 days two years later in 2022, when test fees were reinstated, only 13,536 examinees registered for 16,500 tests.¹³² Initiatives like these show that states can play a meaningful role in removing test fee barriers for prospective teachers and those holding emergency licenses.

Support emergency-licensed teachers with targeted mentorship and learning opportunities.

Early research on emergency license holders and past research on alternatively certified teachers show that these new educators are more likely to be placed in high-need schools. While the transition to becoming a teacher of record is difficult for all individuals, it may be the most challenging for those with less formal training and fewer networks of support to draw on. State policymakers should consider instituting or strengthening existing induction and mentorship programs to support all new teachers, with a specific focus on temporary licensed teachers serving in high-need schools.

Structured induction and mentorship programs can help retain teachers.¹³³ However, not all mentorship programs are the same. The most effective programs ensure new teachers are matched with veteran teachers in the same subject and modify school schedules to give mentors and mentees adequate time to collaborate.¹³⁴ These types of induction programs may need to be further modified for emergency licensees, who may arrive at high-need schools without finishing their teaching training or having any student teaching experience.

Align hiring, layoff, and evaluation policies to support licensure reforms.

Teacher licensure testing does not occur in a vacuum. Several related policies can either reinforce or undercut the potential that reforming licensure testing requirements holds. First, one likely outcome of delaying or waiving licensure testing requirements is an increase in the supply of prospective teachers, at least in some grade levels and subject areas. When states loosen licensure testing requirements through emergency licenses or other means, districts and schools incur more responsibility to screen prospective teachers; whether they do that screening is an open question. District and school leaders must have effective hiring practices that can predict who will and will not be effective teachers, such as requiring prospective hires to teach a sample lesson. Hiring practices that fail to differentiate based on effectiveness risk undermining reforms to licensure testing requirements.

Second, teacher layoffs are looming as Elementary and Secondary School Emergency Relief funds expire,¹³⁵ and as public K-12 districts continue to experience declining enrollments in many places.¹³⁶ Policies such as “last in, first out” may result in many of these new and diverse teachers, including those who enter under temporary or emergency licenses, having to leave the profession. State and district leaders should consider reassessing their workforce reduction policies to ensure the most effective teachers are retained and developed — as opposed to relying on crude, tenure-based metrics.

Related research from TNTP shows that flawed performance evaluation systems and tenure policies make it difficult for districts and schools to make meaningful distinctions among teachers when it comes to performance.¹³⁷ Reassessing workforce reduction policies must occur hand in hand with refining teacher evaluation systems to ensure that valid, reliable, and fair measures of performance determine whether someone stays or leaves the classroom. Absent a deeper reform of these systems, bold changes to licensure policy may fail to deliver their intended benefits.

Unlike during the COVID era — when waivers were issued rapidly in response to crises — states now have the opportunity to approach licensure reform with more data, better research, and a clear understanding of the potential trade-offs they will encounter.

Conclusion

The near-universal use of emergency licenses during the COVID-19 pandemic has provided researchers with a rare opportunity to examine long-standing assumptions about teacher licensure testing — and a growing number of states are opting to make permanent changes by eliminating, loosening, or modifying their licensure test requirements. In doing so, these states have set in motion substantial shifts in how teachers are recruited, trained, licensed, and placed into classrooms. Evidence from states like Massachusetts, Michigan, and New Jersey shows that altering licensure testing requirements can expand access to the profession and increase teacher diversity. At the same time, these policies also influence where teachers are placed, how long they stay, and how well they perform — highlighting important trade-offs and the need for thoughtful policy design.

The research reviewed in this report suggests that the scope, duration, and eligibility criteria of emergency licensure policies matter. Broad, open-ended waivers may yield higher attrition and more variation in instructional quality, while short-term, targeted approaches tied to ongoing progress toward standard licenses may mitigate these risks. States that opt to waive or replace licensure tests should also implement strong systems to monitor and evaluate the effects of policy changes. Support systems for teachers are also critical given that emergency-licensed teachers are often concentrated in high-need schools.

This research also reinforces what has long been true: Licensure tests, like all other measurement tools, are imperfect predictors of teacher effectiveness. Some effective candidates are screened out, and some ineffective candidates are allowed to teach. Recognizing this trade-off, state policymakers must consider how licensure reform fits into a broader strategy that includes high-quality teacher preparation, strong hiring systems, and meaningful evaluation and retention practices.

Most states experimented with altering teacher licensure testing requirements during the pandemic, and many have continued to experiment with teacher licensure policy. Others are considering similar reforms. Whether those changes will improve or weaken the teacher workforce depends on what states do next. If states commit to evidence-based implementation, careful monitoring, and continuous improvement, licensure reforms could unlock new ways to build a more effective, diverse, and sustainable teacher pipeline. ✦



SERIES OVERVIEW

[The Pandemic Learning Project](#) examines how COVID-era research can support local and state leaders in navigating K-12 policy challenges now and into the future. The three reports in this series provide a high-level overview of different approaches that states and districts have taken in each policy area, explore the trade-offs and contextual factors influencing those approaches, and highlight key considerations that can strengthen policy effectiveness.

Endnotes

- 1 Michael DeArmond et al., *COVID's Under-the-Radar Experiment with Teacher Licensure* (CALDER, 2023), <https://caldercenter.org/sites/default/files/2024-11/CALDER%20Policy%20Brief%2033-0323.pdf>.
- 2 Abigail Swisher, "Setting Sights Lower: States Back Away from Elementary Teacher Licensure Tests," *National Council on Teacher Quality*, July 28, 2022, <https://www.nctq.org/research-insights/setting-sights-lower-states-back-away-from-elementary-teacher-licensure-tests/>.
- 3 Ben Backes et al., *Four Years of Pandemic-Era Emergency Licenses: Retention and Effectiveness of Emergency-Licensed Massachusetts Teachers over Time* (CALDER, 2025), <https://caldercenter.org/sites/default/files/2024-11/CALDER%20WP%20299-0424.pdf>.
- 4 Matthew Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness during the COVID-19 Pandemic* (CALDER, 2025), https://caldercenter.org/sites/default/files/2025-04/CALDER-WP-316-0425_0.pdf.
- 5 Benjamin Backes and Dan Goldhaber, "The Relationship Between Pandemic-Era Teacher Licensure Waivers and Teacher Demographics, Retention, and Effectiveness in New Jersey," Working Paper No. 286-0623 (CALDER, June 2023), <https://caldercenter.org/sites/default/files/2024-11/CALDER%20WP%20286-0623.pdf>.
- 6 Matthew A. Kraft and Melissa Arnold Lyon, "The Rise and Fall of the Teaching Profession: Prestige, Interest, Preparation, and Satisfaction over the Last Half Century," Working Paper 22-679 (Annenberg Institute, Brown University, April 2024), <https://doi.org/10.26300/7b1a-vk92>.
- 7 Kaitlin Pennington McVey and Justin Trinidad, *Nuance in the Noise: The Complex Reality of Teacher Shortages* (Bellwether, 2019), <https://bellwether.org/publications/nuance-noise-complex-reality-teacher-shortages/>.
- 8 "Characteristics of Public School Teachers," National Center for Education Statistics, updated May 2023, <https://nces.ed.gov/programs/coe/indicator/clr/public-school-teachers>.
- 9 See, for example, David Blazar, "Why Black Teachers Matter," *Educational Researcher* 53, no. 8 (2024): 450–63, https://edworkingpapers.com/sites/default/files/Blazar_Why%20Black%20Teachers%20Matter_Final.pdf.
- 10 Hannah Putman and Kate Walsh, *A Fair Chance: Simple Steps to Strengthen and Diversify the Teacher Workforce* (National Council on Teacher Quality, 2019), https://www.nctq.org/dmsView/A_Fair_Chance.
- 11 Swisher, "Setting Sights Lower."
- 12 Iowa Legislative Services Agency, 2022 Summary of Legislation Iowa General Assembly Regular Session, (see House File 2081), July 2022, <https://www.legis.iowa.gov/docs/publications/SOL/1293571.pdf>; Grant Gerlock, "End of Test Requirement Lifts Hurdle for Most, but Not All, Dual-Language Teachers," *Iowa Public Radio*, March 31, 2022, <https://www.iowapublicradio.org/education/2022-06-21/end-of-test-requirement-lifts-hurdle-for-most-but-not-all-dual-language-teachers>.
- 13 Iowa Department of Education, "Foundations of Reading Test," <https://educate.iowa.gov/pk-12/educator-quality/practitioner-preparation/foundations-reading-test>; Iowa Legislative Services Agency, 2024 Summary of Legislation Iowa General Assembly Regular Session, (see House File 2618), July 2024, <https://www.legis.iowa.gov/docs/publications/SOL/1456417.pdf>.
- 14 Delaware General Assembly, House Bill 441, August 4, 2022, <https://legis.delaware.gov/BillDetail?LegislationId=109577>.
- 15 Swisher, "Setting Sights Lower."
- 16 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 17 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 18 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 19 *Alternative Routes to Certification: State-by-State Analysis* (National Education Association, 2020), <https://www.nea.org/sites/default/files/2021-04/Alternative%20Paths%20Report-Final%20Apr2020.pdf>.
- 20 *Preparing and Credentialing the Nation's Teachers: The Secretary's 11th Report on the Teacher Workforce* (US Department of Education, 2023), <https://title2.ed.gov/Public/TitleIIReport23.pdf>, authors' calculations.
- 21 *Alternative Routes to Certification*.
- 22 Hannah Putman and Kate Walsh, *Teacher Preparation Policy* (National Council on Teacher, 2021), <https://www.nctq.org/publications/State-of-the-States-2021:-Teacher-Preparation-Policy>.
- 23 *Technical Manual for the Praxis® Tests and Related Assessments* (ETS, 2024), <https://praxis.ets.org/on/demandware.static/-/Library-Sites-ets-praxislibrary/default/dwce482f52/pdfs/technical-manual.pdf>.
- 24 Putman and Walsh, *Teacher Preparation Policy*; "Table 7.1. Test Requirements for Initial Certification of Elementary and Secondary Teachers, by Type of Test and State: 2017 and 2018," State Education Practices, National Center for Education Statistics, updated May 21, 2018, https://nces.ed.gov/programs/statereform/tab7_1.asp.
- 25 *Technical Manual for the Praxis® Tests*.
- 26 "Table 7.1. Test Requirements for Initial Certification."
- 27 Dan Goldhaber, *Teacher Licensure* (Live Handbook Education Policy Research, Association for Education Finance and Policy, 2025), <https://livehandbook.org/k-12-education/workforce-teachers/teacher-licensure/>.
- 28 Ethan L. Hutt et al., "Diffusion in a Vacuum: edTPA, Legitimacy, and the Rhetoric of Teacher Professionalization," *Teaching and Teacher Education* 69 (2018): 52–61, https://ehutt.web.unc.edu/wp-content/uploads/sites/20826/2019/07/Hutt_diffusion-in-a-vacuum_edtpa.pdf; DeArmond et al., *COVID's Under-the-Radar Experiment*.
- 29 "PPAT® Assessment: Scores" ETS, <https://www.ets.org/ppat/test-takers/scores/understand-scores.html>; Susan Kemper Patrick, *How Preparation Predicts Teaching Performance Assessment Results in California* (Learning Policy Institute, 2024), https://learningpolicyinstitute.org/media/4289/download?inline&file=CA_Preparation_TPA_Results_REPORT.pdf.
- 30 Linda Darling-Hammond et al., "Teacher Preparation and Teacher Learning: A Changing Policy Landscape," in *Handbook of Education Policy Research* (Routledge, 2012): 613–36; National Research Council et al., *Testing Teacher Candidates: The Role of Licensure Tests in Improving Teacher Quality* (National Academies Press, 2001), <https://doi.org/10.17226/10090>.

- 31 McVey and Trinidad, *Nuance in the Noise*.
- 32 David Hurst et al., *Overview and Inventory of State Education Reforms: 1990 to 2000* (National Center for Education Statistics, 2003), <https://nces.ed.gov/pubs2003/2003020.pdf>; *Prevalence of Teachers without Full State Certification and Variation across Schools and States* (U.S. Department of Education, 2016), <https://www2.ed.gov/rschstat/eval/teaching/teachers-without-certification/report.pdf>.
- 33 *Preparing and Credentialing the Nation's Teachers: The Secretary's 10th Report on Teacher Quality* (U.S. Department of Education, 2016), <https://title2.ed.gov/Public/TitleIIReport16.pdf>.
- 34 Tiffany S. Tan et al., *Uncertified Teachers and Teacher Vacancies by State* (Learning Policy Institute, 2024), https://learningpolicyinstitute.org/media/4412/download?inline&file=State_Vacancy_2024_RESOURCE.pdf, authors' calculations. Note, these estimates are inclusive of the states where data could reasonably be disaggregated by the emergency license holders.
- 35 Examples from Texas illustrate the difference between uncertified and emergency licensee holders: *Emergency Permits Guidebook: A Guide to Emergency Permits for Districts and Charter Schools* (Texas Education Agency, 2024), <https://tea.texas.gov/texas-educators/certification/emergency-permit-guide.pdf>; Dina Ghazzawi et al., *Uncertified Teacher Rates 2019-20 through 2024-25* (Texas Education Agency, 2025), <https://tea.texas.gov/reports-and-data/educator-data/uncertified-teachers-historic-2024-2025.pdf>.
- 36 Tan et al., *Uncertified Teachers and Teacher Vacancies*, authors' calculations.
- 37 DeArmond et al., *COVID's Under-the-Radar Experiment*.
- 38 *What Matters Most: Teaching for America's Future* (National Commission on Teaching and America's Future, 1996), 67, <https://files.eric.ed.gov/fulltext/ED395931.pdf>.
- 39 Darling-Hammond et al., *Teacher Preparation and Teacher Learning; What Matters Most*.
- 40 Hannah Putman and Kate Walsh, *Driven by Data: Using Licensure Tests to Build a Strong, Diverse Teacher Workforce* (National Council on Teacher Quality, 2021), <https://www.nctq.org/research-insights/driven-by-data-using-licensure-tests-to-build-a-strong-diverse-teacher-workforce/>.
- 41 Ibid., Appendix B, https://www.nctq.org/dmsView/NCTQ_Driven_by_Data_Appendix_B.
- 42 Goldhaber, *Teacher Licensure*.
- 43 Victoria Van Cleef, "Licensure Tests as Barriers to the Profession," *State Education Standard* 22, no. 3 (2022): 24–27, 62, <https://eric.ed.gov/?id=EJ1357209>.
- 44 For example, see Richard Buddin and Gema Zamarro, "Teacher Qualifications and Student Achievement in Urban Elementary Schools," *Journal of Urban Economics* 66, no. 2 (2009): 103–115, <https://doi.org/10.1016/j.jue.2009.05.001>.
- 45 Van Cleef, "Licensure Tests as Barriers."
- 46 Goldhaber, *Teacher Licensure*.
- 47 For example, see Edward H. Haertel, "Chapter 1: New Forms of Teacher Assessment," *Review of Research in Education* 17, no. 1 (1991): 3–29, <https://journals.sagepub.com/doi/abs/10.3102/0091732x017001003>.
- 48 Swisher, "Setting Sights Lower."
- 49 Heather Peske, "We Wouldn't Lower Standards for Pilot Licenses—So Why Teachers?" *National Council on Teacher Quality*, July 28, 2022, <https://www.nctq.org/research-insights/we-wouldnt-lower-standards-for-pilot-licenses-so-why-teachers/>.
- 50 Putman and Walsh, *A Fair Chance*.
- 51 Peske, "We Wouldn't Lower Standards for Pilot Licenses."
- 52 Jason Greenberg Motamedi et al., *Potential Testing Barriers for Teacher Candidates of Color* (REL Northwest, 2018), <https://ies.ed.gov/sites/default/files/migrated/rel/regions/northwest/pdf/potential-testing-barriers.pdf>.
- 53 Van Cleef, "Licensure Tests as Barriers."
- 54 "The Praxis® Tests Information Bulletin: 2024-25," ETS, <https://praxis.ets.org/on/demandware.static/-/Library-Sites-ets-praxisLibrary/default/dwd1ed07a0/pdfs/praxis-information-bulletin.pdf>.
- 55 Putman and Walsh, *Driven by Data*.
- 56 "Educator Pay Data 2025," National Education Association, updated April 29, 2025, <https://www.nea.org/resource-library/educator-pay-and-student-spending-how-does-your-state-rank>.
- 57 Mary Ellen Flannery, "The Depth of Educators' College Debt," *NEA Today*, July 27, 2021, <https://www.nea.org/nea-today/all-news-articles/depth-educators-college-debt>.
- 58 Putman and Walsh, *Driven by Data*.
- 59 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 60 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 61 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 62 DeArmond et al., *COVID's Under-the-Radar Experiment*.
- 63 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 64 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 65 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 66 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 67 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 68 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 69 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 70 Michael Marder et al., *Beyond the Tipping Point: Rise of Uncertified Teachers in Texas* (College of Education, University of Texas at Austin, 2024), https://issuu.com/texaseducation/docs/ttp-riseofuncertifiedteachers_report_design_17x11?utm_source=digital&utm_medium=issuu&utm_campaign=BTTP+report+F24/.

- 71 Michael Marder, *The Rise of Uncertified Teachers in Texas: Bad for Kids, Bad for Business* (UTeach Institute, University of Texas at Austin, 2024), <https://institute.uteach.utexas.edu/sites/default/files/documents/Uncertified-Teachers-Texas-Policy-Brief-2024.pdf>.
- 72 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 73 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 74 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 75 Ibid.; Backes et al., *Four Years of Pandemic-Era Emergency Licenses*; Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 76 "Characteristics of Public School Teachers."
- 77 Ibid.
- 78 For example, see Constance A. Lindsay and Cassandra M. D. Hart, "Exposure to Same-Race Teachers and Student Disciplinary Outcomes for Black Students in North Carolina," *Educational Evaluation and Policy Analysis* 39, no. 3 (2017): 485–510, <https://doi.org/10.3102/0162373717693109>; Michael Gottfried et al., "Do High School Students with a Same-Race Teacher Attend Class More Often?" *Educational Evaluation and Policy Analysis* 44, no. 1 (2022): 149–69, <https://doi.org/10.3102/01623737211032241>; Seth Gershenson et al., "The Long-Run Impacts of Same-Race Teachers," *American Economic Journal: Economic Policy* 14, no. 4 (2022): 300–342, <https://doi.org/10.1257/pol.20190573>.
- 79 For a brief overview on cultural congruence and role model theories, see NaYoung Hwang et al., "Racialized Early Grade (Mis) Behavior: The Links between Same-Race/Ethnicity Teachers and Discipline in Elementary School," *AERA Open* 10 (2024), <https://doi.org/10.1177/23328584231222185>.
- 80 For a brief overview of the high expectation theory, see Gottfried et al., "Do High School Students with a Same-Race Teacher Attend Class More Often?"
- 81 See, for example, Blazar, "Why Black Teachers Matter."
- 82 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 83 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers," 32, Table 3.
- 84 "Demographics: Enrollment," NJ School Performance Report, <https://rc.doe.state.nj.us/2021-2022/state/detail/demographics?lang=EN>.
- 85 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*, 3.
- 86 Hannah Putman, "Reducing Certification Requirements and Reviewing the Effects: Texas Tracks the Data on the State's Temporary Teacher Waiver Policy," *National Council on Teacher Quality*, October 27, 2022, <https://www.nctq.org/blog/Reducing-certification-requirements-and-reviewing-the-effects-texas-tracks-the-data-on-the-states-temporary-teacher-waiver-policy>.
- 87 Dan Goldhaber et al., "Uneven Playing Field? Assessing the Teacher Quality Gap Between Advantaged and Disadvantaged Students," *Educational Researcher* 44, no. 5 (2015): 293–307, <https://doi.org/10.3102/0013189X15592622>.
- 88 Frank Adamson and Linda Darling-Hammond, "Funding Disparities and the Inequitable Distribution of Teachers: Evaluating Sources and Solutions," *Education Policy Analysis Archives* 20 (2012): 37, <https://doi.org/10.14507/epaa.v20n37.2012>.
- 89 Jessica Cardichon et al., *Inequitable Opportunity to Learn: Student Access to Certified and Experienced Teachers* (Learning Policy Institute, 2020), https://learningpolicyinstitute.org/media/392/download?inline&file=CRDC_Teacher_Access_REPORT.pdf.
- 90 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers," 15.
- 91 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 92 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 93 J. Jacob Kirksey, *Amid Rising Number of Uncertified Teachers, Previous Classroom Experience Proves Vital in Texas* (College of Education, Texas Tech University, 2024), <https://ttu-ir.tdl.org/items/e8d785a0-2be3-4942-bb43-d71705fb2d4f>.
- 94 Marder et al., *Beyond the Tipping Point*.
- 95 Ibid.
- 96 Putman and Walsh, *Driven by Data*, Appendix B, https://www.nctq.org/dmsView/NCTQ_Driven_by_Data_Appendix_B.
- 97 See, for example, Dan Goldhaber and Michael Hansen, "Race, Gender, and Teacher Testing: How Informative a Tool Is Teacher Licensure Testing?" *American Educational Research Journal* 47, no. 1 (2010): 218–51; Dan Goldhaber, "Everyone's Doing It, but What Does Teacher Testing Tell Us about Teacher Effectiveness?" *Journal of Human Resources* 42, no. 4 (2007): 765–94.
- 98 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 99 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 100 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*, 19–20.
- 101 Marder et al., *Beyond the Tipping Point*.
- 102 Kirksey, *Amid Rising Number of Uncertified Teachers*; Marder et al., *Beyond the Tipping Point*.
- 103 Ibid.
- 104 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 105 Backes and Goldhaber, "Relationship Between Pandemic-Era Teacher Licensure Waivers."
- 106 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 107 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 108 See footnote 5 in Anne Podolsky et al., *Solving the Teacher Shortage: How to Attract and Retain Excellent Educators* (Learning Policy Institute, 2016), https://learningpolicyinstitute.org/media/180/download?inline&file=Solving_Teacher_Shortage_Attract_Retain_Educators_REPORT.pdf.

- 109 Desiree Carver-Thomas and Linda Darling-Hammond, *Teacher Turnover: Why It Matters and What We Can Do about It* (Learning Policy Institute, 2017), https://learningpolicyinstitute.org/sites/default/files/product-files/Teacher_Turnover_REPORT.pdf.
- 110 Lucinda Gray and Soheyla Taie, *Public School Teacher Attrition and Mobility in the First Five Years: Results from the First Through Fifth Waves of the 2007–08 Beginning Teacher Longitudinal Study* (National Center for Education Statistics, 2015), <https://nces.ed.gov/pubs2015/2015337.pdf>.
- 111 Carver-Thomas and Darling-Hammond, *Teacher Turnover*.
- 112 Podolsky et al., *Solving the Teacher Shortage*; Soheyla Taie et al., *Teacher Attrition and Mobility Results from the 2021–22 Teacher Follow-Up Survey to the National Teacher and Principal Survey* (National Center for Education Statistics, 2023), <https://nces.ed.gov/pubs2024/2024039M.pdf>.
- 113 Backes and Goldhaber, “Relationship Between Pandemic-Era Teacher Licensure Waivers.”
- 114 Marder et al., *Beyond the Tipping Point*.
- 115 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 116 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 117 Swisher, “Setting Sights Lower.”
- 118 Patricia Saenz-Armstrong and Shannon Holston, *State Reporting of Teacher Supply and Demand Data* (National Center on Teacher Quality, 2021), https://www.nctq.org/wp-content/uploads/2025/03/NCTQ_State_of_the_States_2021_Supply_and_Demand_902068_edited.pdf.
- 119 Shannon Holston, “From Patchwork to Precision: Strengthening Teacher Data Systems,” *National Center on Teacher Quality*, March 11, 2025, <https://www.nctq.org/research-insights/from-patchwork-to-precision-strengthening-teacher-data-systems/>.
- 120 Saroja R. Warner and Eric Duncan, *A Vision and Guidance for a Diverse and Learner-Ready Teacher Workforce* (Council of Chief State School Officers, 2018), <https://www.isbe.net/Documents/Vision-Guidance-Diverse-Learner-Ready-Teacher-Workforce.pdf>.
- 121 Andrew J. Rotherham and Thomas Gold, *Window of Opportunity: How States and Localities Can Use Federal Rescue Plan Dollars to Diversify Their Teacher Workforce* (Bellwether, 2021), <https://eric.ed.gov/?id=ED616893>.
- 122 Marder et al., *Beyond the Tipping Point*.
- 123 Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 124 Backes and Goldhaber, “Relationship Between Pandemic-Era Teacher Licensure Waivers”; Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 125 Backes et al., *Four Years of Pandemic-Era Emergency Licenses*.
- 126 Backes and Goldhaber, “Relationship Between Pandemic-Era Teacher Licensure Waivers.”
- 127 Backes and Goldhaber, “Relationship Between Pandemic-Era Teacher Licensure Waivers”; Guzman et al., *Michigan Teacher Licensure, Retention, and Effectiveness*.
- 128 Swisher, “Setting Sights Lower.”
- 129 Goldhaber, *Teacher Licensure*.
- 130 Van Cleef, “Licensure Tests as Barriers.”
- 131 Hannah Putman, “How States Are Making Licensure Tests Free to Aspiring Teachers,” *National Council on Teacher Quality*, July 20, 2022, <https://www.nctq.org/blog/How-states-are-making-licensure-tests-free-to-aspiring-teachers>.
- 132 Ibid.
- 133 Daniel Espinoza et al., *Taking the Long View: State Efforts to Solve Teacher Shortages by Strengthening the Profession* (Learning Policy Institute, 2018), https://learningpolicyinstitute.org/media/268/download?inline&file=Long_View_REPORT.pdf; Richard M. Ingersoll and Thomas M. Smith, “Do Teacher Induction and Mentoring Matter?” *NASSP Bulletin* 88, no. 638 (2004): 28–40, <https://doi.org/10.1177/019263650408863803>.
- 134 Ibid.
- 135 Patricia Saenz-Armstrong, “Teacher Layoffs May Be Coming. How Do Districts Decide Who to Let Go?” *National Council on Teacher Quality*, February 9, 2023, <https://www.nctq.org/blog/Teacher-layoffs-may-be-coming-How-do-districts-decide-who-to-let-go>.
- 136 Krista Kaput et al., *How Student Enrollment Declines Are Affecting Education Budgets, Explained in 10 Figures* (Bellwether, 2024), <https://bellwether.org/publications/How-Student-Enrollment-Declines-are-Affecting-Education-Budgets/?activeTab=1>.
- 137 Daniel Weisberg et al., *The Widget Effect: Our National Failure to Acknowledge and Act on Differences in Teacher Effectiveness*, 2nd ed. (New Teacher Project, 2009), <https://eric.ed.gov/?id=ED515656>.

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About Bellwether

Bellwether is a national nonprofit that exists to transform education to ensure systemically marginalized young people achieve outcomes that lead to fulfilling lives and flourishing communities. Founded in 2010, we work hand in hand with education leaders and organizations to accelerate their impact, inform and influence policy and program design, and share what we learn along the way. For more, visit bellwether.org.

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CALDER is a joint project of the American Institutes for Research and scholars at 12 universities. CALDER's researchers and affiliated scholars are national experts on a range of critical issues — including educator labor markets, teacher education, and academic interventions. With data-sharing agreements in over 10 states, CALDER leverages statewide longitudinal data systems to develop systematic, quantitative evidence on how teachers and schools impact student learning and success. For more about CALDER and to read their latest publications, visit caldercenter.org.

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