Teacher Supply & Demand State Data Guide

A Resource for Leaders & Advocates

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National Council on Teacher Quality

Teacher Supply & Demand State Data Guide

As states and districts work to help students recover from learning losses suffered during the pandemic, concerns over teacher shortages continue to plague local leaders. To understand the teacher labor market and help address teacher staffing challenges, states need specific information about what each district and school is experiencing. Unfortunately, too often the poor quality of data about the teacher labor market prevents policymakers and education leaders at the state and local levels from properly diagnosing and addressing the specific staffing needs of districts and schools within their state. **With the right data, states and districts can develop tailored solutions to their own teacher staffing challenges not just before they occur, but precisely where they occur — whether that's in certain subjects, grades, or schools.**

To help your state gain a better understanding of the teacher labor market, NCTQ identified key questions, along with the key data elements needed to answer these questions, that are critical to understanding your state's local teacher workforce needs.

The key questions are divided into four categories: **Teacher Shortages**, **Health of the Teacher Pipeline**, **Teacher Retention and Mobility**, and **Equitable Distribution of the Teacher Workforce**. The smallest disaggregation level we focus on is school-level data, as it is most helpful in understanding true local labor market patterns. Recommendations for improving your state's data collection and how to use the data are also included below.

Only by improving labor market information, both in terms of quality and transparency, can we begin to align the supply of teachers with the demand, informing important goals concerning the hiring, assignment, retention, and diversity of teachers.

Teacher Shortages

Teacher Shortages	Data needed	% of states that have this data at the smallest disaggregation level
What is the size of your state's teacher shortage?	Number of unfilled positions	14%
	Number of not fully credentialed teachers	81%
	Number of teachers teaching out of field	81%
	Number of positions filled with long-term substitutes	19%
Which subject areas present the largest teaching vacancies?	Number of unfilled positions by subject area	12%
	Teacher attrition by subject area	53%
	Newly created positions by subject area	9%
How do teacher shortages differ geographically?	Number of unfilled positions by school	14%
	Number of not fully credentialed teachers by school	81%
	Number of teachers teaching out of field by school	81%
How does your state fill openings?	Number of positions filled with in-field, fully credentialed new hires	33%
	Number of positions filled with teachers teaching out of field	37%

Teacher Shortages	Data needed	% of states that have this data at the smallest disaggregation level
How does your state fill openings?	Number of positions filled with not fully credentialed teachers	30%
	Number of positions filled with long-term substitutes	19%

Recommendations for State Leaders

States ought to consider gathering data on teaching positions and not just on teachers. Knowing how many new positions exist and how they're filled will give states a better understanding of their need for teachers and insight on which of those positions are more likely to be filled in sub-optimal ways.

A teacher shortage is not only measured by how many teachers a school or district is missing, but also how many classes are being taught by those not properly certified or teaching outside of their certification field. Gathering data on the number of not-fully certified teachers or teachers teaching out of field will give states an expanded idea of their shortage by understanding the extent of their inadequate staffing.

Teacher staffing challenges are not uniform across subject areas. Knowing the breakdown of the teacher workforce by subject area is key to improving states' understanding of those differences in staffing challenges and states' ability to craft policies to address the particular needs of a school or district.

Teacher attrition is an important piece of understanding the specifics of staffing challenges. Not all teachers are leaving at the same rate. The more nuanced states' attrition data, the better state leaders can elucidate who is leaving and why, and begin to address it with more specific, intentional strategies.

Health of the Teacher Pipeline

Health of the Teacher Pipeline	Data needed	% of states that have this data at the smallest disaggregation level
Are local educator preparation programs preparing enough teachers to meet the demand?	Number of unfilled positions by subject area	12%
	Number of teachers teaching out of field by subject area	70%
	Teacher attrition by subject area	53%
	Number of newly certified teachers by subject area	65%
How does the production of teachers impact the ability to fill vacancies geographically?	Number of unfilled positions by school	14%
	Teacher attrition by school	56%
	Number of newly certified teachers by teacher preparation program (traditional)	74%
	Number of newly certified teachers by teacher preparation program (non-IHE-based, non-traditional)	91%
	Number of newly certified teachers by teacher preparation program (non-IHE-based, non-traditional)	86%
Are there differences by program in the percentage of educator preparation program completers that do not teach in the state?	Number of teachers currently teaching in a public PreK-12 school and where they were prepared	58%

Health of the Teacher Pipeline	Data needed	% of states that have this data at the smallest disaggregation level
Are there differences by program in the percentage of educator preparation program completers that do not teach in the state?	Number of teachers currently teaching in a private PreK-12 school and where they were prepared	14%
	Number of newly certified teachers and where they were prepared	74%
	Number of licensed teachers not teaching, and where they were prepared	33%

Recommendations for State Leaders

Healthy teacher production not only relies on the number of teacher candidates that successfully complete a teacher preparation program, but takes into account the need for teachers in specific areas. Information on which positions traditionally go unfilled will help states' teacher preparation programs better advise potential teacher candidates and direct their efforts towards the areas of greatest need.

Similarly, information on which teachers have the largest turnover will help states' teacher preparation programs not only direct their efforts towards the areas where teachers are needed the most, but also use that information to diagnose what they can do to better prepare and support specific types of teachers who experience high attrition.

Teacher preparation data is key to analyzing the health of the teacher pipeline, but since teacher shortages are not uniform across geographies and subject areas, in order to determine whether the teacher supply is meeting the teacher demand where needed, states need a more granular idea of where and what type of teachers are being prepared.

The portion of the teacher supply that is prepared in non-traditional programs has increased over the last decade. If applicable, states need to know to what extent these programs are contributing to their teacher supply and consider how they are monitoring these programs as well.

A connection between the teachers in the classroom and where they were prepared will allow states to not only identify where each school or district's supply comes from, but also to assess characteristics of such teachers, such as which programs produce consistently highly effective teachers, or which programs contribute to their teacher diversity.

Being able to see the teachers who did not make it into the classroom or left the classroom and where they were prepared will allow states to identify the specific leaky points in their teacher pipelines to address.

Teacher Retention and Mobility

Teacher Retention and Mobility	Data needed	% of states that have this data at the smallest disaggregation level
Are teachers in some subject areas leaving at higher rates than teachers in other subject areas?	Teacher attrition by subject area	53%
Are there differences in teacher attrition rates by race?	Teacher attrition	56%
	Teachers' race and ethnicity	74%
Are there differences in teacher attrition rates by preparation pathway?	Teacher attrition	56%
	Teachers currently teaching in a public PreK-12 school, and where they were prepared	58%
	Teachers currently teaching in a public PreK-12 school prepared in IHE-based, non-traditional programs (if applicable)	69%

Teacher Retention and Mobility	Data needed	% of states that have this data at the smallest disaggregation level
Are there differences in teacher attrition rates by preparation pathway?	Teachers currently teaching in a public PreK-12 school prepared in non-IHE-based, non-traditional programs (if applicable)	65%
Are teachers leaving the school, the district, or the profession altogether, and does that differ by subject area?	State level teacher retention by subject area	79%
	District level teacher retention by subject area	67%
	School level teacher retention by subject area	70%
Why are teachers leaving?	Reasons for teachers leaving	35%

Recommendations for State Leaders

Teacher attrition is an important piece of the teacher shortage. Not all teachers are leaving at the same rate. The more nuanced states' attrition data, the better state leaders can elucidate who is leaving and why, and begin to address it.

Teacher attrition and retention data at different administrative levels is also important for states to distinguish whether their teachers are moving to another locality or leaving the profession or the state altogether, which also informs different potential solutions.

Surveying teachers who leave and directly asking for their reasons gives states a deeper understanding of the complexity of teacher attrition and mobility. Such data could help states and local districts devise more nuanced policies to retain effective teachers.

Equitable Distribution of the Teacher Workforce

Equitable Distribution of the Teacher Workforce	Data needed	% of states that have this data at the smallest disaggregation level
Do students of color or students from low income families have equal access to effective, qualified teachers?	Number of effective teachers by school	53%
	Number of teachers teaching out of field by school	81%
	Number of not fully credentialed teachers by school	81%
	Students' race and ethnicity by school	84%
	Students' poverty level by school	79%
Do all students have access to a diverse body of teachers?	Teachers' race and ethnicity by school	74%
	Teachers' gender by school	77%
	Students' race and ethnicity by school	84%
	Students' gender by school	84%
Do the racial demographics of the teachers match the racial demographics of the students?	Teachers' race and ethnicity by school	74%
	Students' race and ethnicity by school	84%

Recommendations for State Leaders

To assess whether a state's teacher workforce is distributed equitably, states must be able to discern teacher characteristics at the school-level. Higher aggregations of these characteristics do not allow states to properly identify specific instances of inequitable distributions of their teacher workforce.

Although a high-level view of the characteristics of the student body reports the general composition of the student population in a state's public schools, it does not allow for an idea of how this student body is distributed, and therefore whether resources are being allocated equitably to this distribution. States need a more detailed idea of the characteristics of the student populations at the school-level in order to properly assess equity issues.

States Leading the Way

Collecting the data necessary to answer these questions is a first step in the direction of promoting evidence-based teacher workforce policies. Making the data available to those who can use it to make decisions is crucial to generate targeted solutions to unique problems in a local teacher labor market and ensure an effective, diverse workforce for all students.

For examples of how to make this data available and usable by stakeholders at the state-, district-, and school-level, visit:

- **Health of the Teacher Pipeline:** Colorado's interactive maps; in particular, Colorado's teacher supply map provides the state a look at the relationship between district hiring needs and the location of teacher preparation programs, by subject area.
- **Teacher Shortages:** Similarly, Colorado's Educator Shortage Dashboard provides detailed information on not only which districts are dealing with shortages geographically and by subject area, but also on if and how those positions were filled.

- **Teacher Retention and Mobility:** Illinois' interactive Supply and Demand dashboard; in particular, Illinois' Teacher Retention Data allows the state to look at teacher retention not only for each district, but also by experience level, race, and gender.
- **Equitable Distribution of the Teacher Workforce:** Delaware's Priority Equity Gaps report provides information on how highly effective teachers are distributed across the most vulnerable student populations.
- **Teacher Retention and Equitable Distribution of the Teacher Workforce:** Maryland's new Teacher Workforce report provides detailed information on teacher attrition, reasons for leaving, and vacancies, not only by district, but also by teacher characteristics, such as experience or race.