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# New Jersey's Current Teacher Workforce Landscape

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**HELDRICH CENTER**  
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# Executive Summary

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## Overview

National teacher shortages have been widely reported in recent years, having been exacerbated by the onset of the COVID-19 pandemic. School districts across the nation have struggled to find high-quality qualified teachers across all subject areas of need. New Jersey has also felt the impact of teacher shortages. In 2022, New Jersey Governor Phil Murphy established the Task Force on Public School Staff Shortages in New Jersey to tackle the wide-ranging complexities and challenges associated with teacher shortages, inclusive of how to support teachers to improve retention, bolster recruitment and training, and utilize state-funded programs to address teacher shortages.

The John J. Heldrich Center for Workforce Development at Rutgers, The State University of New Jersey was contracted by the New Jersey Department of Education (NJDOE) to investigate and shed light on the nuances of the teacher shortage in New Jersey using data from the New Jersey Education to Earnings Data System (NJEEDS). This report serves as a precursor to the statutorily required annual report ("*Teacher Workforce Report*") to the legislature that is outlined in Chapter 394 of Public Law 2021 (P.L.2021, c.394), which establishes annual data collections and reports on the teacher workforce in the state. The goal of this work is to inform the annual *Teacher Workforce Report* through a series of analyses aimed at examining the landscape of the teacher workforce, assessing teacher exits by subgroups, and comparing of certificate completers to exits. Through this work, the Heldrich Center analyses will illuminate statewide and local demographic and dynamic trends fueling the teacher shortage and offer implications from the analyses' findings for future policymaking.

## Methods

Heldrich Center researchers completed this analysis using NJEEDS data between the 2013–14 school year and the 2020–21 school year. NJDOE is a partner agency in maintaining data in NJEEDS, including the primary data source used for this study – extracts from the New Jersey Standards Measurement and Resource for Teaching (NJ SMART) data system – as well as other data comprised in the NJEEDS longitudinal system. This work focused on data that comes from the Staff Member Identification (SMID) extract, which provides detailed information on current staff members in each New Jersey local education agency (LEA). To supplement these data, the Heldrich Center included an analysis of postsecondary enrollment and completion data from the Office of the Secretary of Higher Education (OSHE). Researchers also assessed the changes in the teacher pipeline by examining the number and types of certifications or endorsements conferred by NJDOE between 2010 and 2022. Overall, this study sought to address two primary research questions related to the teacher workforce in New Jersey.

## Research Questions

1. What are the current teaching positions, by certification area, in high demand in the state?
2. What certification or geographic areas are at higher-than-average risk of teacher shortages?

Researchers addressed these research questions through four tasks: (1) analyzing the landscape of the teacher workforce; (2) assessing teacher exits, or retention, by subgroups; (3) comparing certificate completers to exits (pipeline); and (4) examining data limitations and discussing next steps. The following section briefly summarizes key findings for Tasks 1 through 3.

## Findings

There are **19** findings related to the three core components of this research: (1) teacher workforce landscape, (2) teacher retention, and (3) teacher pipeline.

### TEACHER WORKFORCE LANDSCAPE

**Finding #1:** The number of teachers in New Jersey has slightly increased over time, with an annual increase in recent years, except for the 2016–17 and 2020–21 school years.

**Finding #2:** The number of teachers for some subject areas grew in recent years, including the most common subject areas for teachers, such as elementary education, resource program, and teachers in middle grades (fifth through eighth grades), which all increased between the 2013–14 and 2020–21 school years.

**Finding #3:** There were fewer teachers in select fields between 2013–14 and 2020–21, including core subject areas, such as mathematics, English, science, world languages, and social studies.

**Finding #4:** Though the overall student-teacher ratio declined between 2013–14 and 2020–21, several subject areas experienced higher student-teacher ratios, resulting in fewer teachers to instruct more students in those subjects.

**Finding #5:** An overwhelming majority of the teacher workforce are white and/or female in New Jersey.

**Finding #6:** Teacher salaries increased in nominal terms, varied across race/ethnicity and LEA income levels, but did not keep pace with inflation.

**Finding #7:** The teacher workforce, on average, is more experienced over time, but this may indicate that LEAs in the state struggle to retain younger teachers with less experience, especially for select LEAs.

**Finding #8:** LEA poverty levels did not substantially change between 2013–14 and 2020–21, though there were fewer high-poverty LEAs and student eligibility for free or reduced-price meals somewhat declined.

## TEACHER RETENTION

**Finding #9:** The distribution of teachers who were retained, transferred, or exited did not substantially change between 2013–14 and 2020–21, with 9% of teachers either moving to another LEA or leaving teaching in New Jersey on average each year.

**Finding #10:** More likely to leave teaching, Black and/or younger teachers had the lowest retention rates compared to other groups during the period examined. In contrast, non-Hispanic white teachers and/or teachers between the ages of 50 and 59 were the most likely to remain within the same LEA.

**Finding #11:** Same LEA teacher retention rates varied by subject area, where core subjects like world languages, science, English, and mathematics were below average and elementary, social studies, and health and physical education were above average.

**Finding #12:** High-poverty LEAs had much lower year-to-year teacher retention when compared to LEAs of other poverty levels. Low-poverty LEAs generally exhibited the highest level of teacher retention.

**Finding #13:** The most common reasons given when a teacher exited their position were retirement, accepted employment in a non-teaching occupation, or teaching in another LEA in New Jersey. The number of teachers that left the profession to accept a non-teaching job nearly doubled from 2013–14 to 2020–21.

## TEACHER PIPELINE

**Finding #14:** Statewide total certifications and endorsements peaked in 2014 and have declined since then, including overall endorsements and those specific to teachers. Endorsements for non-instructional positions (i.e., administrators, non-instructional staff, etc.) has increased and peaked in 2022.

**Finding #15:** Fewer endorsements have been issued over time across nearly every subject area. Further, it appears the downward trends began before the COVID-19 pandemic and have not shown a significant recovery to pre-pandemic levels.

**Finding #16:** Consistent with national studies and the New Jersey-specific findings in this report, the declining number of endorsements each year point to constraints in filling positions generally, but especially in key high-demand subjects.

**Finding #17:** Most students seeking a Bachelor's degree in education complete their degree, but fewer than half graduate with an education degree.

**Finding #18:** Black and Hispanic students seeking Bachelor's degrees in education are more likely to complete their degree in another major or not complete their degree at all.

**Finding #19:** Significantly fewer students entering New Jersey colleges sought and completed a Bachelor's degree in education, in both the total number of students and the share of the overall student population, since 2012–13.

## Key Takeaways

This report distinguishes areas at higher-than-average risk of teacher shortages and identifies several key takeaways that can inform the annual *Teacher Workforce Report* and evidence-based policymaking to address staffing challenges related to teacher shortages in New Jersey. Summarized below are seven key takeaways.

- ▶ Since the number of teachers in New Jersey has increased and the statewide student enrollment has declined, data revealed that the student-teacher ratio declined slightly between the 2013–14 and 2020–21 school years. However, broken down by subject area, there were increases to the student-teacher ratio, specifically in high-demand subject areas, such as mathematics, science, and world languages.
- ▶ Between the 2013–14 and 2020–21 school years, New Jersey experienced significant declines in the number of teachers working in the profession across 10 subject areas, including core subjects, such as mathematics, English, science, world languages, and social studies.
- ▶ The distribution of teachers that remained in an LEA year to year, transferred to a different LEA, or those that exited the New Jersey public school system did not change substantially between 2013–14 and 2020–21. On average, about 9% of teachers either moved to a different LEA or exited from public schools each year.
- ▶ In examining teacher retention, researchers observed substantial variation in teacher retention when broken down by teacher demographic characteristics, subject area, and LEA poverty level.
- ▶ NJDOE has issued fewer endorsements in recent years, across nearly every subject area.
- ▶ New Jersey has experienced a significant decline in the number of individuals seeking and completing a Bachelor's degree in education.
- ▶ Overall, the COVID-19 pandemic only had a small impact on the teacher workforce in New Jersey.

From these research findings, the Heldrich Center offers suggested next steps to expand understanding of the dynamics fueling the teacher shortage in New Jersey. To effectively address teacher shortages, more information is needed on teacher vacancies and teacher exits. The state will need to be deliberate and systemic in collecting data to inform the teacher workforce shortage in New Jersey. At present, NJDOE's data collection that includes inquiries about reasons for teacher exits is limited and includes an option for non-response. These data are critical to understanding the details underpinning teacher retention concerns and teacher exits. Moreover, NJDOE could bolster data collection around teacher vacancy data by district and subject area to then be able to deliberately address the vacancy trends and/or patterns within and across school districts in New Jersey. These potential next steps would create a stronger data-driven foundation from which researchers could continue to evaluate the issue of teacher shortages in New Jersey.

# Introduction

Teachers play a foundational role in the development of youth by equipping their students with the tools, knowledge, and environment to learn, grow, and flourish in their studies. Besides academic instruction, they also foster essential life skills such as critical thinking, effective communication, and problem-solving. Their guidance enables students to gain expertise in specific subjects and gain a broader comprehension of the world around them. In recent times, the issue of teacher shortages across the nation has garnered significant attention, featuring striking headlines pointing to the dire personnel deficits some school districts are facing in their classrooms. While more recently spotlighted in the media, teacher shortages are not a new phenomenon nor are their impacts equal or well-understood between school districts across different states. As such, the precise challenges of teacher shortages vary by district, and more broadly, on a state-by-state basis. An urban school district may struggle to find mathematics or special education teachers, and rural school districts may not find teachers at all.

The onset of the COVID-19 pandemic in 2020 brought into sharp focus the exceptional dedication and adaptability of teachers around the world. The swift and innovative transition to virtual learning environments showcased their unyielding commitment to education. Teachers made heroic efforts to provide their students with uninterrupted and high-quality learning experiences despite the uncertainties of the time marked by widespread stress and illness. Their efforts stand as a testament to the resilience and ingenuity of the teaching profession. Moreover, the COVID-19 pandemic brought to the forefront a series of complex challenges faced by teachers, casting a spotlight on issues such as compensation, a pervasive lack of respect for the profession, and a burgeoning imbalance between the supply and demand of public school teachers. As a result, a convincing story has taken shape regarding the teaching profession, focusing particularly on the significant obstacles that impede entry into the field, as well as the ongoing challenges of retaining qualified teachers in areas where they are most needed.

The National Center for Education Statistics' (NCES) National Teacher and Principal Survey confirms the teacher shortage for specific subject areas at the national level.<sup>1</sup> According to the survey, public schools had difficulty filling positions or were unable to fill teaching vacancies in foreign languages (42%), special education (40%), physical sciences (37%), English-as-a-Second-Language/bilingual education (32%), mathematics (32%), biology/life sciences (31%), computer science (31%), and career and technical education (31%) (NCES, 2022a). This survey more specifically

**"Teachers are the backbone of our democracy – fostering curiosity and creativity, building skillful individuals, and strengthening informed citizens. A great teacher in every classroom is one of the most important resources we can provide students."**

**–U.S. Department of Education (n.d.-b)**

**"Rural school districts in Texas are switching to four-day weeks this fall due to lack of staff. Florida is asking veterans with no teaching background to enter classrooms. Arizona is allowing college students to step in and instruct children."**

**– The Washington Post**

**"Everybody right now is just talking about, frankly, warm bodies. The quality of teachers still matters. You will never get to quality if you don't get to quantity first."**

**– The New York Times**

<sup>1</sup> The National Teacher and Principal Survey collects nationally representative data from public and private elementary and secondary schools in the United States. The survey, which NCES distributes to principals and teachers, collects information on demographic characteristics, classes, and other topics (Taie & Lewis, 2022).



illustrates the potential breadth and depth of teacher shortages and staffing challenges in public schools across the nation and adds clarity to the subject areas experiencing the more significant struggles to find qualified teachers. From these national data, it is clear that similar challenges likely exist for staff vacancies at local education agencies (LEAs).

New Jersey's challenge to find teachers for an increasing number of school vacancies is reflective of a broader struggle. Across the state, schools have encountered difficulties in identifying qualified candidates to fill their expanding rosters of vacancies. This pattern is not isolated to New Jersey; in fact, school districts within the state are grappling with staffing challenges that mirror those identified in the NCES data across the nation.

A report by the Task Force on Public School Staff Shortages in New Jersey, commissioned by Governor Phil Murphy through Executive Order No. 309, revealed that the COVID-19 pandemic intensified staffing challenges, particularly in specific subject areas. However, due to constraints related to timing and the availability of comprehensive data, many details about the extent of teacher shortages and staffing difficulties worsened by the pandemic in New Jersey remain unknown.

**"Some 120 positions have been filled by retirees in school districts across the state."**

**– NJ Spotlight News (Gross, 2023)**

To that end, the New Jersey Department of Education (NJDOE) contracted the John J. Heldrich Center for Workforce Development at Rutgers, The State University of New Jersey to identify specific data points within the New Jersey Education to Earnings Data System (NJEEDS) to provide an initial summary analysis of existing data. This report serves as a precursor to the required annual statutory report to the legislature<sup>2</sup> that is outlined in Chapter 394 of Public Law 2021 (P.L.2021, c.394), which establishes annual data collections and reports on the teacher workforce in the state. The Heldrich Center completed this analysis through four tasks:

- ▶ Task 1: Analyzing the landscape of the teacher workforce,
- ▶ Task 2: Assessing teacher exits by subgroups,
- ▶ Task 3: Comparing of certificate completers to exits, and
- ▶ Task 4: Examining data limitations and discussing next steps.

To complete Task 1, researchers developed longitudinal descriptive analyses of the teacher workforce. This report provides an overview of the landscape by identifying the number of teachers holding specific types of certificates, and the positions they hold, disaggregated for each subject area (e.g., elementary education, mathematics, or teachers of English language learners, or ELLs). Additionally, this report discusses demographic characteristics, such as race/ethnicity, sex, age, teaching experience, and qualifications, as well as workplace characteristics, including median salaries and student-to-teacher ratios. Using data available through NJEEDS, researchers were able to provide analysis of the teacher workforce from the 2013–14 school year up to 2020–2021.

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<sup>2</sup> The first report required by P.L. 2021, c.394 is anticipated for completion in early 2024. For convenience, this statutorily required study will be referred to throughout this report as the *Teacher Workforce Report*. Since the analysis presented here is intended to inform and contextualize this report, areas of opportunity for future exploration are identified across numerous sections.

Task 2 involved a descriptive analysis that examines data on staff exiting the teacher workforce, the mobility of teachers among LEAs, and seeks to gain better understanding about those teachers exiting the workforce. This report offers an examination of common reasons why teachers resign and whether certain subject areas and/or LEAs experience more turnover among teachers. A key component of this evaluation is tracking how these factors have changed over time. Similar to Task 1, the data about why teachers exit or change LEAs are broken down by demographic characteristics and teaching experience.

To complete Task 3, researchers shift the focus from current or former teachers to the coming pipeline of new teachers into the system through an analysis of teacher endorsement and trends in education preparation among students who pursued education degrees at postsecondary institutions in New Jersey. The analysis of endorsements presents the number of endorsements over time, which affects the supply in the teacher workforce, or the subject areas in which certificated teachers can teach. The results are presented by subject area to compare with high-turnover subject areas that are identified in Task 2. To provide insight into the teacher pipeline, researchers analyzed the percentage of students who enrolled and completed their degree in education compared to those who completed degrees in other majors or did not complete their degrees at all. These outcomes are disaggregated by demographic characteristics, such as sex and race/ethnicity.

This analysis revealed a series of findings that offer more insights into the dynamics of the teacher shortage in New Jersey. Between the 2013–14 and 2020–21 school years, researchers observed that there were increases to the student-teacher ratio in high-demand subject areas, including mathematics, science, and world languages. Relatedly, New Jersey experienced significant declines in the number of teachers working in the profession, particularly in the core subject areas of mathematics, English, science, world languages, and social studies. As such, clear deficits can be seen in critical subject areas of need in the state. Regarding teacher retention, data revealed that while the percentage of teachers exiting the field remained unchanged, more teachers exited the profession in the time period examined. Moreover, researchers observed substantial variation in teacher retention when broken down by teacher demographic characteristics, subject area, and LEA poverty level. In the examination of the teacher pipeline, researchers found that NJDOE issued fewer endorsements in recent years, across nearly every subject area. Similarly, New Jersey experienced a significant decline in the number of individuals seeking and completing a Bachelor's degree in education. Lastly, the research showed that the COVID-19 pandemic only had a small impact on the teacher workforce in New Jersey, as many of the trends fueling the teacher shortage in the state were already happening prior to the onset of the pandemic.

The following sections provide background on the issue of teacher shortages nationally and in New Jersey, as well as briefly summarize the methodology and present key findings organized by the three primary tasks. This report includes tables with additional results in the appendix. The final section offers future implications for policymaking and considers the next steps for the future annual *Teacher Workforce Report*.

# Background

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The Heldrich Center research team reviewed the literature on teacher shortages. The following section briefly summarizes the review.

## National Teacher Shortages

Public schools struggle to fill teacher vacancies, a problem that has become more evident in recent years. This issue holds significant weight, as teachers play a vital role in supporting the economy and shaping the future of society. In 2017, the U.S. Department of Education's Office of Postsecondary Education produced a nationwide listing of teacher shortage areas that cited shortages in all 50 states in at least one subject area (Cross, 2017). According to October 2022 data from NCES, 18% of public schools had one teaching vacancy and 27% had multiple teaching vacancies (NCES, 2022b).

The impact of teacher shortages varies widely, often manifesting differently in urban and rural areas, as well as in communities marked by high levels of poverty. According to NCES data from 2022, the disparities in teacher shortages are evident across different economic landscapes (NCES, 2022b). In high-poverty neighborhoods, 57% of public schools reported at least one teaching vacancy, while in low-poverty neighborhoods, the figure stood at 41%.

Teacher shortages are not uniform across all subjects, with pronounced deficits reported in areas such as special education, mathematics, science, and bilingual and English-language education (Heim, 2016). The scarcity is particularly acute for qualified special education, science, and mathematics teachers, who are often cited as the most challenging to recruit (Turner & Cohen, 2023). A misalignment between supply and demand is at the heart of this issue; research indicates that the national supply of appropriately credentialed teachers – those holding the requisite certifications and endorsements for specific subject areas – has failed to meet the demand (McVey & Trinidad, 2019).

The national teacher shortage has complex roots, involving a web of factors that go beyond simple explanations. The persistent growth in teaching vacancies links to a mix of influences, including the dwindling appeal of teaching as a career, expanding school enrollment, intentional reductions in class sizes, and a troubling trend of teachers leaving their positions (García & Weiss, 2019). These challenges were magnified with the onset of the COVID-19 pandemic in 2020, which brought new obstacles to the educational landscape.

## Impacts of the COVID-19 Pandemic

The COVID-19 pandemic intensified an already troubling issue: teacher shortages. This challenge, which had been growing for some time, became critical during the pandemic. Factors such as health concerns, heightened stress, and limited opportunities for professional growth and support contributed to an unparalleled departure of teachers from the profession, as noted by the U.S. Department of Education (n.d.-a).

Diving deeper into the pandemic's toll on teachers, a study by the Economic Policy Institute revealed a notable rise in teacher stress during this period (Schmitt & deCourcy, 2022). Supporting this, a RAND Corporation survey of over 2,300 teachers found that 73% reported experiencing frequent job-related stress, a rate double that of non-teaching professions (Schmitt & deCourcy, 2022). Further research from Brookings showed an evolving sentiment among teachers, with the likelihood of teachers considering leaving their state or the profession surging from 24% in March 2020 to 30% by March 2021 (Zamarro, Camp, Fuchsman, & McGee, 2021). These data illuminate a dire scenario: the COVID-19 pandemic has severely strained an already vulnerable teaching workforce, amplifying the difficulties in addressing teacher vacancies.

## Factors Cited in Teacher Retention

Extensive research has shed light on the pivotal factors that influence teacher retention. The Economic Policy Institute highlights several primary contributors to teacher turnover. Among the foremost concerns are compensation, the insufficiency of fundamental assistance, and a perceived absence of esteem from the community (Garcia & Weiss, 2019). Of particular concern is the decline of the working environment in high-poverty schools, which obstructs both retention and effective recruitment (Garcia & Weiss, 2019). The heart of this complex problem lies in the undeniable connection between teacher compensation and retention, casting a shadow over those who are considering a vocation in teaching.

Issues with teacher pay, particularly wage stagnation, is cited as a critical issue, as it also relates to the cost of education needed to enter the teacher workforce (Turner & Cohen, 2023). While inflation-adjusted teacher wages have remained the same since 1990, the rising inflation-adjusted costs of education, a clear requirement to enter the teacher workforce, have nearly doubled from 1990 to 2020 (Turner & Cohen, 2023). Yet, the financial hardships faced by teachers extend beyond mere wage stagnation, encompassing a broader systemic issue that has an impact on both recruitment and retention.

Among these broader financial hardships, those who pursue education to enter the teacher workforce face specific obstacles that serve to disincentivize individuals from remaining in the profession. Known as the **teacher pay penalty**, this phenomenon refers to the fact that teachers are paid less (in weekly wages and total compensation) than their non-teacher, college-educated counterparts, and the situation has worsened considerably over time (Allegretto, 2022). Teachers earn 76.5 cents on the dollar compared with what college graduates earn working in other professions (Will, 2022). This wage penalty, coupled with other factors previously mentioned, serve as barriers to the recruitment and retention of the teacher workforce. The financial struggles faced by teachers, from stagnant wages to the disproportionate pay compared to other professions, not only affect current teachers but also have far-reaching implications on the future of the profession itself.

Critically, these retention factors have also served to contribute to a consistent decline in candidates pursuing teacher preparation (Carver-Thomas, 2022). A Pew Research Center report highlights that the number and share of new college graduates with a Bachelor's degree in education have decreased in recent decades, resulting in a "pipeline problem" (Schaeffer, 2022). More specifically, the Pew Research Center cites that in the 2019–20 academic year, colleges and universities conferred 85,057 Bachelor's degrees in education, which constitutes a 19 percentage-point drop from the 2000–01 academic year rate of conferring more than 105,000 Bachelor's degrees in education (Schaeffer, 2022). These significant, steady, and prolonged decreases in the number of individuals pursuing degrees in the field of education result in a weakened teacher workforce pipeline, the implications of which are currently being felt on a national scale.

## New Jersey Teacher Shortage

Amid a nationwide dilemma of obtaining skilled teachers, New Jersey stands as a striking illustration of this problem. Findings from the New Jersey Policy Perspective in 2020 elucidate a waning enthusiasm for the teaching profession within the state. As the ratio of prospective teachers to students narrows, there looms a potential jeopardy to the educational caliber and integrity of the Garden State in forthcoming years (Weber, 2020). Most strikingly, the span between 2009 and 2018 witnessed a precipitous 50% ebb in individuals culminating their teacher training in New Jersey. This downturn is more pronounced than the national contraction of 31% during the analogous period (Weber, 2020). This trend in New Jersey mirrors the tribulations other states confront, indicating profound ramifications for the state's academic horizon.

## Implications for Teacher Shortages

Across the United States, classrooms are showing significant effects of a shortage of teachers. In school districts with limited resources, the decrease in teachers results in limited opportunities for students, especially those from low-income backgrounds (McVey & Trinidad, 2019). Reporting by *The Washington Post* noted that with the teacher workforce strained, impacts directly felt by students can include schools having to cancel courses, increase class sizes and teacher-student ratios, and having to hire underprepared teachers (Heim, 2016). Relatedly, according to the Learning Policy Institute, underprepared teachers leave their schools at a rate of two to three times higher than those who enter with comprehensive preparation, further adding to a cycle of teacher turnover and retention issues (Carver-Thomas, 2022). The Learning Policy Institute further states that this kind of staff instability and teacher turnover only serves to disrupt relationships with students and other teachers, undermine professional learning, and impede collaboration, all of which are foundational in establishing supportive learning environments in schools (Carver-Thomas, 2022).

## Strategies to Address Teacher Shortages

Programs that cultivate talent within communities, known as Grow Your Own programs, are gaining in popularity as a strategy to increase and diversify the teacher workforce (Turner & Cohen, 2023). Offering competitive wages and benefits packages, inclusive of shoring up teacher pension systems, are other avenues by which to attract high-quality candidates (Weber, 2020). To address shortages in specific subject areas, such as special education and mathematics, some suggest offering hiring bonuses for qualified teachers with that specific subject expertise (Turner & Cohen, 2023). Moreover, for the retention of existing teachers, in addition to raising wages, school districts are working to streamline recruitment strategies and overall improve teaching conditions (Carver-Thomas, 2022).

Strategies to address teacher shortages in New Jersey have garnered significant attention. In 2022, Governor Phil Murphy's Executive Order 309 established the Task Force on Public School Staff Shortages in New Jersey, which was mandated with developing short- and long-term recommendations to address teacher shortages in school districts across the state. In February 2023, the Task Force on Public School Staff Shortages in New Jersey produced an initial report highlighting a set of 31 recommendations that fell into three broad categories: (1) supporting teachers to improve retention, (2) improving recruitment and training, and (3) state-funded programs to address teacher shortage. These recommendations address a diversity of issues, including but not limited to: reducing the stress of teachers, improving the retention of current staff, increasing interest in the field, and removing prominent barriers to the recruitment and training of new teachers (Task Force on Public School Staff Shortages in New Jersey, 2023). Teacher shortages in New Jersey, as well as across the nation, are threatening the availability of high-quality education in public schools, prompting a thorough review of the current status of teachers in the state and an assessment of the subject areas that are most in need.

## Methods

Heldrich Center researchers completed this analysis using NJEEDS data between the 2013–14 and 2020–21 school years. NJDOE is a partner agency in maintaining data in NJEEDS, including the primary data source used for this study – extracts from the New Jersey Standards Measurement and Resource for Teaching (NJ SMART) data system – as well as other data comprised in the NJEEDS longitudinal system. This work focused on data that come from the Staff Member Identification (SMID) extract that provides detailed information on current staff members in each New Jersey LEA. In some analyses, aggregate student data were needed, for which researchers relied on student-level extracts from the NJ SMART data collection. To supplement these data, the Heldrich Center included an analysis of postsecondary enrollment and completion data from the Office of the Secretary of Higher Education (OSHE). Researchers assessed the changes in

the teacher pipeline by examining the number and types of certifications or endorsements conferred by NJDOE between 2010 and 2022. This study overall sought to address two primary research questions related to the teacher workforce in New Jersey.

Throughout this study, the staff and student data used are associated with all LEAs in New Jersey, including all types of operating school districts, non-operating school districts, limited-purpose regional school districts, county vocational-technical school districts, charter schools, and Renaissance schools. Additionally, the use of the term “teachers” refers to staff that have a State of New Jersey certification and spend at least a portion of their time assigned to an instructional job code as defined by NJDOE. Individual staff members may serve in up to six jobs within an LEA, so researchers defined teachers using a full-time equivalency (FTE) based on the amount time associated with an instructional job code. Additional details can be found in the technical methodology in the appendix.

## Research Questions

1. What are the current teaching positions, by certification area, in high demand in the state?
2. What certification or geographic areas are at higher-than-average risk of teacher shortages?

## Data Analysis

The Heldrich Center addressed these research questions through three main streams of analysis. Researchers first analyzed the current teacher workforce landscape, then assessed exits or interdistrict transfers by various characteristics over time and identified potential fields or geographic areas at risk of higher-than-average turnover. Finally, a review of individuals entering postsecondary schools and those attaining a teaching endorsement was completed to assess new entrants into the field. The following paragraphs detail specific information about each data source used for this analysis. Please refer to the technical methodology in the appendix for additional information.

### *New Jersey Department of Education*

#### *New Jersey Standards Measurement and Resource for Teaching Data*

To analyze the current teacher workforce landscape and assess teacher exits by subgroup, the Heldrich Center team used NJ SMART data, which are housed within NJEEDS, between the 2013–14 and 2020–21 school years. For each year, teachers were defined using the unique SMID within these data files and were limited to those that held a certificated teaching position within the LEA for at least a portion of their time. Full-time administrators, certificated non-teaching positions, and non-certificated staff were not included in this analysis. This analysis also developed measures for teacher retention (retained, transferred, exited) and tenure status (tenured, non-tenured). Merging Free or Reduced-price Lunch system data into LEA poverty tiers, researchers examined metrics by poverty level. Analyzing these staff-level data enabled researchers to gain better understanding of the role individuals serve within their LEA and allowed researchers to identify trends by subject and other select characteristics, such as poverty level and tenure status, over time.

#### *Certification and Endorsement Data*

Researchers analyzed state teaching certification and endorsement data between 2010 and 2022.<sup>3</sup> Individuals pursuing teaching certifications must fulfill an endorsement that identifies the type(s) of subject area(s) they can teach. Since endorsements can be conferred by NJDOE at any time, all types of endorsement conferred for each calendar year (except substitutes) were included. Because individuals may receive multiple endorsements, figures related to

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<sup>3</sup> NJDOE data exist for several decades prior to 2010, which may provide opportunity for future studies. These earlier data are stored separately, however, and will need to be assessed for consistency across available data fields and overall data quality.

endorsements should not be interpreted as the number of new teachers or newly endorsed teachers, but instead the number of those that have received the credential that year. Further, since this analysis was focused on trends within and across subject areas, it does not differentiate between different pathways the individuals took to achieve each endorsement. Researchers have included numerous endorsements by subject area to frame the analysis in as close alignment as possible with the job code data included in NJ SMART, reflecting the landscape of the certified teacher workforce in New Jersey.

In some of the following sections, the student-teacher ratio is used as a key metric. The determination of the student-teacher ratio constitutes a pivotal aspect of this analysis, requiring a series of methodical and deliberate steps. Researchers began by identifying student enrollment across different subject areas and aligned them with the corresponding teacher categories within the specific job code range of 1000 to 2999. For each subject area, the student-teacher ratio was calculated by dividing the total number of enrolled students by the FTE count of teachers possessing the relevant endorsements. This analysis is not meant to describe a typical class size for these teachers, but rather gain an understanding of the number of students relative to the numbers of certified teachers. Researchers then further categorized the student-teacher ratio, breaking it down by educational levels such as elementary and middle school, as well as by specialized student groups, including ELL and special education students served in resource programs. Please refer to the technical methodology in the appendix for additional information.

### ***Office of the Secretary of Higher Education***

To analyze teacher supply, this study used enrollment and completions data from OSHE within NJEEDS to examine students seeking a Bachelor's degree at postsecondary institutions in New Jersey between 2012 and 2016.<sup>4</sup> Selecting this period provided sufficient time – at least six years – for students to graduate.<sup>5</sup> Due to the analytical limitations of OSHE data, this analysis excludes students who completed a Bachelor's degree in other majors and became teachers. In future analyses that utilize NJEEDS data to identify individual records, it may be possible to identify and track the outcomes of students who complete a Bachelor's degree in a major other than education and go on to become teachers. Additionally, future analyses could compare exits by this subgroup, students who follow more traditional educational pathways, and other less common paths for individuals who go on to become teachers.

### **Analytical Limitations**

This analysis included several interconnected limitations that should be carefully considered. The analysis was confined to state- and LEA-level estimates, for example, which may overlook local- and/or school-level elements that uniquely affect teachers. Where LEA-level estimates were unavailable, researchers replaced the value with the state-level average. Additionally, researchers were limited by the timeframe of complete and validated data that are included in NJEEDS for this analysis, which includes the 2013–14 to 2020–21 school years. The most recent year of data used will not reflect information from more recent school year(s), which may be affected by recent policy changes in New Jersey. By complying with data security and confidentiality requirements associated with NJEEDS data use standards, researchers also combined and/or suppressed categories with few records, constraining the depth of the analysis. These practices, while essential for data security and confidentiality requirements, add some limits to the scope of this analysis. Finally, it is important to note that longitudinal data require consistent tracking over time. Any interruptions or inconsistencies in the data collection may affect the analysis, so caution should be exercised in interpreting the results in areas where these inconsistencies may be present. For additional information, please refer to the technical methodology in the appendix.

<sup>4</sup> This cohort is limited to students seeking Bachelor's degrees because it is one of the requirements to apply for teaching certificates, though restrictions apply (New Jersey Admin. Code § 6A:9B-4.5).

<sup>5</sup> As for the time to completion of the enrolled students that complied with the characteristics indicated, researchers considered that they could take as little as one year to graduate. This assumption is based on the fact that the data include transfer students, who can then receive their Bachelor's degree from the new institution in as little as one year.

# Findings

## Teacher Workforce Landscape

The Heldrich Center conducted a descriptive review of the teacher workforce in New Jersey between 2013–14 and 2020–21. The descriptive review included an overview of the number of teachers each year by individual characteristics and by subject area. Individual characteristics, including race/ethnicity, sex, median salary, and teaching experience, are discussed below. There were **eight** key findings associated with the teacher workforce landscape.

**Finding #1: The number of teachers in New Jersey has slightly increased over time, with an annual increase in recent years, except for the 2016–17 and 2020–21 school years.**

There were around 117,300 teachers in 2013–14 compared to approximately 118,500 by 2020–21, increasing by 1.1% during this period (see Figure 1). Researchers found that the number of teachers peaked at 119,800 in 2019–20 and then declined the following year. The onset and impacts of the COVID-19 pandemic likely affected the number of teachers in 2020–21, diminishing the workforce by over 1.1%. As data become more available, future analyses of COVID-19 pandemic-affected years can show whether this was a one-year blip or a long-term trend. The overall finding, nonetheless, suggests that the number of teachers employed in New Jersey slightly increased during this period. As detailed in the methods section on pages 10 to 12, these figures refer to individuals with a job code related to a teaching position and utilizing FTE values. As such, these totals are reflective of the FTE of teachers, and not a count of individuals.

### TEACHER WORKFORCE LANDSCAPE

**Finding #1:** The number of teachers in New Jersey has slightly increased over time, with an annual increase in recent years, except for the 2016–17 and 2020–21 school years.

**Finding #2:** The number of teachers for some subject areas grew in recent years, including the most common subject areas for teachers, such as elementary education, resource program, and teachers in middle grades (fifth through eighth grades), which all increased between the 2013–14 and 2020–21 school years.

**Finding #3:** There were fewer teachers in select fields between 2013–14 and 2020–21, including core subject areas, such as mathematics, English, science, world languages, and social studies.

**Finding #4:** Though the overall student-teacher ratio declined between 2013–14 and 2020–21, several subject areas experienced higher student-teacher ratios, resulting in fewer teachers to instruct more students in those subjects.

**Finding #5:** An overwhelming majority of the teacher workforce are white and/or female in New Jersey.

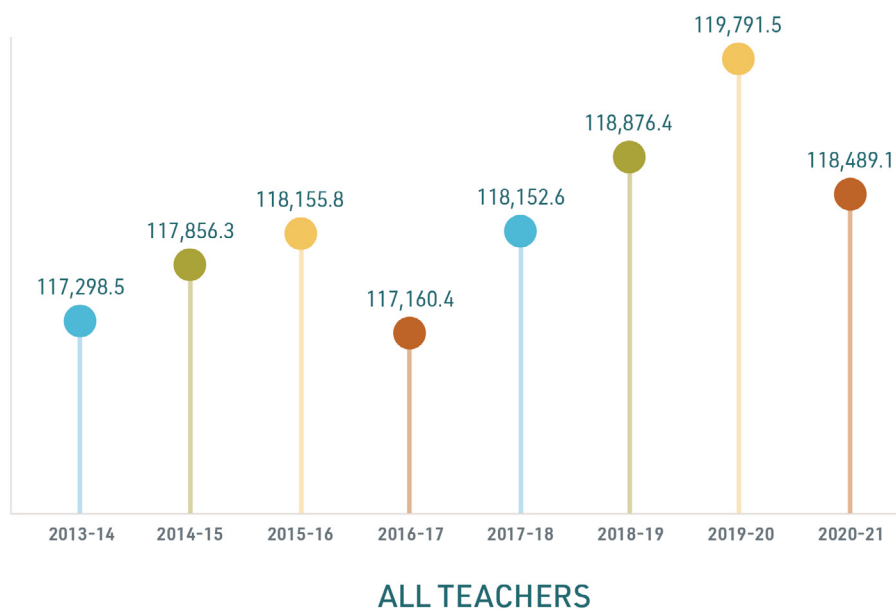
**Finding #6:** Teacher salaries increased in nominal terms, varied across race/ethnicity and LEA income levels, but did not keep pace with inflation.

**Finding #7:** The teacher workforce, on average, is more experienced over time, but this may indicate that LEAs in the state struggle to retain younger teachers with less experience, especially for select LEAs.

**Finding #8:** LEA poverty levels did not substantially change between 2013–14 and 2020–21, though there were fewer high-poverty LEAs and student eligibility for free or reduced-price meals somewhat declined.



Figure 1: Number of New Jersey Teachers Employed Between 2013–14 and 2020–21



**Finding #2: The number of teachers for some subject areas grew in recent years, including the most common subject areas for teachers, such as elementary education, resource program, and teachers in middle grades (fifth through eighth grades), which all increased between the 2013–14 and 2020–21 school years.**

Using the most recent data available, Figure 2 compares the number of teachers by subject area using FTE calculations. New Jersey permits teachers to hold up to six employment codes, which correspond to the subjects they teach or other positions they fulfill within their employing LEA. To conduct this analysis, researchers restricted the sample to individuals who held teaching positions, determined by the time they spent instructing in each subject area as full-time employees. Researchers found that the largest single cohort of teachers instruct elementary school, representing 36% of around 118,500 teachers in New Jersey in the most recent school year examined, and is the largest subject area across all years. Figure 2 shows that the number of elementary school teachers increased from around 41,900 in 2013–14 to 42,700 by 2020–21, increasing by about 1.8%.

The teachers with the second largest subject area were teachers in resource programs.<sup>6</sup> There were around 12,500 individuals teaching in resource programs in 2013–14 compared to 14,500 by 2020–21, increasing by approximately 16.2%. Growth among teachers of middle grades – or those that teach fifth through eighth grades – was about 5% over this time. Middle-grade teachers represented the third largest cohort of teachers each year. The next largest single subject area was health and physical education, with around 7,000 teachers each year. While there was a minor uptick in the number of health and physical education teachers during this timeframe, the discipline itself remained notably constant, save for a dip below 7,000 total teachers during the 2016–17 academic year.

There were few teachers in financial literacy, though the percentage increase for this subject area was the highest during this period. The number of teachers in financial literacy increased by 28.3%. However, this was an increase of only 28 teachers statewide during this period. The second highest growth was in teacher coordinators (17.3%), closely followed by resource program (16.2%). Teachers of bilingual or ELLs also grew over this period, increasing by 6.5% (or 170 teachers). Experiencing more modest growth were art (2.7%) and music teachers (0.2%).

<sup>6</sup> According to the New Jersey Administrative Code (NJ Admin. Code § 6A:14), resource programs offer instruction to students with disabilities, individually or in small groups. These may be more commonly referred to as special education classrooms or programs.

Figure 2: Number of Teachers by Subject Area Between 2013-14 and 2020-21

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All Teachers	117,299	117,856	118,156	117,160	118,153	118,876	119,792	118,489
Art	3,257	3,291	3,297	3,294	3,320	3,337	3,391	3,344
Business	1,045	1,047	1,024	996	988	952	949	953
Elementary	41,918	42,173	41,795	41,209	41,914	42,430	42,720	42,671
ELL/bilingual	2,630	2,615	2,374	2,430	2,542	2,630	2,734	2,800
English	6,867	6,786	6,746	6,721	6,701	6,657	6,571	6,374
Family and consumer	607	566	531	495	469	453	452	411
Financial literacy	100	114	115	119	116	125	130	128
Health and physical	7,009	7,058	7,034	6,988	7,042	7,108	7,170	7,086
Industrial arts	1,123	1,133	1,076	993	957	937	891	838
Math	6,412	6,367	6,346	6,316	6,264	6,273	6,212	6,057
Middle grades	11,509	11,866	12,320	12,346	12,335	12,234	12,377	12,084
Music	3,553	3,558	3,576	3,532	3,594	3,610	3,626	3,560
Resource program	12,460	13,082	13,637	13,993	14,177	14,238	14,596	14,476
Science	4,834	4,825	4,819	4,742	4,737	4,688	4,714	4,596
Social studies	4,335	4,359	4,357	4,304	4,310	4,322	4,345	4,291
Supplementary instruction	3,129	2,920	2,894	2,569	2,564	2,651	2,677	2,738
Teacher coordinator	709	697	814	759	778	849	872	831
Vocational education	1,611	1,289	1,274	1,269	1,296	1,339	1,372	1,375
World languages	4,190	4,111	4,123	4,086	4,048	4,042	3,995	3,876

Note: Lighter shades indicate lower numbers within the subject area, whereas the darkest shading indicates peak years of teachers employed in that subject area.

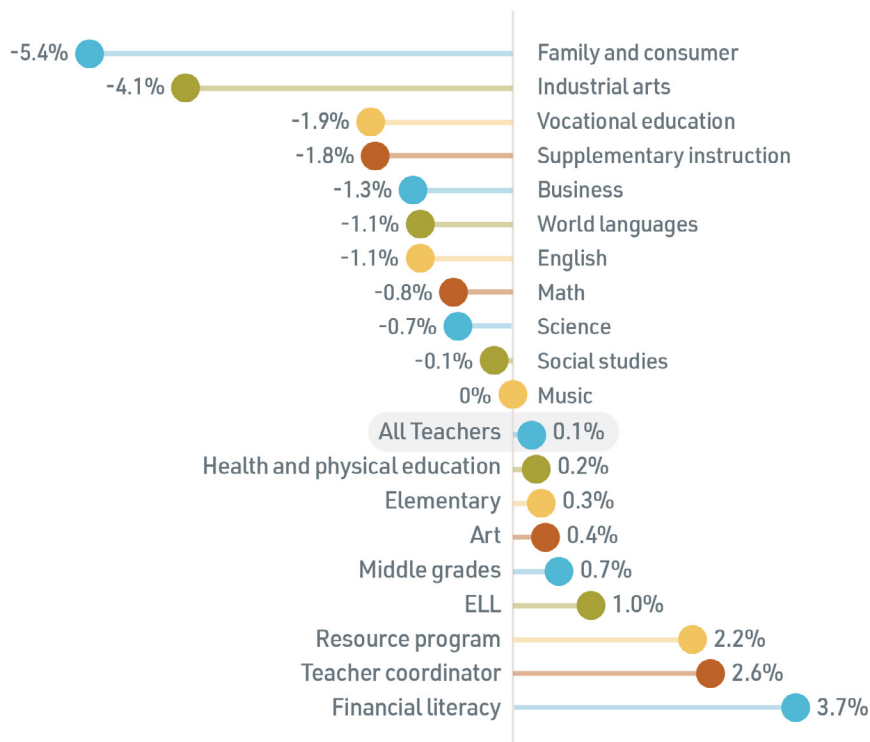
### Finding #3: There were fewer teachers in select fields between 2013-14 and 2020-21, including core subject areas, such as mathematics, English, science, world languages, and social studies.

Researchers noted a decrease in the number of teachers in subject areas that have historically been in high demand, such as mathematics, English, science, world languages, and social studies. These subject areas witnessed their peak employment levels in either the 2013-14 or 2014-15 school years and have since experienced a gradual decline until the most recent year of evaluation. Figure 3 shows the average **annual** percentage change for mathematics (-0.8%), English (-1.1%), science (-0.7%), world languages (-1.1%), and social studies (-0.1%). The number of English teachers decreased by 7.2% from 2013-14 to 2020-21, which amounted to a reduction of nearly 500 teachers. Between 2013-14 and 2020-21, the number of mathematics teachers dropped by approximately 5.6% from around 6,400 to 6,050.

By comparison, the subject areas that decreased the most overall during this period were family and consumer sciences (32.3%), industrial arts (25.4%), and vocational education (14.6%).<sup>7</sup> These subject areas similarly experienced the highest average annual percentage declines, with family and consumer sciences declining an average of 5.4% a year and industrial arts by 4.1%, as shown in Figure 3. Teachers of supplementary instruction (-1.8%) and business (-1.3%) also experienced significant annual declines since the 2013-14 school year.

<sup>7</sup> The family consumer sciences subject includes a range of topics from family economics to textiles and apparel design (NJDOE, n.d.). At the same time, the industrial arts subject has topics like graphic arts and power mechanics (N.J. Stat. § 18A:26-2.6).

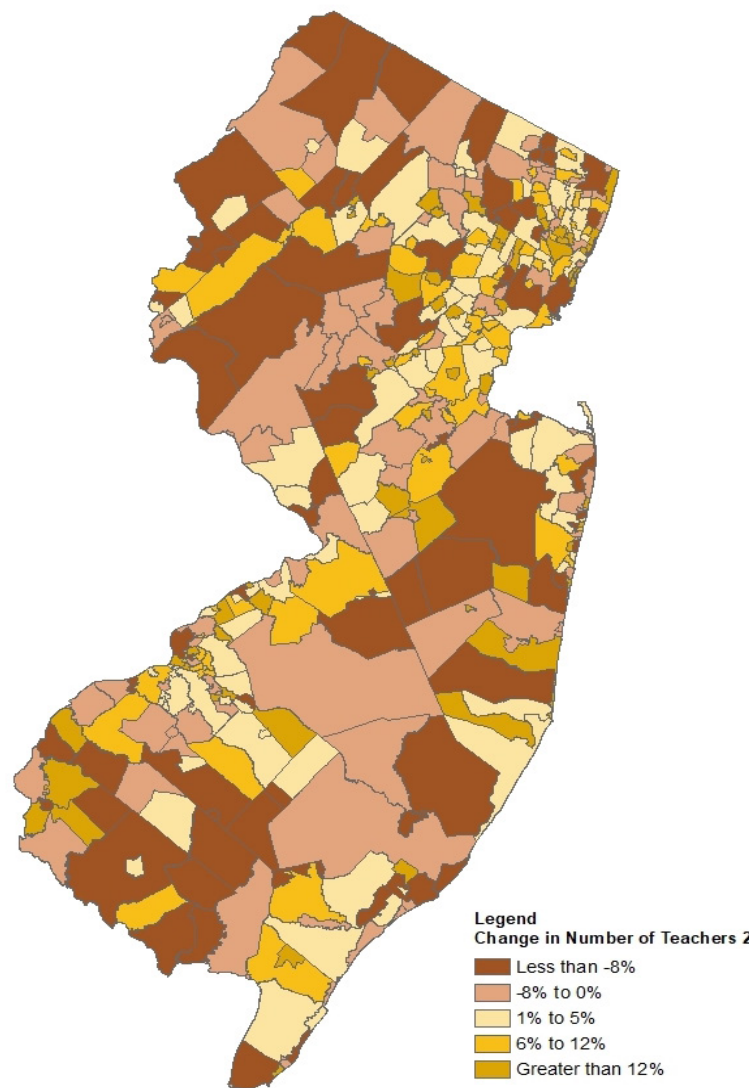
Figure 3: Average Annual Percentage Change in Teachers by Subject Area Between 2013–14 and 2020–21



The state saw LEA-wide fluctuations in teacher counts. Some regions increased teacher numbers, while others decreased employment. As illustrated in Figure 4, researchers discovered that LEAs in Middlesex and Passaic counties experienced greater teacher growth throughout the period. Additionally, growth tends to be concentrated in urban areas, with many of the more rural parts of the state showing a reduction in the number of teachers. The current findings align with the general patterns of student enrollment. However, further investigation of geographical trends in future studies could yield more detailed insights into geo-local staffing trends. LEAs near schools with greater need for more teachers will stress the local market and likely lead to higher student-teacher ratios.

Finding #3 demonstrates clear and notable declines for multiple core subject areas over the period examined. School districts that are under pressure may experience challenges in finding qualified teachers for the most needed subject areas. This finding also shows that New Jersey's teacher shortages in core subject areas align with national trends, as noted previously in a report from the NCES National Teacher and Principal Survey (NCES, 2022). As other states are confronting comparable teacher shortages, it is probable that New Jersey will face challenges in expanding the talent pool and attracting teachers from adjacent states.

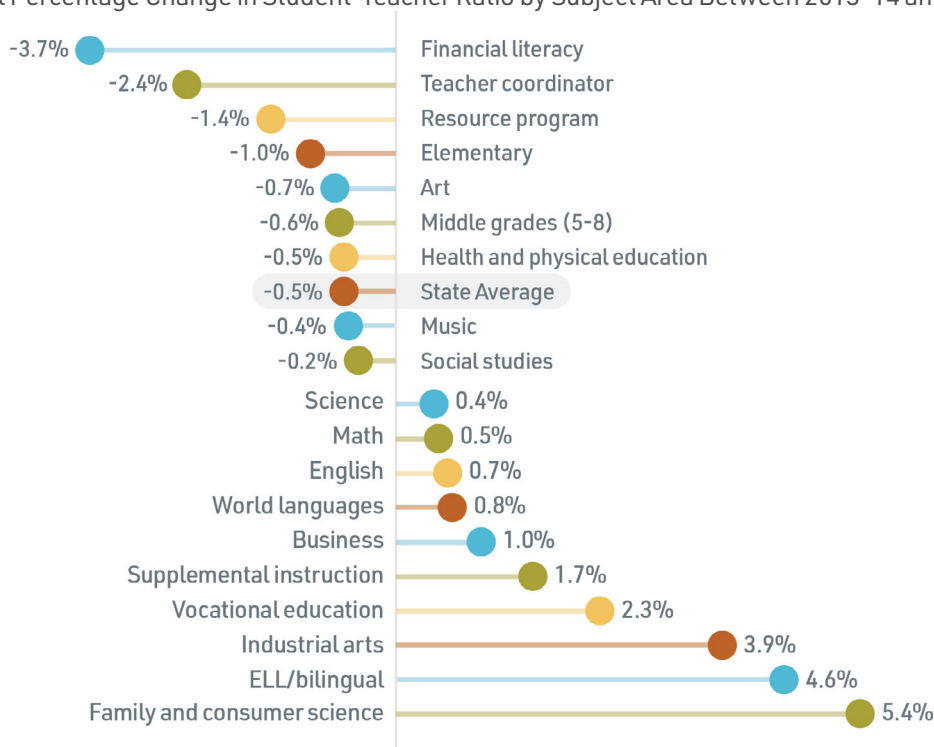
Figure 4: Percentage Change in Number of Teachers by LEA Between 2013-14 and 2020-21



**Finding #4: Though the overall student-teacher ratio declined between 2013-14 and 2020-21, several subject areas experienced higher student-teacher ratios, resulting in fewer teachers to instruct more students in those subjects.**

Looking at only the total number of teachers does not tell the whole story. It is important to contextualize the number of teachers in specific subject or geographic areas by the number of students – or the student-teacher ratio. The student-teacher ratio in New Jersey is about 12:1 as of 2020-21 school year data. Figure 5 shows the average annual percentage change in student-teacher ratio by subject area between 2013-14 and 2020-21. Those with the highest average annual percentage change were family and consumer science (5.4%), ELL/bilingual (4.6%), and industrial arts (3.9%). High-demand subject areas, such as English (0.7%), mathematics (0.5%), science (0.4%), and world languages (0.8%), also experienced increases in the student-teacher ratio. The student-teacher ratio for financial literacy, teacher coordinators, and resource program experienced negative change, on average, between 2013-14 and 2020-21.

Figure 5: Average Annual Percentage Change in Student-Teacher Ratio by Subject Area Between 2013-14 and 2020-21



Note: Negative values indicate reduced student-teacher ratios or fewer students per teacher compared to positive values, which indicate more students per teacher.

**Finding #5: An overwhelming majority of the teacher workforce are white and/or female in New Jersey.**

The race/ethnicity and sex of the teacher workforce throughout the state remained largely unchanged between 2013-14 and 2020-21. On average, the teacher workforce was 84% white, 7% Black, 7% Hispanic, and 2% Asian between 2013-14 and 2020-21 (see Figure 6). Less than 1% of teachers identify as other. Researchers noted that the racial and ethnic composition of the workforce is incongruent with the population of New Jersey. According to the U.S. Census Bureau (2022), the percentage of white teachers (84%) exceeds the state’s population (70.1%). In line with general assumptions, the study revealed that most teachers (77%) were female, while males made up only 23% of the total. In a manner akin to the examination referred to regarding the racial composition of the state, the proportion of female teachers is notably greater than the average population percentage of the state (50.7%) (U.S. Census Bureau, 2022).

**Finding #6: Teacher salaries increased in nominal terms, varied across race/ethnicity and LEA poverty levels, but did not keep pace with inflation.**

After adjusting for inflation (2022 \$USD), the median salary for teachers in New Jersey went from \$77,930 in 2013-14 to \$78,373 in 2020-21, increasing by nearly 1% (see Figure 7). Median salaries for teachers peaked at \$79,723 in 2019-20 and were at their lowest in 2013-14. Researchers found that Black teachers earned \$80,135 during this period, on average, compared to \$78,972 and \$75,106 for white and Hispanic teachers, respectively. Teachers in high-poverty LEAs had lower median salaries than mid-low-poverty and low-poverty LEAs.

Figure 6: Teacher Race/Ethnicity for 2013-14 through 2020-21 School Years

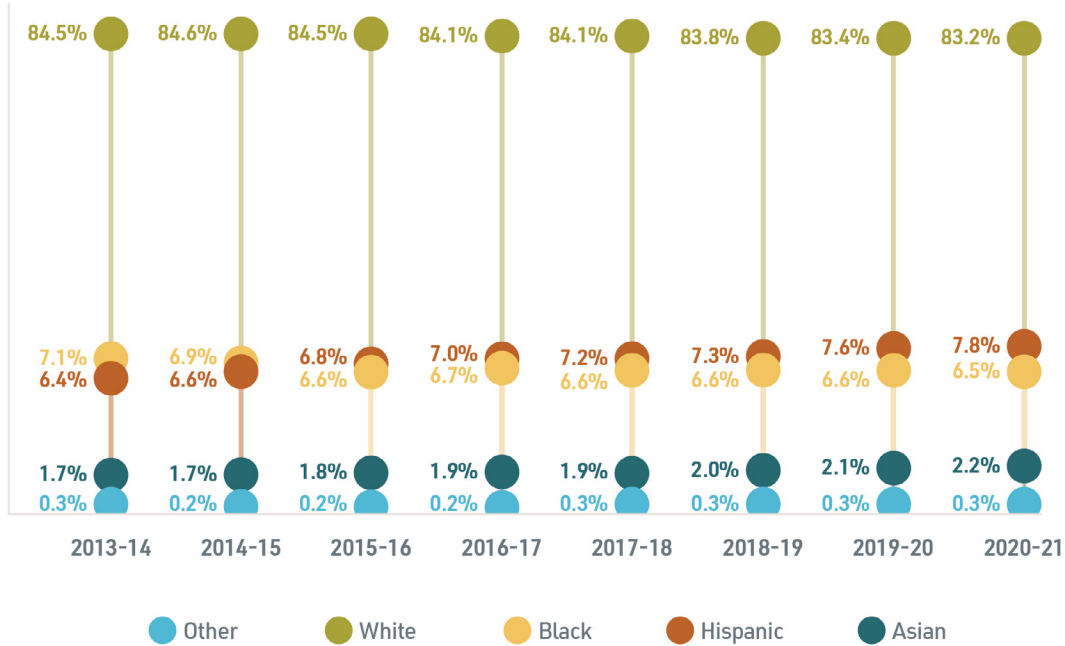
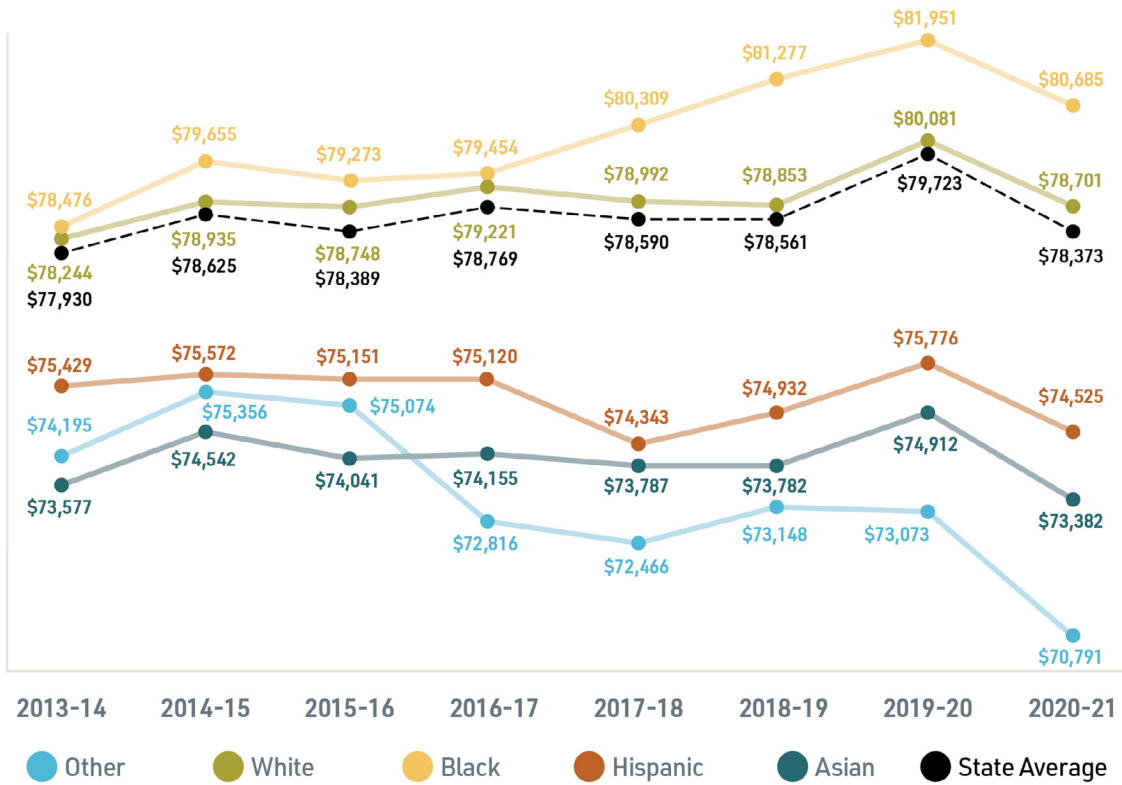


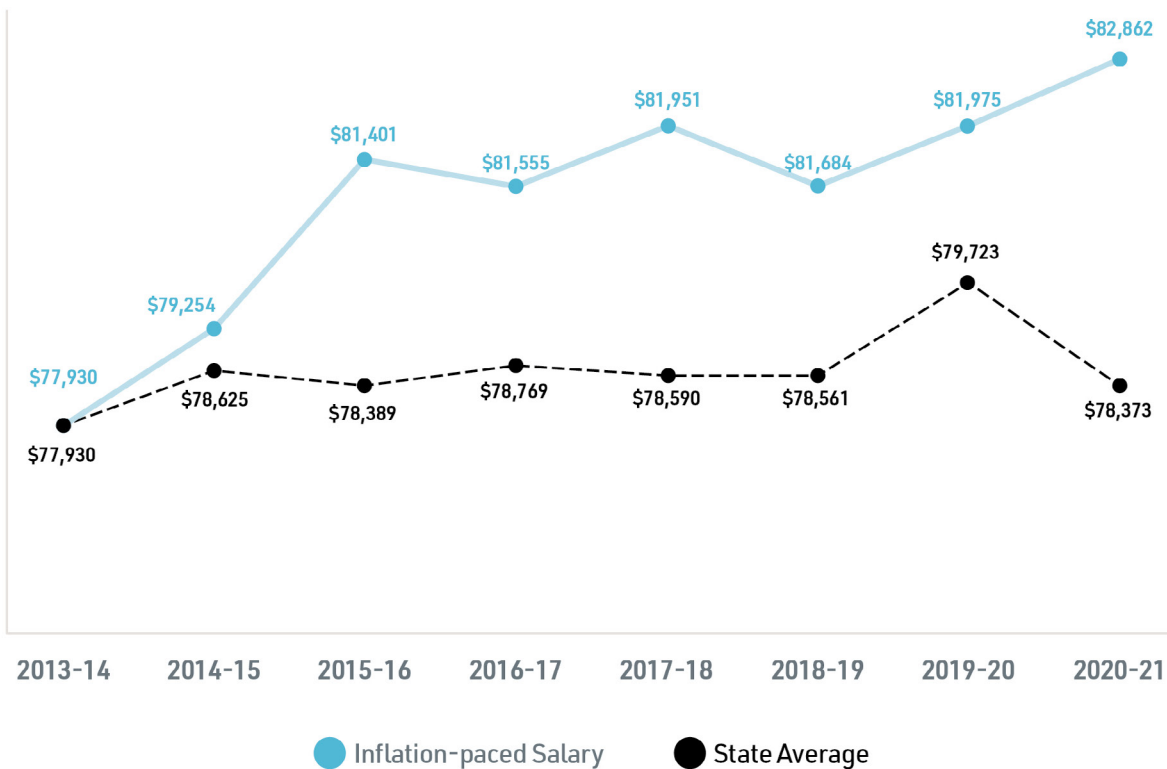
Figure 7: Median Salary (in 2022 \$) Over Time by Race/Ethnicity Between 2013-14 and 2020-21



Comparing median salary with inflation shows that teachers have not kept pace with inflation (see Figure 8). If teachers earned \$77,930 in 2013–14, their median salary should be \$82,862 by 2020–21. Yet the median salary for teachers in New Jersey was \$78,373 by 2020–21. The issue of teacher wage stagnation, as noted in previous sections of this report, is a well-documented factor in teacher recruitment and retention challenges. The lack of competitive pay rates for teachers can be viewed as prohibitive for those considering entering the field. The issue of wage stagnation for those currently employed in the field can result in teachers leaving the field to pursue more lucrative employment. As noted in the report, *Initial Recommendations from Members of the Task Force on Public School Staff Shortages in New Jersey* (Task Force on Public School Staff Shortages in New Jersey, 2023), the state can explore how to increase teachers' pay.

Although the scope of this study is relatively limited to landscape-level analyses, there is much opportunity for further exploration of teacher salaries in future reports. Factors such as regional cost variations, levels of experience and education, as well as the evaluation of demand for teachers of certain subjects all merit more review to determine their contributory role for differences in salary. Deeper analysis of these issues in New Jersey may be well situated in a future *Teacher Workforce Report*.

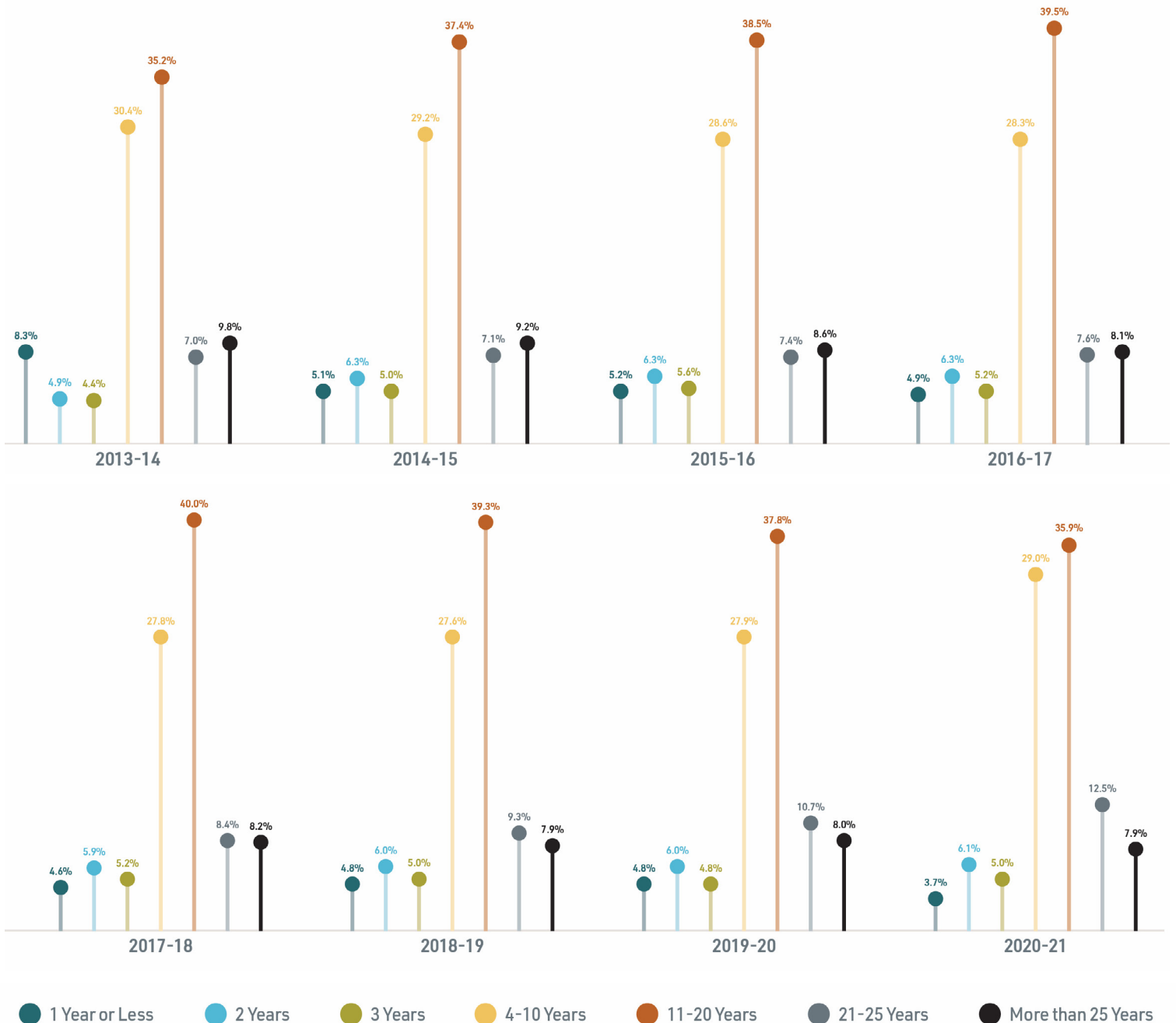
Figure 8: Median Salary (in 2022 \$) Compared to Inflation-paced Salary Between 2013–14 and 2020–21



**Finding #7: The teacher workforce, on average, is more experienced over time, but this may indicate that LEAs in the state struggle to retain younger teachers with less experience, especially for select LEAs.**

Most teachers working in New Jersey each year have between 4 and 20 years of experience during the period of analysis, with the largest single group comprised of teachers with between 11 and 20 years of experience. Over time, there have been fewer teachers with 1 year or less of experience and more with between 21 and 25 years of experience (see Figure 9). This finding suggests that fewer new teachers are entering the profession and/or staying in the profession. This finding also has implications for teacher shortages in terms of anticipating retirements for the proportion of teachers with between 21 and 25 years of experience.

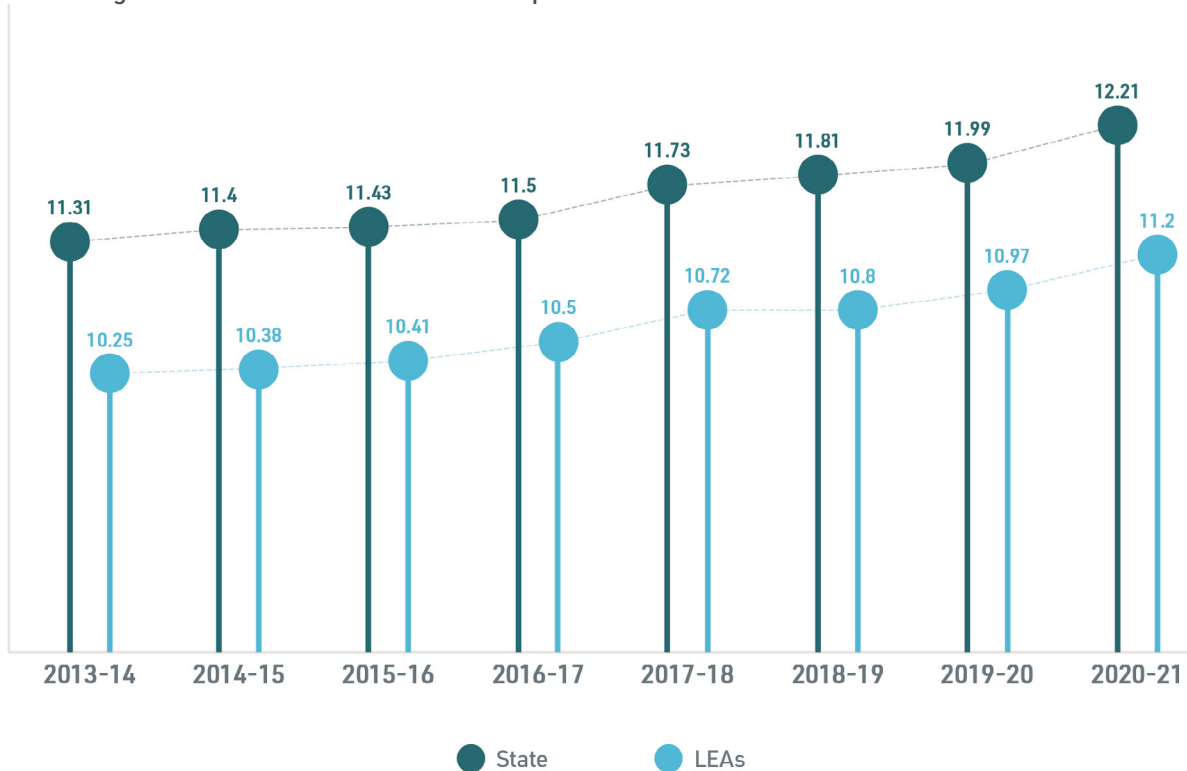
**Figure 9: Distribution of Teacher Experience Between 2013-14 and 2020-21**





There was a gradual increase in the average years of teacher experience in LEAs and across New Jersey between 2013–14 and 2020–21. Teacher experience in New Jersey, on average, increased from 11.3 to 12.2 years during this period, growing by 7% (see Figure 10). This includes all experience teaching at any New Jersey LEA. At the same time, the average years of teaching experience at their current school LEA grew from 10.2 to 11.2 years, growing by nearly 10%. Increasing seniority among teachers over time could suggest challenges in retaining younger teachers in New Jersey. These trends, combined with the distribution of teacher experiences outlined in Figure 9, point to the general slowdown in new, less experienced teachers joining the workforce. Other sections of this report explore retention of teachers within an LEA in greater detail.

**Figure 10: Average Years of Teacher and Same LEA Experience Between 2013–14 and 2020–21**



By examining the average teacher experience by LEA, researchers observed similar trends across New Jersey (see Figure 11). For example, the average years of teaching experience appears generally lower in the state’s southwest region, as well as LEAs around Essex, Hunterdon, and Morris counties. The LEAs with the highest number of years of teaching experience tend to be concentrated in the central and northwest regions of New Jersey. These observations may indicate that some LEAs, particularly in rural areas, experience greater difficulty in recruiting teachers just entering the profession, which will exacerbate shortages in those LEAs as more experienced teachers retire.

Researchers found that the proportion of tenured teachers did not change much between 2013–14 and 2020–21 (see Figure 12). Approximately 75% of the teacher workforce was tenured, on average, during this period. This demonstrates that an overwhelming majority of the teacher workforce has been employed in the state for at least five years. However, there was substantial variation in the percentage of tenured teachers by LEA during the period examined, as seen in Figure 13. Researchers found that the percentage of tenured teachers was lower in LEAs in and around Atlantic, Essex, and Middlesex counties. By comparison, LEAs with a higher percentage of tenured teachers were observed in Cape May, Mercer, and Passaic counties. These observations, similar to previous findings, may indicate difficulties for specific geographic regions in recruiting novice teachers.

Figure 11: Average Number of Years Teachers' Experience within LEA, 2020-21

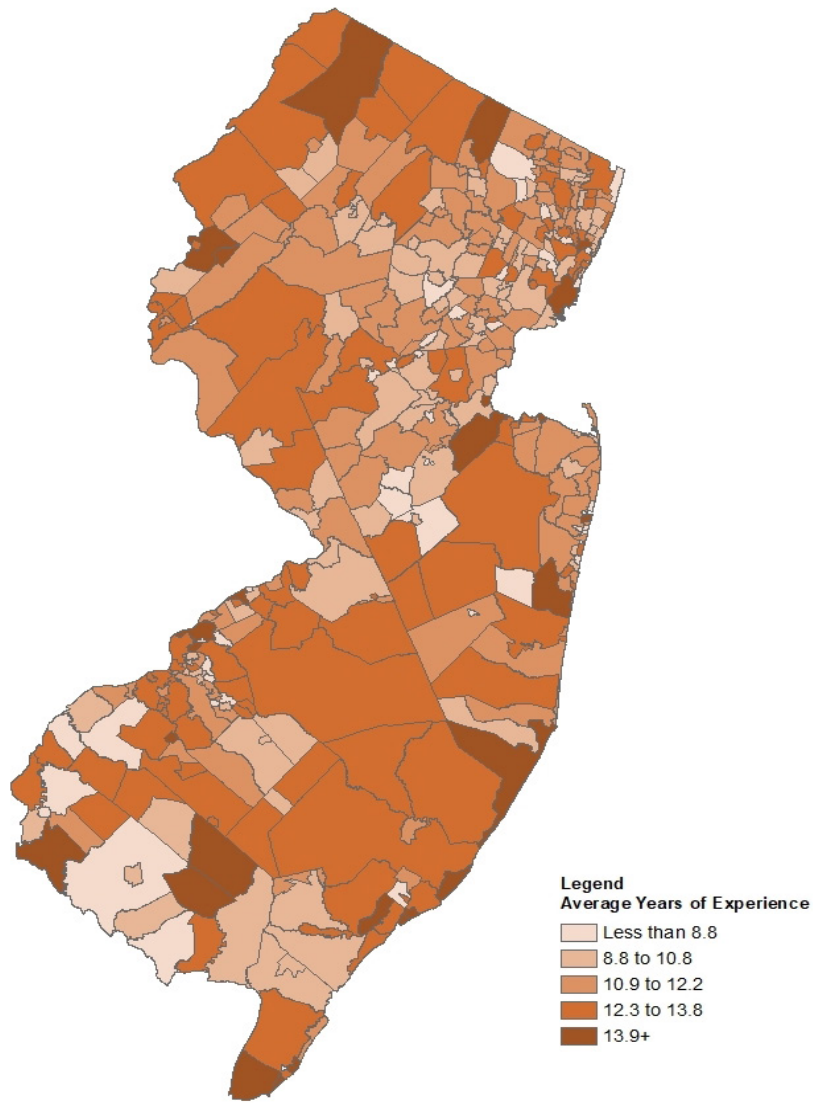


Figure 12: Percentage of Tenured and Non-tenured Teachers in New Jersey Between 2013-14 and 2020-21

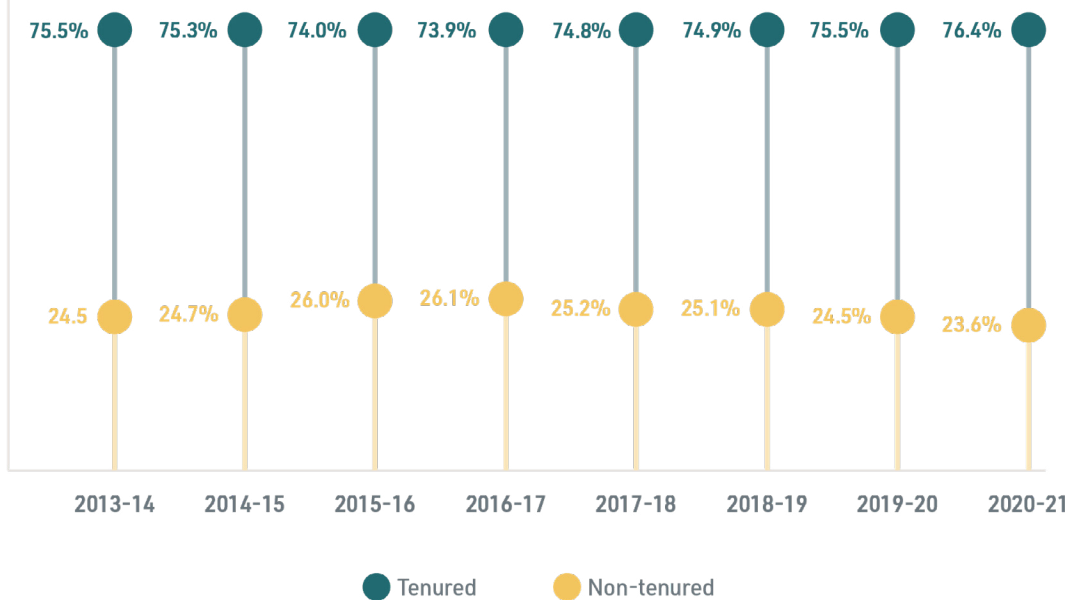
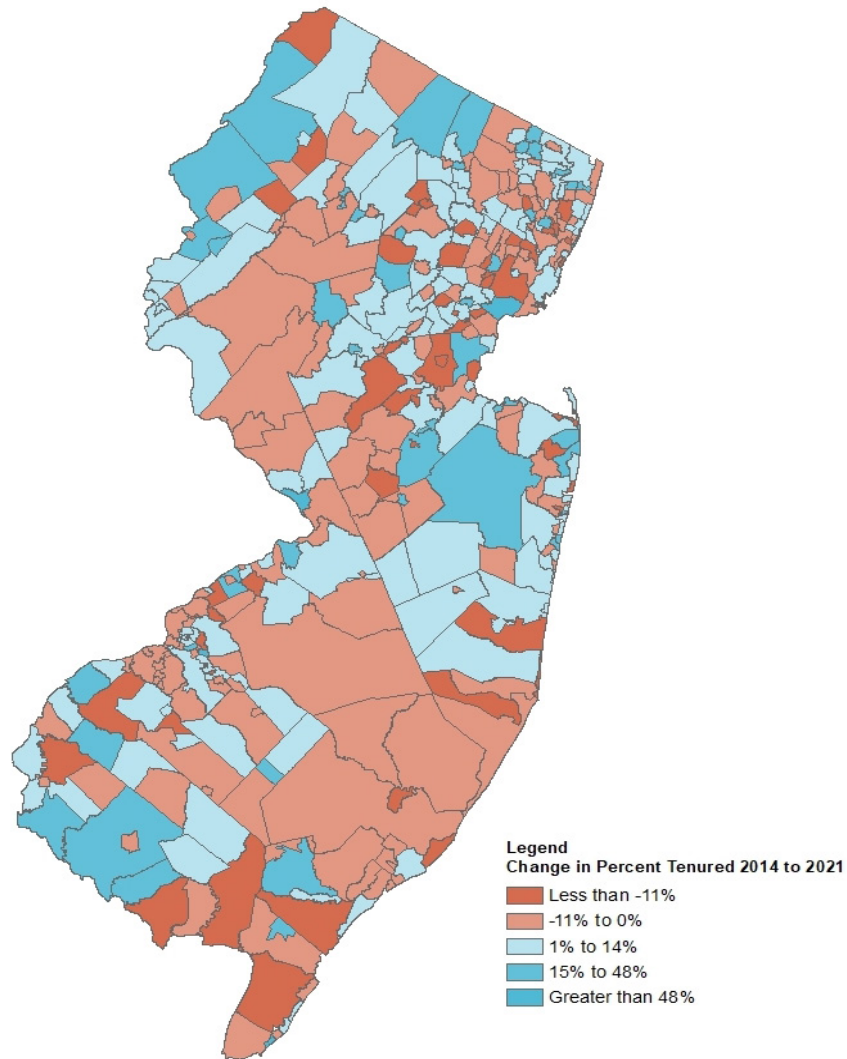


Figure 13: Difference in the Percentage of Tenured Teachers by LEA Between 2013–14 and 2020–21

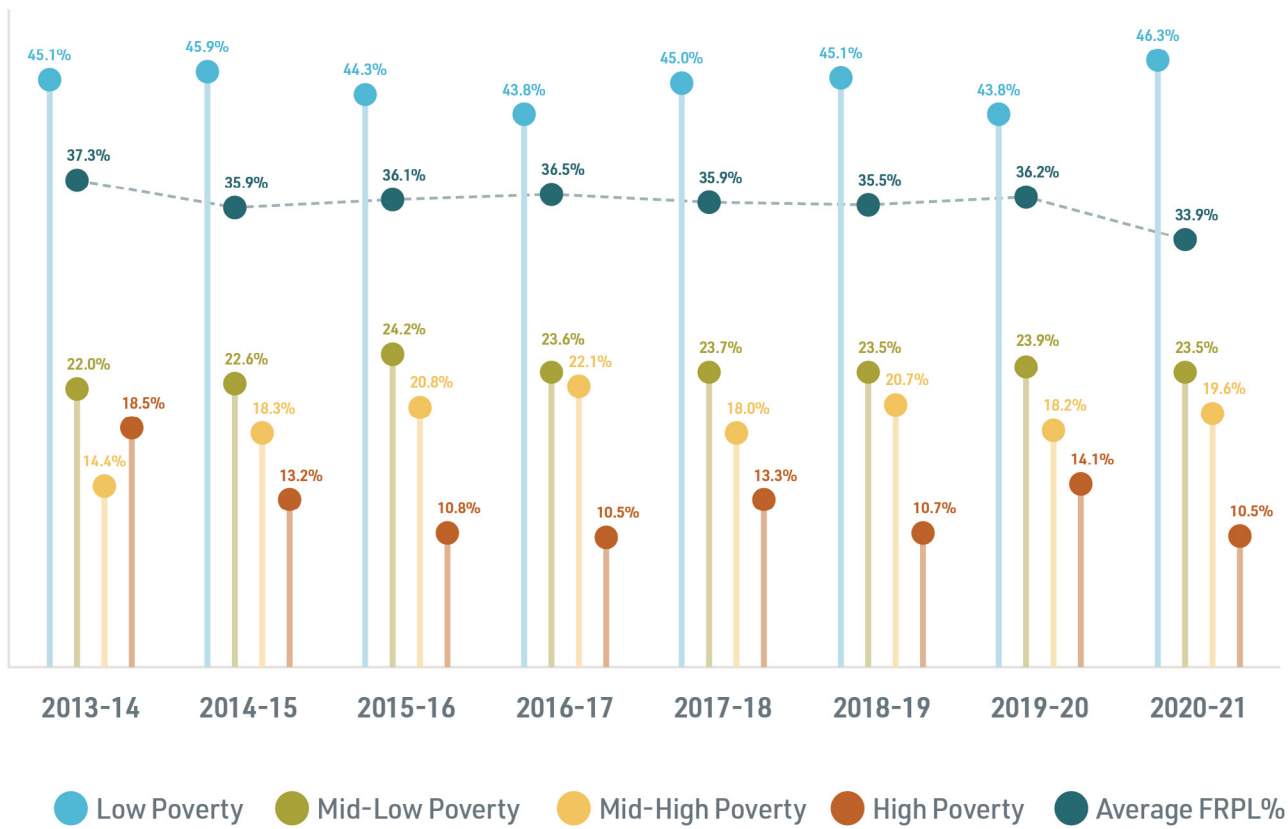


*Note: A negative value indicates that the percentage of teachers declined, whereas a positive value indicates an increase.*

**Finding #8: LEA poverty levels did not substantially change between 2013–14 and 2020–21, though there were fewer high-poverty LEAs and student eligibility for free or reduced-price meals somewhat declined.**

There are some notable trends in LEA poverty levels during the period examined (see Figure 14). For example, the percentage of high-poverty LEAs declined between 2013–14 and 2020–21. Approximately 18.5% of LEAs were classified as high poverty in 2013–14 compared to 10.5% by 2020–21, decreasing by 43.2%. At the same time, the percentage of mid-high-poverty LEAs increased from 14.4% in 2013–14 to 19.6% by 2020–21. Low-poverty and mid-low-poverty LEAs remained relatively consistent during the period examined.

Figure 14: NCES Poverty Tiers and Statewide Average Free and Reduced-price Lunch Between 2013-14 and 2020-21 School Years



## Teacher Retention

A key area of interest in this analysis is the retention of teachers within New Jersey. This section focuses primarily on three key data points: (1) the proportion of teachers who remain in their job each year, (2) a historical review of certifications for high-risk areas, and (3) the reasons teachers provide when exiting their jobs. There are **five** key findings associated with teacher retention.

The figures in this section present teacher retention by various factors over time. Specifically, researchers examined teachers who remained teachers in the same LEA year to year ("retained") compared to teachers who transferred LEAs ("transferred") and those who left teaching ("exited"). Due to the limitations outlined in the analytical limitations section of this report, teachers categorized as exiters may include those who leave New Jersey and teach in neighboring states, such as New York or Pennsylvania. Those that exited during this period are, nevertheless, no longer teaching in the state and demonstrate an overall decline in the number of teachers in New Jersey.

**Finding #9: The distribution of teachers who were retained, transferred, or exited did not substantially change between 2013–14 and 2020–21, with 9% of teachers either moving to another LEA or leaving teaching in New Jersey on average each year.**

Figure 15 shows that the proportion of teachers retained, transferred, or exited remained generally consistent during the period examined. Researchers found that New Jersey retains an overwhelming majority (90.8%) of teachers each year. Less than 3% of the teacher workforce transfers to another LEA, on average, and approximately 7% no longer appear in the teaching profession in New Jersey. Growing in recent years, however, is the percentage of exiters. Since 2016–17, the proportion of those who leave teaching has increased by 1% of all teachers, or an increase of about 17%. Future analyses should further examine short- and long-term trends as more data become available.

Researchers identified variations in the percentage of teachers retained in New Jersey by LEA (see Figure 16). Though the statewide average was 91% between 2013–14 and 2020–21, some LEAs had a lower-than-average share of retained teachers. Researchers found that LEAs in the northwest and southwest regions of the state had smaller percentages of teachers retained in New Jersey. Conversely, LEAs in and around Cape May and Gloucester counties had relatively higher teacher retention rates than the state average.

### TEACHER RETENTION

**Finding #9:** The distribution of teachers who were retained, transferred, or exited did not substantially change between 2013–14 and 2020–21, with 9% of teachers either moving to another LEA or leaving teaching in New Jersey on average each year.

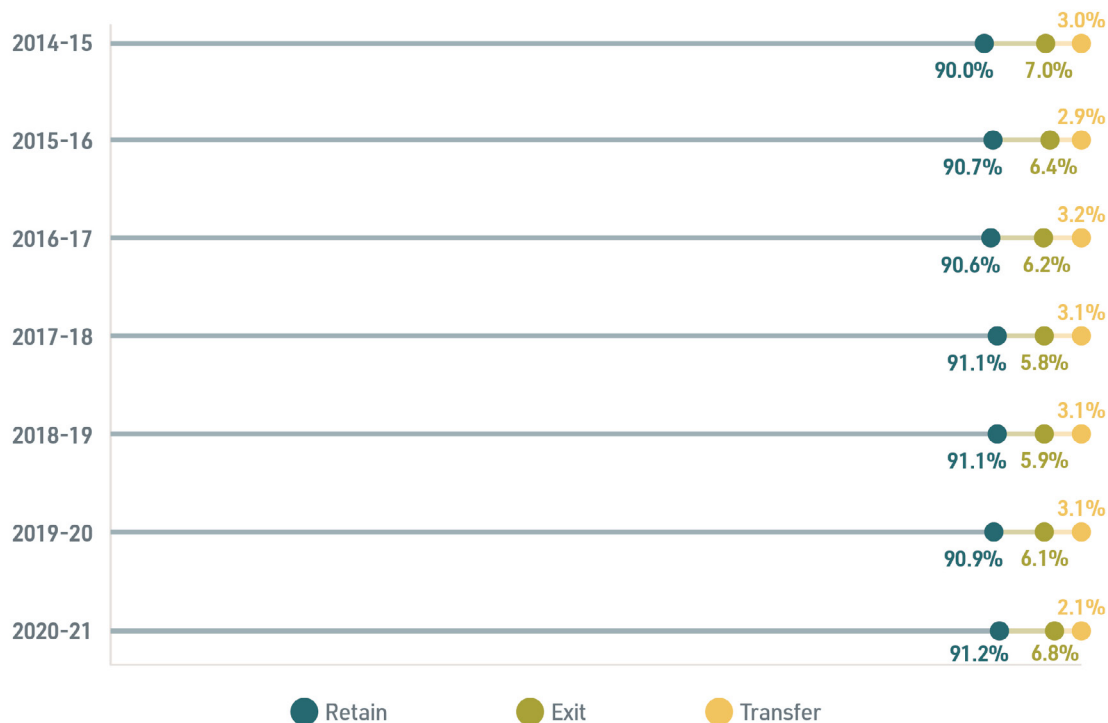
**Finding #10:** More likely to leave teaching, Black and/or younger teachers had the lowest retention rates compared to other groups during the period examined. In contrast, non-Hispanic white teachers and/or teachers between the ages of 50 and 59 were the most likely to remain within the same LEA.

**Finding #11:** Same LEA teacher retention rates varied by subject area, where core subjects like world languages, science, English, and mathematics were below average and elementary, social studies, and health and physical education were above average.

**Finding #12:** High-poverty LEAs had much lower year-to-year teacher retention when compared to LEAs of other poverty levels. Low-poverty LEAs generally exhibited the highest level of teacher retention.

**Finding #13:** The most common reasons given when a teacher exited their position were retirement, accepted employment in a non-teaching occupation, or teaching in another LEA in New Jersey. The number of teachers that left the profession to accept a non-teaching job nearly doubled from 2013–14 to 2020–21.

**Figure 15: Teacher Retention Between 2014–15 and 2020–21 School Years**



Note: School year shown indicates the number of teachers retained, exited, or transferred from last year in the same LEA.

Researchers also examined the statewide turnover rate. Figure 17 shows the percentage of teachers who transferred LEAs in the state or left teaching between 2014–15 and 2020–21. Though the percentage of turnover has remained relatively consistent, fluctuating between 9% and 10% each year, on average, the LEA-reported teacher exit reasons indicate a significant increase in those moving to a different field. See Figure 25 for more details.

Researchers observed differences among exiters by LEA (see Figure 18). The distribution of those that left teaching in New Jersey fell between 0% and 8% for most LEAs. Though the statewide average was around 7%, some LEAs had substantially higher percentages of exiters than others. Researchers identified a small number of LEAs spread throughout the state (identified in black in Figure 18) that had an exit rate of around 12%, or significantly above the state average. To address the teacher shortage and related staffing challenges, future analyses could investigate the dynamics in LEAs with a higher-than-average percentage of teachers exiting. This work would allow the state to then create solutions targeted at LEAs with higher percentages of exiters to avoid teacher turnover and address retention challenges.

Figure 16: Percentage of Teachers Retained in Each LEA for 2020-21 School Year

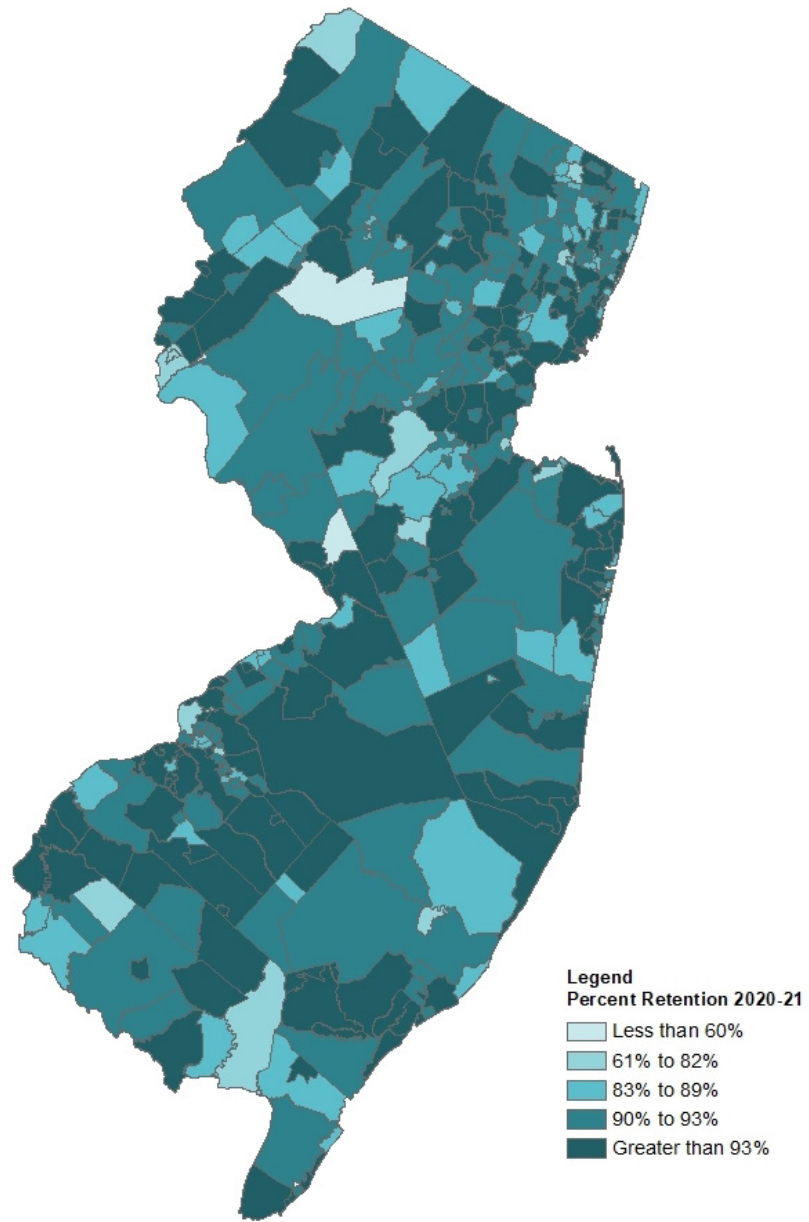


Figure 17: Turnover Rate for Teachers Between 2014-15 and 2020-21

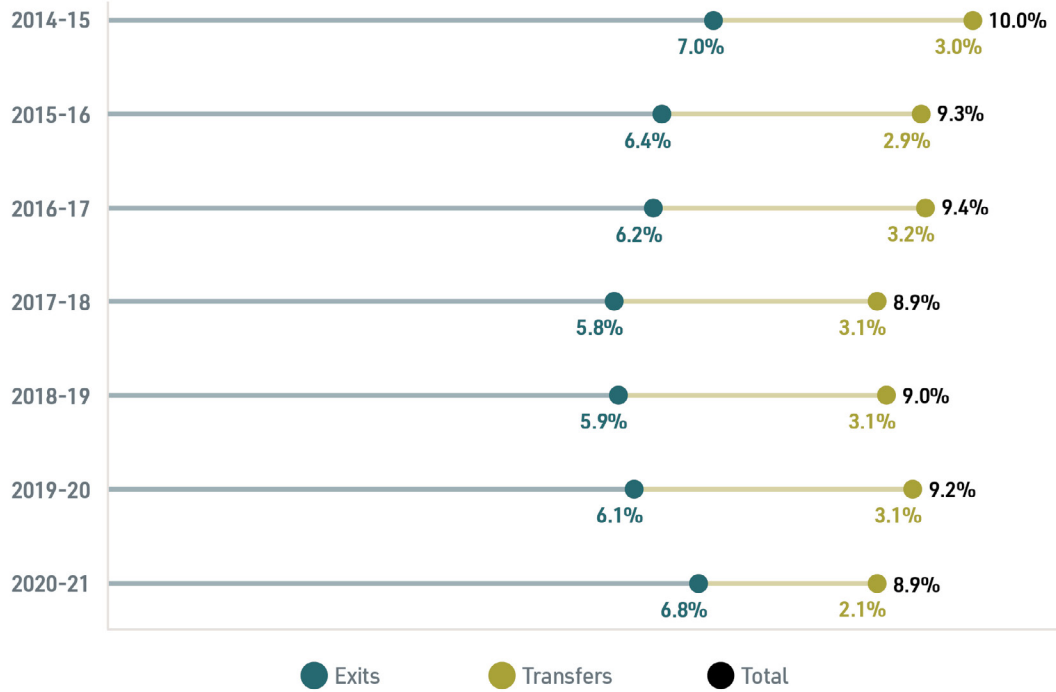
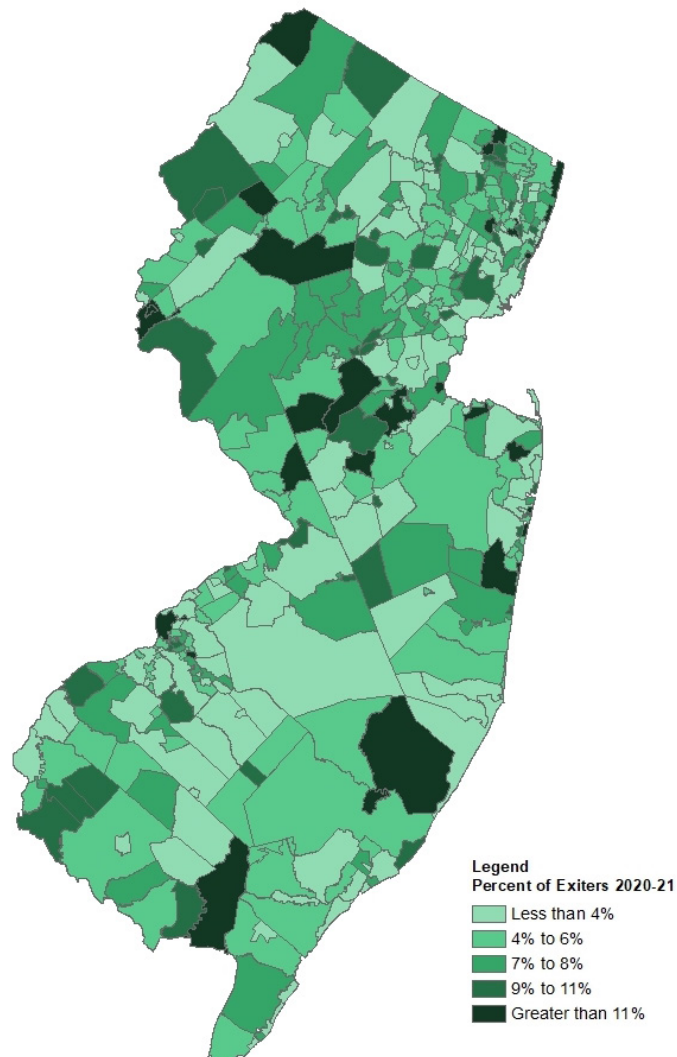


Figure 18: Percentage of Teachers who Exit by LEA in 2020-21 School Year

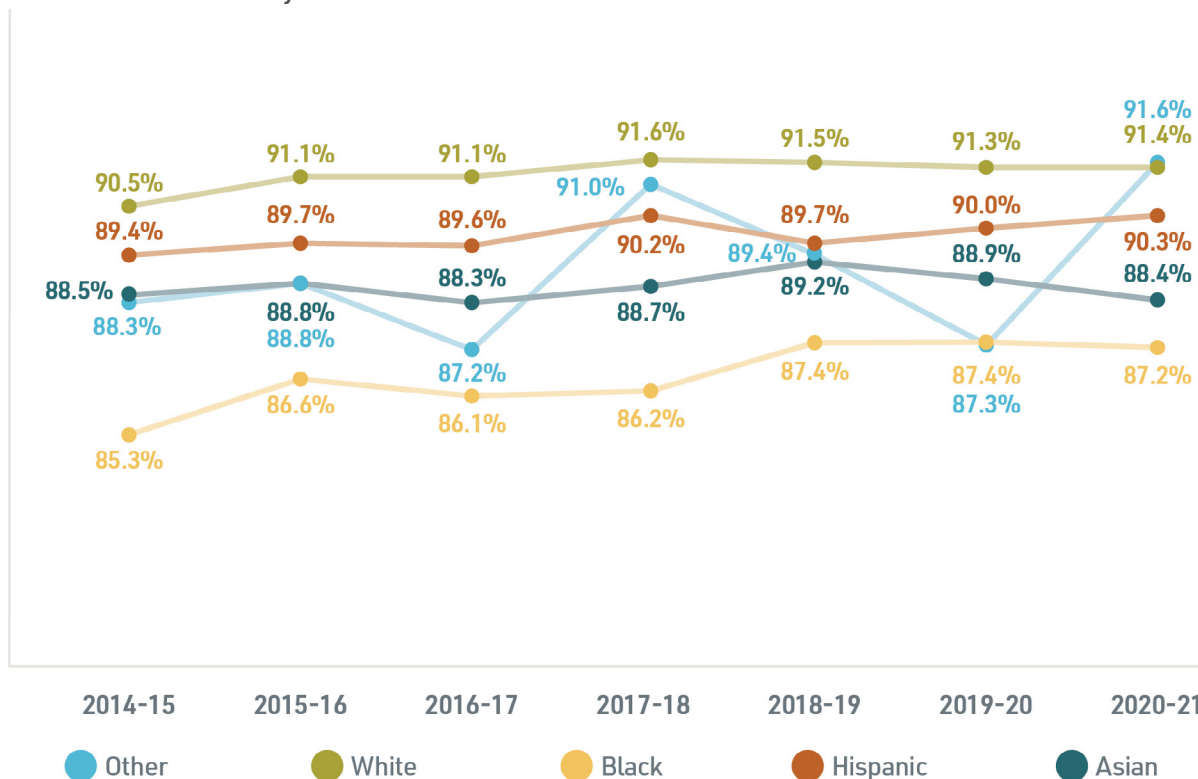




**Finding #10: More likely to leave teaching, Black and/or younger teachers had the lowest retention rates compared to other groups during the period examined. In contrast, non-Hispanic white teachers and/or teachers between the ages of 50 and 59 were the most likely to remain within the same LEA.**

Researchers found substantial variation in teacher retention when broken down by demographic characteristics. In terms of race/ethnicity, Black teachers were less likely to be retained (86.6%) than Hispanic (89.8%) and white (91.2%) teachers, on average (see Figure 19). Though Black and Hispanic teachers had lower retention rates than white teachers, the percentage of teachers identified in these groups that were retained increased more over time.

Figure 19: Teacher Retention by Race Between 2014–15 and 2020–21 School Years



There were also notable differences in retention rate by age (see Figure 20). Statewide, those who were 30 years old or younger were less likely to be retained as teachers in the same LEA. Teachers who were between the ages of 50 and 59 had one of the highest retention rates, though they decreased in recent years, possibly corresponding to individuals choosing early retirement. Those who were between the ages of 30 and 39 were less likely than their older peers to remain as teachers year to year. Researchers observed similar trends for tenured teachers as shown in Figure 21. Unsurprisingly, tenured teachers were much more likely to be retained year to year than untenured teachers across all LEAs and for each year observed.

Researchers observed variation in teacher retention by highest education level attained (see Figure 22). Teachers with vocational certificates were more likely to remain (92.7%) than those at other educational levels. Additionally, there was a substantial decline in the percentage of teachers retained with associate degrees in 2018–19. The percentage of teachers with an associate degree retained in the state peaked in 2017–18 at 92.2% and declined to 80.9% the following year. Though the retention rate has increased for associate degree holders in recent years, they have not yet returned to pre-2018–19 levels. Researchers observed that teacher retention remained relatively consistent for individuals with Bachelor’s or Master’s degrees between 2014–15 and 2020–21, trending near the state average and making up the largest proportion of New Jersey teachers.

Figure 20: Teacher Retention Rate by Age Between 2014–15 and 2020–21 School Years

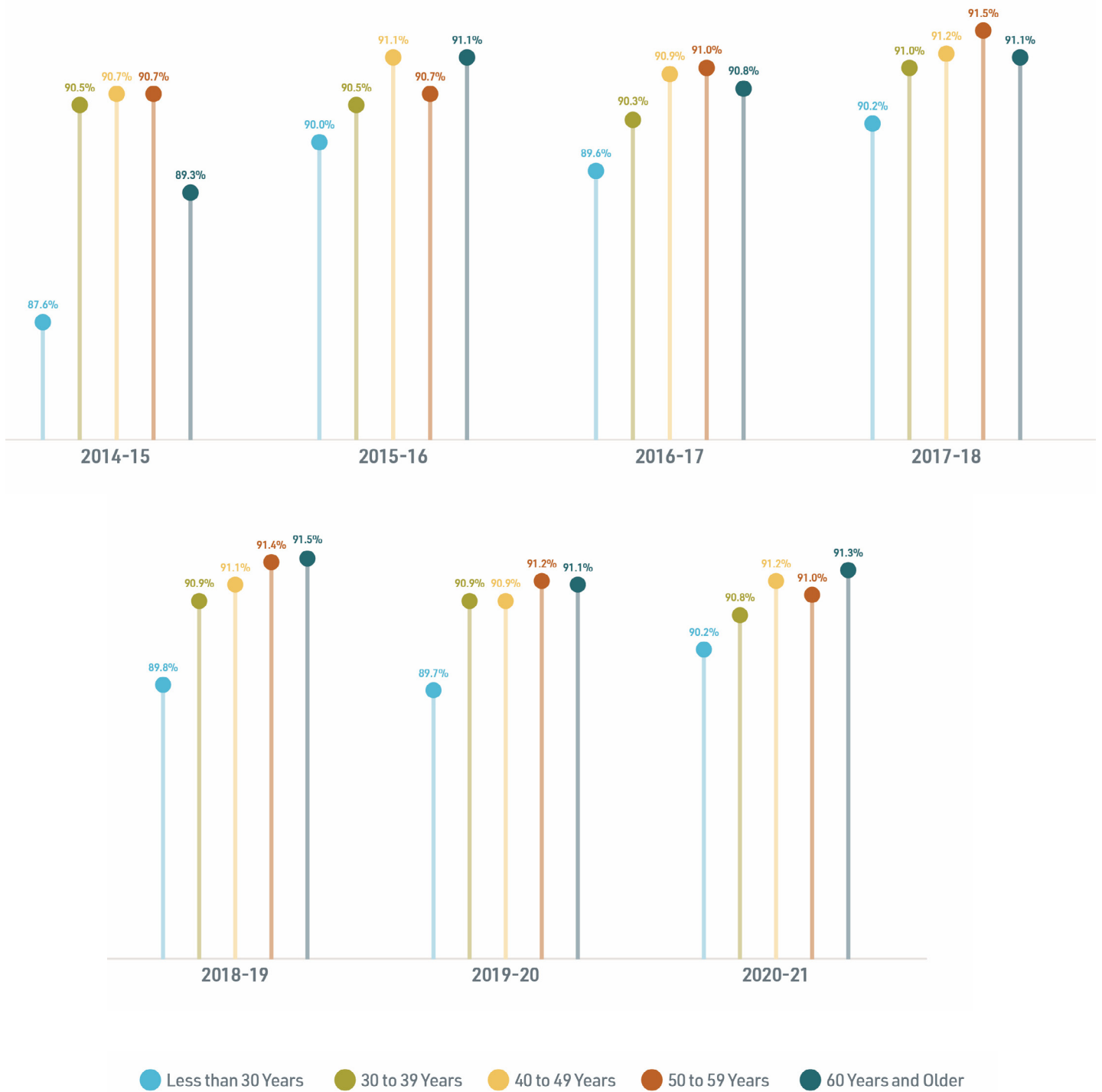
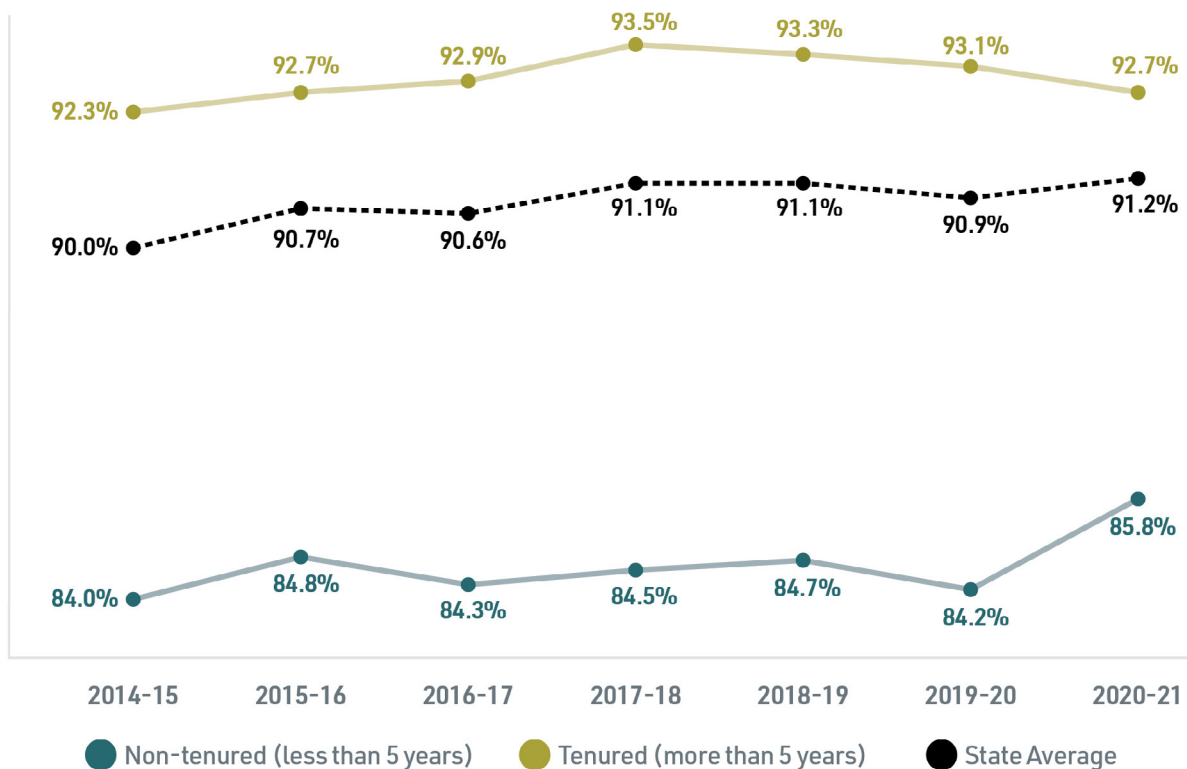


Figure 21: Teacher Retention Rate by Tenure Status Between 2014-15 and 2020-21 School Years



**Finding #11: Same LEA teacher retention rates varied by subject area, where core subjects like world languages, science, English, and mathematics were below average and elementary, social studies, and health and physical education were above average.**

Researchers examined annualized teacher retention rates for subject areas over time compared to the state average (see Figure 23). The analysis revealed that the annualized retention rate for health and physical education (2.1%) and social studies (1.6%) increased over time. By comparison, the annualized retention rate for teacher leaders (-6.8%), vocational education (-5%), and family and consumer sciences (-3.6%) were negative between 2014-15 and 2020-21. High-demand subjects, including mathematics, science, and ELL/bilingual, also had negative annualized retention rates at -0.3%, -1%, and -1.6%, respectively.

Figure 22: Teacher Retention Rate by Highest Education Level Between 2014-15 and 2020-21 School Years

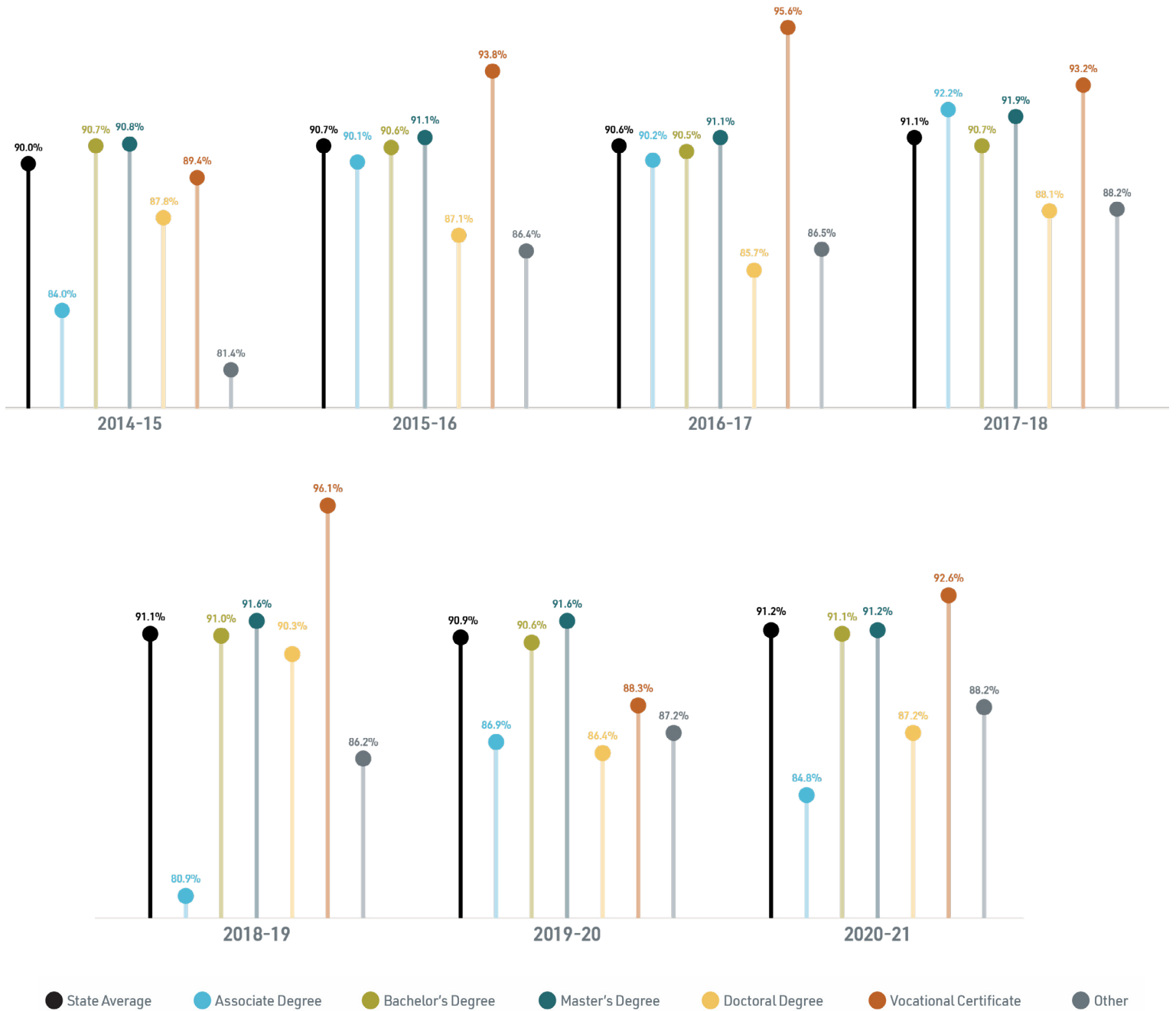
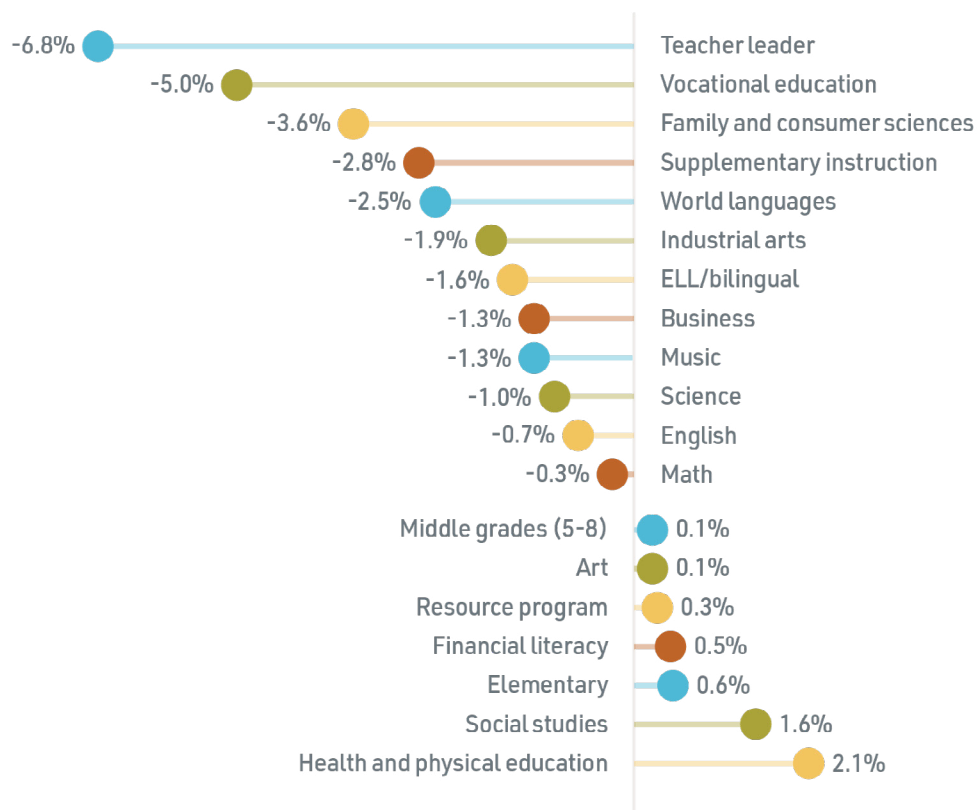


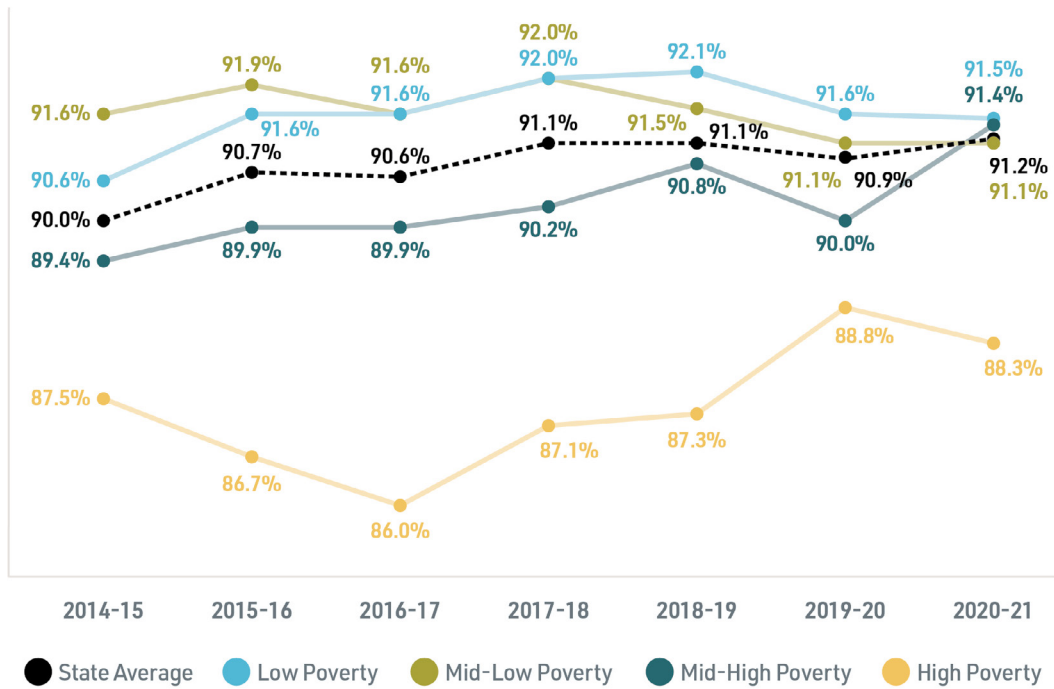
Figure 23: Annualized Retention Index by Subject Area Between 2014-15 and 2020-21 School Years



**Finding #12: High-poverty LEAs had much lower year-to-year teacher retention when compared to LEAs of other poverty levels. Low-poverty LEAs generally exhibited the highest level of teacher retention.**

Another important factor to consider for teacher retention is LEA poverty level. Researchers observed that high-poverty LEAs have lower rates of teachers retained than LEAs that serve students less likely to experience poverty. Figure 24 shows that the proportion of teachers who stay in their LEAs increased over time for high-poverty LEAs, but their retention rate remained well below the state average. All other LEA poverty groups tended to remain closer to the state average, with low-poverty LEAs and mid-low-poverty LEAs consistently retaining teachers above the state average rate.

Figure 24: Teacher Retention Rate by LEA Poverty Level Between 2014–15 and 2020–21 School Years



**Finding #13: The most common reasons given when a teacher exited their position were retirement, accepted employment in a non-teaching occupation, or teaching in another LEA in New Jersey. The number of teachers that left the profession to accept a non-teaching job nearly doubled from 2013–14 to 2020–21.**

NJDOE collects reasons why teachers leave when they end their employment. Figure 25 shows the distribution of exit reasons between 2013–14 and 2020–21. Unfortunately, the most predominant response for the reason of exit was “no reason given for resignation,” which does not provide additional insight for these individuals. The most commonly identified reason was retirements, which increased from around 6,500 in 2013–14 to 6,850 by 2020–21. Though teachers frequently exited to work at another LEA in New Jersey, many teachers indicated that they accepted employment in non-teaching occupations. Indeed, the number of teachers accepting positions elsewhere increased from 1,066 in 2013–14 to 1,980 by 2020–21.

Yet a majority of responses did not provide any reason for resignation. This finding is unsurprising, given that the survey question is optional. Going forward, NJDOE can consider how to capture information more systematically on teacher exits, as it is an opportunity to further understand the potential dynamics fueling the teacher shortage in New Jersey. NJDOE could consider making the identification of an exit reason mandatory instead of optional as it currently stands and including an “other” option that prompts individuals to be more specific about their reasons for exit. There is a potential wealth of information to inform on the factors affecting teacher exits in the state if this collection were revised to gather more robust information from these individuals.

Figure 25: Teachers' Reason for Exiting from Most Recent LEA Employment Between 2013-14 and 2020-21 School Years

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
No reason	7,360	7,199	8,484	8,609	8,978	9,595	10,475	9,963
Retired	6,522	6,329	7,322	7,114	6,890	6,777	7,149	6,850
Accepted non-teaching job	1,066	1,072	1,612	1,209	1,827	1,795	2,109	1,980
Employed at another school district	2,527	2,874	1,095	2,923	3,159	3,598	1,148	1,002
Assumed home duties	602	587	601	548	563	611	579	666
Other leave of absence (planning to return)	284	432	404	382	308	362	328	536
Maternity leave	786	942	790	706	643	629	542	525
Continuing education	247	272	324	257	324	294	358	311
Deceased	227	204	210	219	212	254	254	285
Prolonged illness	184	165	193	147	198	178	201	152
Employed at non-public school	258	301	180	198	320	366	254	142
Employed at public school district outside New Jersey	331	338	87	378	382	467	103	84
Employed at college or university	488	508	108	477	569	667	205	107
<b>Total</b>	<b>20,882</b>	<b>21,223</b>	<b>21,410</b>	<b>23,167</b>	<b>24,373</b>	<b>25,593</b>	<b>23,705</b>	<b>22,603</b>

Note: Due to suppression requirements and low reported figures for several possible LEA employment exit reasons, some of these categories have been summarized or suppressed completely from this figure. Lighter shading indicates relatively fewer teachers exiting for these reasons, while the darkest shading indicates peak years or reasons associated with teacher exits.

## Teacher Pipeline

A central purpose of future *Teacher Workforce Reports* is to compare the supply and demand of teachers and identify potential gaps in the state. This section presents an analysis of those entering the teaching workforce through new endorsements or by enrolling in and/or completing a Bachelor's degree in education in New Jersey. There are **six** key findings associated with the teacher pipeline: three related to certifications and endorsements and three related to teacher preparation.

### Certifications and Endorsements

Important factors in assessing teacher supply are newly certified teachers in the state each year, as well as those that add teaching endorsements that broaden the areas in which they teach. This section reports findings from NJDOE state teaching certification data between 2010 and 2022.<sup>9</sup> Individuals pursuing teaching (instructional) certifications must fulfill an endorsement that identifies the type(s) of subject area(s) they can teach. The total number of certifications and endorsements conferred in any given year, as used in this analysis, includes most types: certificates of eligibility, certificates of eligibility with advanced standing, standard certificates, provisional certificates, and other types of standard certifications. It does not include substitute certifications, however. Since this analysis is inclusive, the term "endorsements" throughout this section will include both the number of certificates and specific endorsements conferred. These findings are summarized for those who completed using the date of issuance by calendar year. This analysis focused on trends within and across subject areas and, therefore, it does not differentiate between different pathways the individuals took to achieve each endorsement. Including all certification types provides a general trend for available teachers in each instructional area, although additional research on the breakdown of certification type may be merited for future studies.

### TEACHER PIPELINE

**Finding #14:** Statewide total certifications and endorsements peaked in 2014 and have declined since then, including overall endorsements and those specific to teachers. Endorsements for non-instructional positions (i.e., administrators, non-instructional staff, etc.) has increased and peaked in 2022.

**Finding #15:** Fewer endorsements have been issued over time across nearly every subject area. Further, it appears the downward trends began before the COVID-19 pandemic and have not shown a significant recovery to pre-pandemic levels.

**Finding #16:** Consistent with national studies and the New Jersey-specific findings in this report, the declining number of endorsements each year point to constraints in filling positions generally, but especially in key high-demand subjects.

**Finding #17:** Most students seeking a Bachelor's degree in education complete their degree, but fewer than half graduate with an education degree.

**Finding #18:** Black and Hispanic students seeking Bachelor's degrees in education are more likely to complete their degree in another major or not complete their degree at all.

**Finding #19:** Significantly fewer students entering New Jersey colleges sought and completed a Bachelor's degree in education, in both the total number of students and the share of the overall student population, since 2012–13.

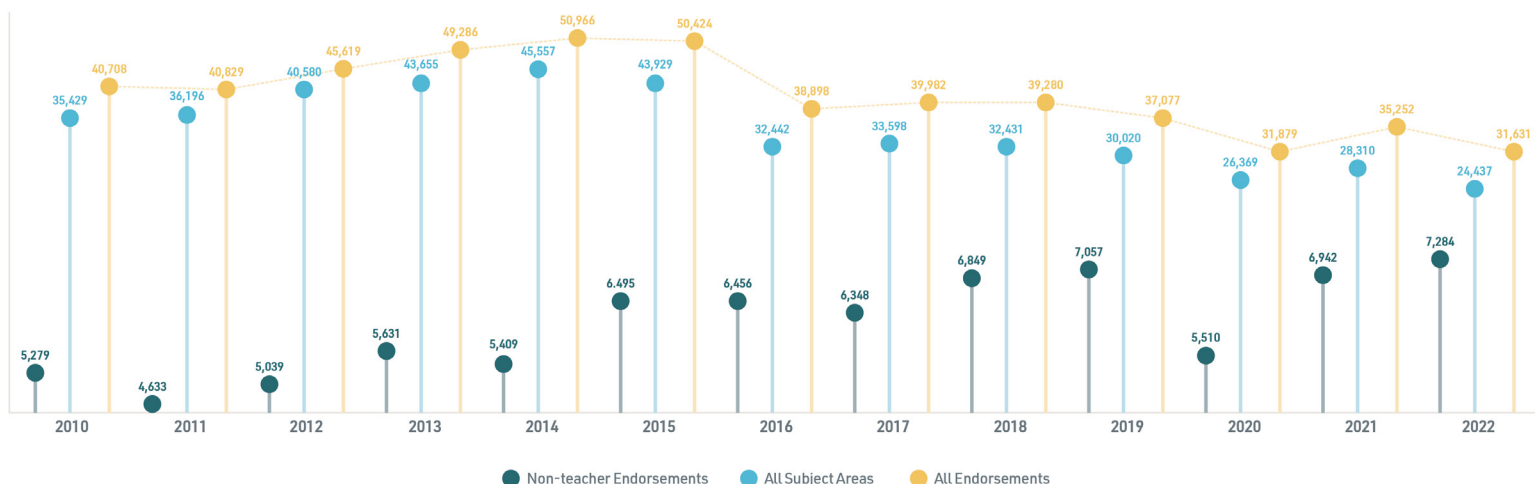
<sup>9</sup> NJDOE data exist for several decades prior to 2010, which may provide opportunity for future studies.



**Finding #14: Statewide total certifications and endorsements peaked in 2014 and have declined since then, including overall endorsements and those specific to teachers. Endorsements for non-instructional positions (i.e., administrators, non-instructional staff, etc.) have increased and peaked in 2022.**

Over the period of 2010 through 2022, the number of total endorsements conferred by NJDOE rose through 2014, with 2014–15 standing out as a clear peak period for endorsements, and then has generally declined since that time. Teaching or instructional endorsements have followed the same general trend as all endorsements. In contrast, non-instructional endorsements, including administrator and educational services endorsements, over this same period grew in both total number and share of all certifications. Non-instructional endorsements were lowest in 2014 at 10.6% and then increased in the following years to 23% of all endorsements in 2022. (See Figure 26.) Coupled with the analysis of teachers' age and rising experience demographics noted in the prior section, one likely explanation is that more experienced teachers began seeking administrator endorsements. A detailed breakdown of these data points is an area for future study.

**Figure 26: All Endorsements, Teaching Endorsements, and Non-teacher Endorsements Issued Each Year, 2010–2022**



**Finding #15: Fewer endorsements have been issued over time across nearly every instructional subject area. Further, it appears the downward trends began before the COVID-19 pandemic and have not shown a significant recovery to pre-pandemic levels.**

Over the years reviewed, the total number of endorsements issued for teachers peaked in 2014 and declined steadily before rising slightly in 2021 (see Figure 27). By 2022, however, total endorsements were the lowest on an annual basis since 2010. Nearly every subject area (and overall endorsements) peaked in 2014 and 2015 and steadily declined until 2020. The number of endorsements conferred in 2020 was likely affected by the COVID-19 pandemic, evidenced by the increase in endorsements in 2021, which potentially indicates lagging entrants/applicants for new credentials. This increase did not last, however, and the total number of endorsements declined in 2022, even below the 2020 COVID-19-impacted year. When additional data become available, more can be learned about the full impact of the pandemic on the number of endorsements. Using reported data through 2022, there is an apparent lasting decline in overall endorsements, and all but three subject areas faced the lowest number of new endorsements in the most recent year. Endorsements for administrative positions, non-instructional certificated staff, and those non-certificated positions are not included in the subject-level analysis. This accounts for the difference between total endorsements and the subtotal of all subjects as outlined.

Figure 27: Endorsements by Subject Area, 2013–2022

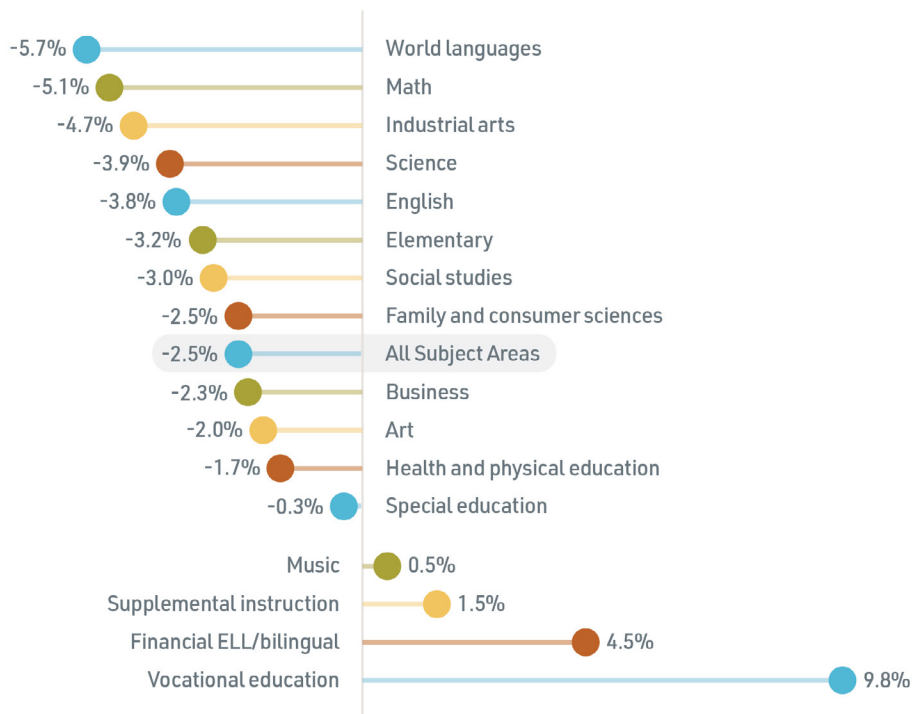
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All endorsements	40,708	40,829	45,619	49,286	50,966	50,424	38,898	39,982	39,280	37,077	31,879	35,252	31,631
Subtotal	35,429	36,196	40,580	43,655	45,557	43,929	32,442	33,598	32,431	30,020	26,369	28,310	24,347
Art	785	811	811	858	901	864	648	680	680	631	597	705	570
Business	264	199	207	219	251	227	129	133	89	90	89	67	121
Elementary	16,167	16,383	18,339	18,939	19,912	18,964	13,899	14,401	13,883	12,734	11,318	12,076	10,211
ELL/bilingual	676	685	784	960	1,106	1,243	1,084	1,052	979	996	867	986	1,074
English	2,587	2,683	3,000	3,368	3,361	2,947	2,095	2,172	2,026	1,848	1,534	1,716	1,450
Family and consumer sciences	66	69	69	93	79	65	60	53	44	35	38	53	38
Health and physical education	1,255	1,326	1,382	1,602	1,672	1,623	1,062	1,151	1,079	1,075	882	1,001	896
Industrial arts	120	95	100	94	127	136	73	89	92	76	75	72	48
Math	2,408	2,447	2,760	3,176	3,085	2,664	1,824	1,900	1,833	1,683	1,387	1,393	1,138
Music	614	605	760	866	856	967	662	731	674	677	637	665	574
Special education	5,372	5,971	6,791	7,425	8,111	8,114	6,593	6,776	6,718	6,127	5,424	5,673	4,862
Science	1,796	1,755	1,983	2,134	2,213	2,201	1,522	1,595	1,478	1,354	1,096	1,201	998
Social studies	1,917	1,965	2,203	2,399	2,406	2,300	1,578	1,667	1,548	1,437	1,242	1,422	1,190
Supplemental instruction	148	114	152	123	115	164	173	179	248	181	149	187	116
Vocational education	220	198	273	333	321	350	309	319	366	495	504	536	602
World languages	1,034	890	966	1,066	1,041	1,100	731	700	694	581	530	557	459

Note: Lighter shading indicates lower numbers of endorsements for each subject area in that year, whereas darker shading indicates higher numbers of endorsements issued by subject area compared to other years and the darkest shading indicates peak years.

Further highlighting the downward trend in the issuance of new endorsements, the average annual change from 2010 to 2022 by subject shows that only four subject areas indicated a positive average annual growth (see Figure 28). Although overall, all subject areas declined an average of 2.5% each year, subjects such as vocational instruction (9.8%), ELL/bilingual (4.5%), supplemental instruction (1.5%), and music (0.5%) all showed positive growth over this period. Due to relatively large gains in earlier years, music still had an overall positive annual growth rate; however, in recent years, the number of new endorsements has decreased considerably. Every other subject area declined, on average, on an annual basis.

There were seven subject areas that showed an annual average decline in endorsements that outpaced the state average for all instructional area endorsements. World languages declined the most by this measure at -5.7% per year on average. Following closely behind were mathematics (-5.1%), industrial arts (-4.7%), science (-3.9%), and English (-3.8%). Still indicated negative annual growth, but closer to the state average, were elementary (-3.2%), social studies (-3.0%), and family and consumer sciences (-2.5%).

Figure 28: Average Annual Percentage Change of Endorsements by Subject Area Between 2013–14 and 2020–21 School Years



**Finding #16: Consistent with national studies and the New Jersey-specific findings in this report, the declining number of endorsements each year point to constraints in filling positions generally, but especially in key high-demand subjects.**

Focusing on endorsements issued to individuals each year provides a backdrop to the discussion happening in New Jersey and nationally about teaching shortages. Subject areas with negative annualized retention rates and increasing student-to-teacher ratios, including mathematics, English, science, ELL/bilingual, and world languages, experienced precipitous declines in the number of endorsements issued in recent years. As highlighted in Table 1, most subject areas have experienced a sizeable decline in the total number of endorsements since their peak, typically around 2013 to 2015. From their peak year of endorsements, 14 subject areas were found to have a decrease of more than 35%. Only ELL/bilingual (-13.6%) saw more modest reductions and vocational education, which peaked in 2022, is the only subject area to have its highest total of endorsements within the past four years.

**Table 1: Peak Year of Endorsements for Each Subject Area and Percent Change from Peak Year to 2022**

<b>Subject Area</b>	<b>Year of Peak Endorsements Issued</b>	<b>Percent Change from Peak Year to 2022</b>
Art	2014	-36.7%
Business	2014	-51.8%
Elementary	2014	-48.7%
ELL/bilingual	2015	-13.6%
English	2013	-56.9%
Family and consumer sciences	2013	-59.1%
Health and physical education	2014	-46.4%
Industrial arts	2015	-64.7%
Mathematics	2014	-63.1%
Music	2015	-40.6%
Special education	2015	-40.1%
Science	2014	-54.9%
Social studies	2014	-50.5%
Supplemental instruction	2018	-53.2%
Vocational education	2022	NA
World languages	2015	-58.3%
<b>All subjects</b>	<b>2014</b>	<b>-46.6%</b>
<b>All endorsements</b>	<b>2014</b>	<b>-37.9%</b>

### **Teacher Preparation**

Students who pursue education majors are another important aspect of the teacher pipeline. To examine students who pursue these educational pathways, researchers considered the trajectory of students who enrolled at postsecondary institutions in New Jersey between the 2012–13 and 2015–16 school years to include sufficient time for students to complete their degree. The sample size is 152,229 students. Table 2 shows the distribution of the sample by school year.

**Table 2: Distribution by School Year of Enrollment**

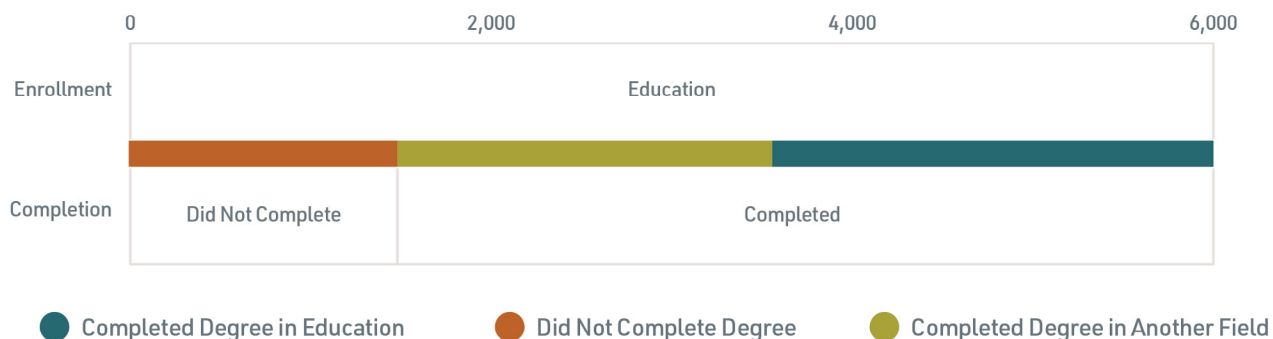
<b>School Year</b>	<b>Number of Students</b>
2012–13	36,114
2013–14	37,323
2014–15	38,832
2015–16	39,960
<b>Total</b>	<b>152,229</b>

**Finding #17: Most students seeking a Bachelor’s degree in education complete their degree, but fewer than half graduate with an education degree.**

Analyzing the sample revealed that 4.1% of students enroll and pursue an education major (see Figure 29). This represents around 6,000 students during this period. The remaining percentage of students (95.9%) enroll and pursue other majors. Of those who declared an education major upon enrollment, 43.6% completed their degree in education, 31.9% completed their degree in another major, and 24.5% did not complete their Bachelor’s degree.

**Figure 29: Students’ Trajectory in Enrollment and Completion**

**Number of Students Declaring Education Major**

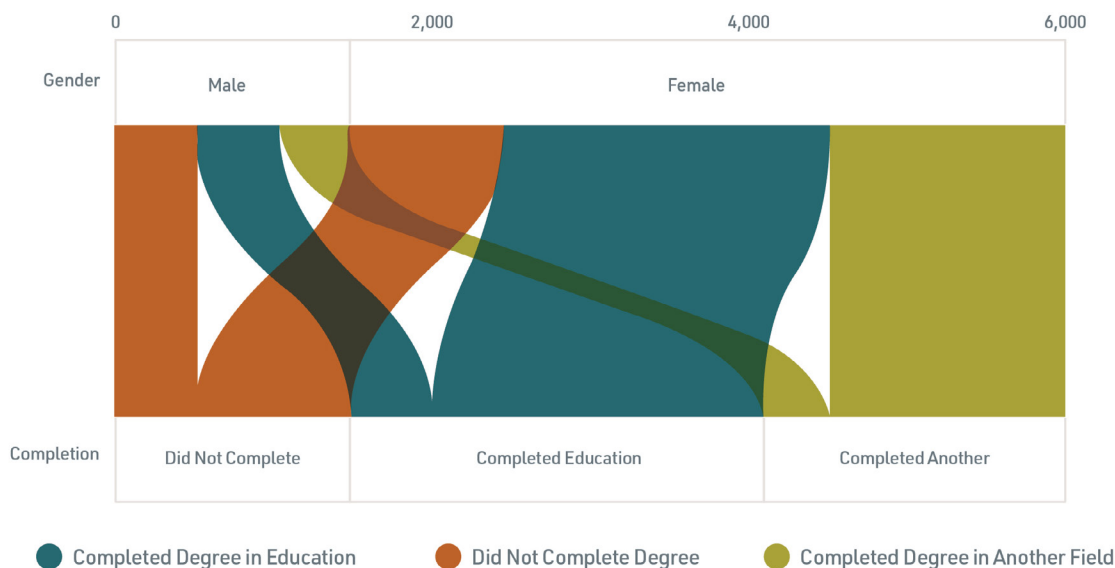


*Note: Includes students who enrolled at postsecondary institutions in New Jersey between the 2012–13 and 2015–16 school years.*

Researchers found that 72% of students who enrolled in and declared majors other than education completed their degree, while 27.2% did not complete their degree (see Figure 30). Only 0.8% of these students switched into education and completed their degree. These findings may indicate that students find it easier to enroll as an education major and change their path, as opposed to declare another major and switch to education. Analyzing demographic characteristics of students pursuing an education degree revealed that most education majors are female (75.7%).<sup>9</sup>

**Figure 30: Students’ Trajectory in Enrollment and Completion by Sex**

**Number of Students Declaring Education Major**



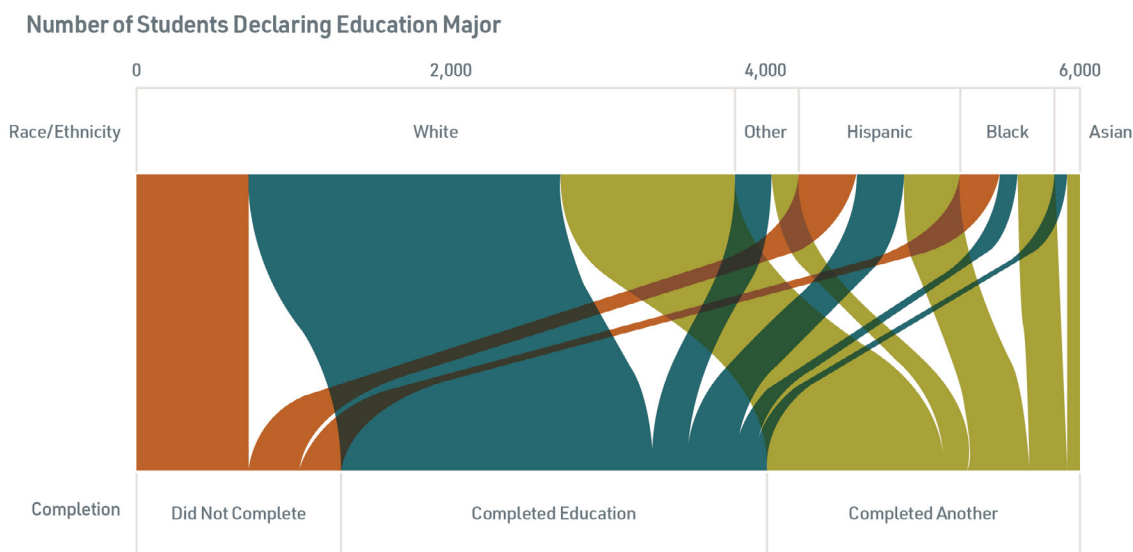
*Note: Includes students who enrolled at postsecondary institutions in New Jersey between the 2012–13 and 2015–16 school years.*

<sup>9</sup> A small number of students had an unknown sex. To minimize suppression, researchers followed guidelines from the Code of Federal Regulation to disclose information (34 CFR 99) and recorded records with an unknown sex as male. Given the small sample size of records with an unknown sex, this did not significantly affect overall trends.

**Finding #18: Black and Hispanic students seeking Bachelor’s degrees in education are more likely to complete their degree in another major or not complete their degree at all.**

There were key findings for students pursuing education degrees by race/ethnicity.<sup>10</sup> Figure 31 shows the number of students who completed an education degree, completed their degree in another major, or did not complete it. The racial and ethnic categories included in this figure are Asian, American Indian/Alaska Native, and Native Hawaiian/Pacific Islander (“Asian”); Black/African American (“Black”); Hispanic/Latino (“Hispanic”); Multiple/Unspecified (“other”); and white (“white”). Figure 31 shows that most students enrolled in and pursuing an education degree are white (63.7%), followed by Hispanic (17.1%), Black (9.9%), other (6.7%), and Asian (2.6%).<sup>11</sup>

**Figure 31: Students’ Trajectory in Enrollment and Completion by Race/Ethnicity**



*Note: Includes students who enrolled at postsecondary institutions in New Jersey between the 2012–13 and 2015–16 school years.*

Researchers observed that white students were more likely to enroll in and complete their degree in education (51.7%) compared to other races. Only 29.9% of Hispanic students enrolled in and completed their education degree compared to 19.5% of Black students. At the same time, 29.5% of white students completed their degree in another major after declaring in education, compared to 36.2% and 40.3% of Hispanic and Black students, respectively. Only 18.8% of white students did not complete their degree. Higher percentages of Hispanic and Black students did not complete their degrees (33.9% and 40.3%, respectively).

**Finding #19: Significantly fewer students entering New Jersey colleges sought and completed a Bachelor’s degree in education, in both the total number of students and the share of the overall student population, since 2012–13.**

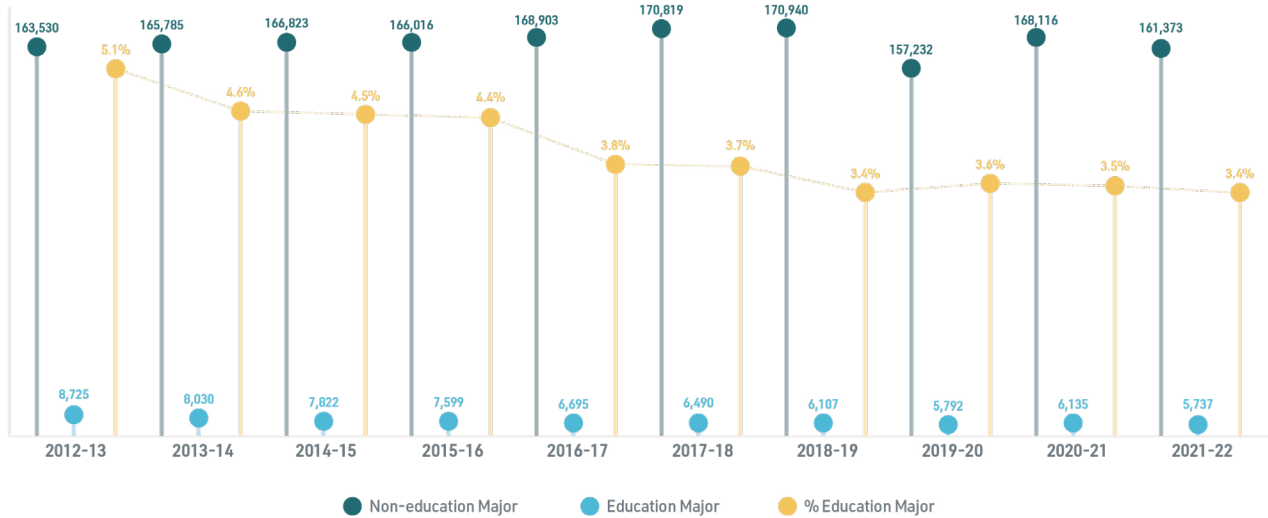
This analysis also examined the number of students who enrolled and/or completed their degree in education between 2012–13 and 2021–22. The sample included in Figure 32 differs from previous figures because it shows every student who enrolled at postsecondary institutions to pursue a Bachelor’s degree in New Jersey and, separately, those who completed their degree. Researchers found that the percentage of students enrolling and completing degrees in education has declined over time when compared to all students. Approximately 8,700 students enrolled at postsecondary institutions and declared an education major in 2012, compared to around 5,700 students in 2021.

<sup>10</sup> Researchers combined categories to comply with data security and confidentiality requirements associated with NJEEDS. This analysis combined select races and ethnicities to minimize suppression and suppressed cells with small sample sizes.

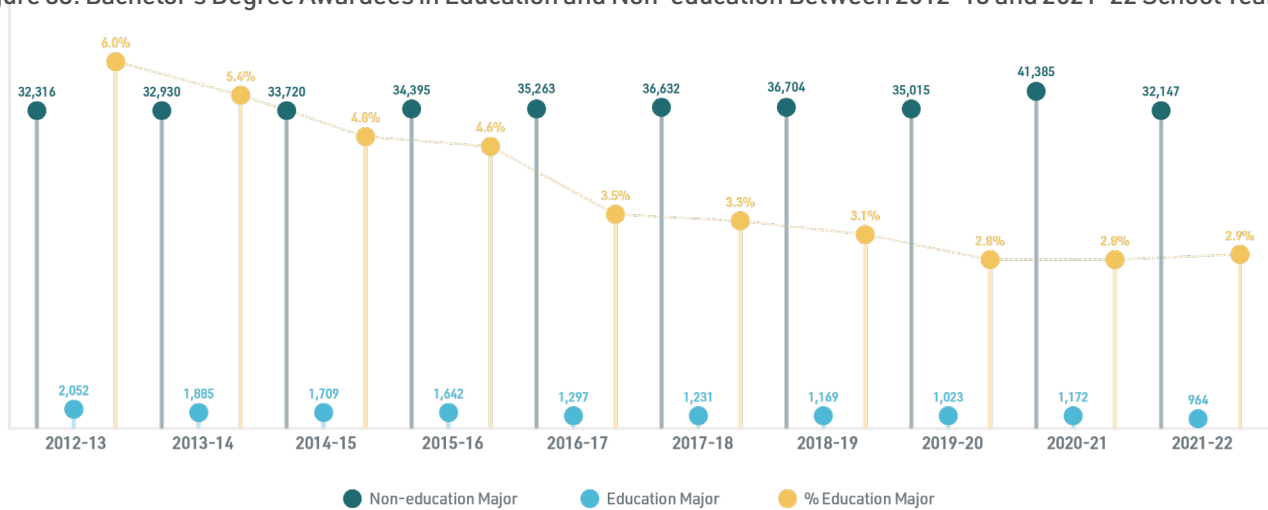
<sup>11</sup> Given the limitations of suppression practices, the research team used caution in interpreting any results for students labeled as Asian or other.

At the same time, the number of students completing their Bachelor's degree in education decreased from around 2,000 in 2012-13 to fewer than 1,000 in 2021-22 (see Figure 33). By comparing the overall student population completing a Bachelor's degree during this period, researchers found that the percentage of students completing an education degree fell from 6% of their peers in 2012-13 to 2.9% in 2021-22.

**Figure 32: Education and Non-education Student Enrollment in Bachelor's Programs Between 2012-13 and 2021-22 School Years**



**Figure 33: Bachelor's Degree Awardees in Education and Non-education Between 2012-13 and 2021-22 School Years**



## Data Limitations and Next Steps

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In compiling this analysis, Heldrich Center researchers focused on creating metrics using the currently available data to better understand the trends within the New Jersey teacher workforce. To both understand and address the immediate concerns with teacher shortages, further investigation should be done to better learn about prospective and current teacher dynamics, including but not limited to: (1) the choices that individuals face in selecting a career path, (2) how individuals assess the day-to-day stresses and working conditions of teaching, (3) the impact of pay, (4) differences in pathways (such as alternative route) for new teachers, and (5) how such factors work to affect entrance and retention in the field. Each individual, whether choosing not to pursue a degree in the education field or deciding to exit the teaching profession to pursue another career, makes these choices based on a set of complex and highly personal reasons. Future studies could be done that leverage both quantitative and qualitative methods to further shed light on the factors that influence individuals considering a career in education and teachers already working in the profession.

As next steps, NJDOE can consider how to expand and/or improve aspects of data collection that could more systematically inform on teacher vacancies and teacher exits. Much of this work is already under way, as new data points and collections are being developed for these purposes. The data included in this analysis were developed for other specific reporting and compliance purposes and were not specifically collected for the purpose of informing teacher shortages in the state – NJDOE is taking a novel approach to use robust data that is currently collected to help understand the teacher workforce. More deliberate future data collections can be aimed at collecting teacher vacancy data, which could shed light on the dynamics of vacancies within and across school districts, thereby contributing to a more nuanced understanding of the teacher shortage in New Jersey. Additionally, NJDOE's current survey that collects reasons for teacher exits could be amended to have the exit-focused question be mandatory. At present, the most common answer is "no reason," which fails to capture a potential wealth of information on the reasons driving teacher exits. Data collections specifically aimed at understanding the teacher workforce, specifically vacancy data and reasons for exit, could inform on a host of critical teacher workforce dynamics driving the trends highlighted in this report. Additional data collection could also empower researchers to track individual outcomes in the NJEEDS data by linking to other administrative data from OSHE or the New Jersey Department of Labor and Workforce Development to better understand the journey for individuals in the teacher workforce or pipeline.

## Key Takeaways

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The Heldrich Center research team identified **seven** key takeaways. These takeaways shed greater light on the nuances of the teacher shortage in New Jersey.

- ▶ Since the number of teachers in New Jersey has increased and the statewide student enrollment has declined, data revealed that the student-teacher ratio declined slightly between the 2013–14 and 2020–21 school years. **However, broken down by subject area, there were increases to the student-teacher ratio, specifically in high-demand subject areas, such as mathematics, science, and world languages.** The student-teacher ratio varied by LEA across the state, necessitating further exploration of regional variations and how staffing levels affect both teachers and students in the classroom.



- ▶ **Between the 2013–14 and 2020–21 school years, New Jersey experienced significant declines in the number of teachers working in the profession across 10 subject areas, including core subjects, such as mathematics, English, science, world languages, and social studies.** This trend in New Jersey is aligned with trends observed at the national level, indicating that core subject areas are broadly experiencing a decline in number of qualified teachers entering and staying in the field, thereby also limiting the policy solutions to address such critical staffing shortages in New Jersey.
- ▶ **The distribution of teachers that remained in an LEA year to year, transferred to a different LEA, or exited the New Jersey public school system did not change substantially between 2013–14 and 2020–21. On average, about 9% of teachers either moved to a different LEA or exited from public schools each year.** The percentages of teachers who stayed, transferred, and exited varied by LEAs across the state. For this reason, more investigation could be done for LEAs with lower-than-average percentages of teachers remaining in the LEA.
- ▶ **In examining teacher retention, researchers observed substantial variation in teacher retention when broken down by teacher demographic characteristics, subject area, and LEA poverty level.** The factors driving teacher retention are complex, but there are notable trends observed among teachers who are more likely to exit their LEA or exit the field. It is important to note that core subject areas, including mathematics, science, English, and world languages, saw declines in teacher retention rates, which highlights critical concentrations of need with teacher vacancies in New Jersey.
- ▶ **NJDOE has issued fewer endorsements in recent years, across nearly every subject area.** The steady decline of endorsements between the 2013–14 and 2020–21 school years serves to exacerbate the teacher shortage in New Jersey in critical subject areas of need in the state. With the current rate of decline in endorsements, the state will likely continue to experience staffing challenges with fewer individuals receiving endorsements to teach and/or teach another subject area.
- ▶ **New Jersey has experienced a significant decline in the number of individuals seeking and completing a Bachelor's degree in education.** Though students may pursue Bachelor's degrees in another area of study and become teachers, this decline directly affects the number of teachers entering the workforce. In this way, the teacher pipeline in New Jersey is weakened and not keeping pace with the demand for teachers needed across LEAs, both in general and core subject areas.
- ▶ **Overall, the COVID-19 pandemic only had a small impact on the teacher workforce in New Jersey.** The observed declines in individuals pursuing a Bachelor's degree in education and endorsements in core subject areas began before the onset of the COVID-19 pandemic. While the pandemic highlighted issues with the teacher workforce, the roots of the challenges fueling shortages in the classroom predate the COVID-19 pandemic and the 2019-20 school year.

## Conclusion

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It is clear that New Jersey public schools are experiencing teacher shortages and staffing challenges. The Heldrich Center's findings show that there are fewer endorsements and fewer students pursuing and completing Bachelor's degrees in education in recent years. This corresponds with substantial gaps of teachers in specific subject areas, including mathematics, English, science, world languages, and social studies, with negative implications in meeting the demand for teachers in the near future. The interpretation of the data evaluated for this study across New Jersey LEAs presents some analytical limitations as outlined in this report, including issues commonly faced when using data originally collected for compliance reasons to answer questions outside of the initial purpose when developing those data collections.

Based on this analysis, there are clear implications for future *Teacher Workforce Reports* anticipated for completion in early 2024. The Heldrich Center team highlighted the following **two** potential implications for consideration.

- ▶ Trends observed in New Jersey, particularly the struggle to find qualified teachers in core subject areas, are consistent with those documented at the national level. This suggests that New Jersey is not unique in its teacher shortage challenges, but that the solutions to address these shortages will likely have to be innovative and complex. New Jersey will not be able to solve the shortage of teachers in core subject areas by simply looking to recruit teachers from neighboring states like New York and Pennsylvania, which are likely experiencing the same universal deficits in core subject areas. Doing so may be part of a collection of coordinated efforts, but this trend implies that the solution to New Jersey's teacher shortage will broadly have to focus on diversifying talent pools, developing talent, and cultivating greater interest in the teaching profession.
- ▶ To investigate the teacher shortage more systemically in New Jersey, additional data are needed on teacher vacancies and teacher exits. By collecting teacher vacancy data by LEA and subject area, NJDOE would be able to address vacancy trends more directly within and across LEAs in New Jersey. Additionally, current NJDOE data collection efforts could be expanded, particularly in respect to collecting more information on teacher exits and postings. More specifically, NJDOE's current data collection mechanism that captures reasons for teacher exits is limited and includes an option for non-response, which diminishes the potential wealth of information that could be derived from this line of inquiry. Further, additional information on vacancies at the LEA level, by subject and grade level, will improve the understanding of the breadth of shortages in the state. Collecting more data on critical teacher dynamics, such as vacancy and exit data, would enable the state to make more informed policy decisions to effectively address the teacher shortage in New Jersey.

## References

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Allegretto, S. (2022). *The teacher pay penalty has hit a new high: Trends in teacher wages and compensation through 2021*. Economic Policy Institute. <https://www.epi.org/publication/teacher-pay-penalty-2022/>

Carver-Thomas, D. (2022). *Teacher shortages take center stage*. Learning Policy Institute. <https://learningpolicyinstitute.org/blog/teacher-shortages-take-center-stage>

Code of Federal Regulations, Title 34 - Education, Part 99. Family Educational and Privacy Rights (34CFR99). U.S. Government Printing Office.

Cross, F. (2017). *Teacher shortage areas nationwide listing 1990–1991 through 2017–2018*. Office of Postsecondary Education, U.S. Department of Education. <https://www2.ed.gov/about/offices/list/ope/pol/ateachershortageareasreport2017-18.pdf>

García, E., & Weiss, E. (2019). *U.S. schools struggle to hire and retain teachers*. Economic Policy Institute.

Gross, H. (2023). New law provides limited help on teacher shortage. *NJ Spotlight News*.

Heim, J. (2016, September 14). America has a teacher shortage, and a new study says it's getting worse. *The Washington Post*. [https://www.washingtonpost.com/local/education/america-has-a-teacher-shortage-and-a-new-study-says-its-getting-worse/2016/09/14/d5de1cee-79e8-11e6-beac-57a4a412e93a\\_story.html](https://www.washingtonpost.com/local/education/america-has-a-teacher-shortage-and-a-new-study-says-its-getting-worse/2016/09/14/d5de1cee-79e8-11e6-beac-57a4a412e93a_story.html)

McVey, K. P., & Trinidad, J. (2019). *Nuance in the noise: The complex reality of teacher shortages*. Bellwether Education Partners.

Natanson, H. (2022, August 4). "Never seen it this bad": America faces catastrophic teacher shortage. *The Washington Post*. <https://www.washingtonpost.com/education/2022/08/03/school-teacher-shortage/>

National Center for Education Statistics. (2022a). *Forty-five percent of public schools operating without a full teaching staff in October, new NCES data show*. [https://nces.ed.gov/whatsnew/press\\_releases/12\\_6\\_2022.asp](https://nces.ed.gov/whatsnew/press_releases/12_6_2022.asp)

National Center for Education Statistics. (2022b). *Public and private schools reported difficulty filling teaching vacancies during the first full year of the COVID-19 pandemic*. [https://nces.ed.gov/whatsnew/press\\_releases/12\\_13\\_2022.asp](https://nces.ed.gov/whatsnew/press_releases/12_13_2022.asp)

New Jersey Administrative Code, Title 6A - Education, Chapter 9B - State Board of Examiners and Certification (NJ Admin. Code § 6A:9B-4.5).

New Jersey Administrative Code, Title 6A - Education, Chapter 14 - Special Education (NJ Admin. Code § 6A:14).

New Jersey Department of Education. (n.d.). *Comprehensive family and consumer sciences certificate of eligibility (Endorsement Code: 1705)*. <https://nj.gov/education/license/endorsements/1705CE.pdf>

New Jersey Statute, Section 18A - Instructional Certificate; Technology Education Endorsement; Industrial Arts Endorsement (N.J. Stat. § 18A:26-2.6).

Shaeffer, K. (2022). *A dwindling number of new U.S. college graduates have a degree in education*. Pew Research Center. <https://www.pewresearch.org/short-reads/2022/09/27/a-dwindling-number-of-new-u-s-college-graduates-have-a-degree-in-education/>

Schmitt, J., & deCourcy, K. (2022). *The pandemic has exacerbated a long-standing national shortage of teachers*. Economic Policy Institute.

Taie, S., & Lewis, L. (2022). *Characteristics of 2020–21 public and private K–12 school teachers in the United States: Results from the National Teacher and Principal Survey, first look*. U.S. Department of Education, National Center for Education Statistics. <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2022113>

Task Force on Public School Staff Shortages in New Jersey. (2023). *Initial recommendations from members of the Task Force on Public School Staff Shortages in New Jersey*.

Turner, C., & Cohen, N. (2023, March 2). *6 things to know about U.S. teacher shortages and how to solve them*. National Public Radio. <https://www.npr.org/2023/03/23/1164800932/teacher-shortages-schools-explainer>

U.S. Census Bureau. (2022). *QuickFacts - New Jersey*. <https://www.census.gov/quickfacts/fact/table/NJ/PST045222>

U.S. Department of Education. (n.d.-a). *Addressing the teacher shortage with American Rescue Plan funds*. <https://www2.ed.gov/documents/coronavirus/teacher-shortage.pdf>

U.S. Department of Education (n.d.-b). *Elevating teaching*. <https://www.ed.gov/teaching>

Weber, M. (2020). *New Jersey's shrinking pool of teacher candidates*. New Jersey Policy Perspective. <https://www.njpp.org/wp-content/uploads/2020/05/NJPP-Report-New-Jerseys-Shrinking-Pool-of-Teacher-Candidates.pdf>

Will, M. (2022, August 22). The gap between teacher pay and other professions hits a new high. How bad is it? *Education Week*. <https://www.edweek.org/teaching-learning/the-gap-between-teacher-pay-and-other-professions-hits-a-new-high-how-bad-is-it/2022/08>

Zamarro, G., Camp, A., Fuchsman, D., & McGee, J. B. (2021). *How the pandemic has changed teachers' commitment to remaining in the classroom*. Brookings. <https://www.brookings.edu/articles/how-the-pandemic-has-changed-teachers-commitment-to-remaining-in-the-classroom/>

## Appendix: Technical Methodology

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Heldrich Center researchers completed this analysis using New Jersey Education to Earnings Data System (NJEEDS) data between the 2013–14 school year and the 2020–21 school year. The New Jersey Department of Education (NJDOE) is a partner agency in maintaining data in NJEEDS, including the primary data source used for this study – the New Jersey Standards Measurement and Resource for Teaching (NJ SMART) data system – as well as other data comprised in the NJEEDS longitudinal system. This work focused on data that come from the Staff Member Identification (SMID) extract, which provides detailed information on current staff members in each New Jersey school district. To supplement these data, the Heldrich Center included an analysis of postsecondary enrollment and completion data from the Office of the Secretary of Higher Education (OSHE). Researchers assessed the changes in the teacher pipeline by examining the number and types of certifications or endorsements conferred by NJDOE between 2010 and 2022. This study overall sought to address two primary research questions related to the teacher workforce in New Jersey.

### Research Questions

1. What are the current teaching positions, by certification area, in high demand in the state?
2. What certification or geographic areas are at higher-than-average risk of teacher shortages?

### Data Analysis

The Heldrich Center addressed these research questions through three main streams of analysis. Researchers first analyzed the current teacher workforce landscape, then assessed exits or inter-district transfers by various characteristics over time and identified potential fields or geographic areas at risk of higher-than-average turnover. Finally, a review of individuals entering postsecondary schools and those attaining a teaching endorsement was completed to assess new entrants into the field. Provided below is more information about the data sources used in this analysis.

#### **NJDOE Data**

##### *NJ SMART Data*

To analyze the current teacher workforce landscape and assess teacher exits by subgroup, researchers used NJDOE's NJ SMART data between the 2013–14 and 2020–21 school years, which are housed within NJEEDS. For each year, teachers were defined using the unique SMID within these data files and was limited to those that held a certificated teaching position within the district for at least a portion of their time. Full-time administrators, certificated non-teaching positions, and non-certificated staff were not included in this analysis.

Analyzing these staff-level data enabled researchers to gain understanding about the roles individuals are serving in their district, and to create trends for changes in staffing levels by subject over time. Specifically, they calculated the total full-time equivalent for all teachers within the job code range of 1000 to 2999. These job codes encompass categories, such as elementary, middle grade (grades five to eight), art, business, English, world languages, health/physical education, family and consumer sciences, industrial arts, mathematics, financial literacy, music, science, social studies, supplementary instruction, resource program, teacher coach coordinator leader, and vocational education. Refer to Table A-2 for specific job codes assigned to each subject area.

Detailed data on race/ethnicity and ethnicity from NJ SMART were combined to develop race/ethnicity to enable comparison and limit the impacts of required suppression rules due to low observations of certain racial and ethnic demographics. In doing so, five race/ethnicity identifiers were created: non-Hispanic Asian (Asian), non-Hispanic Black (Black), Hispanic (Hispanic), non-Hispanic white (white), and other. The other category includes teaching staff who identify as American Indian/Alaska Native and/or Native Hawaiian/Pacific Islander.

Researchers analyzed several factors affecting the teacher workforce in New Jersey, including **poverty status**, **tenure status**, and **teacher retention**. Table A-1 shows how each variable was measured for this analysis.

**Table A-1: Measurements for Poverty Status, Tenure Status, and Teacher Retention**

### Poverty Status

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#### *Free or Reduced-price Lunch (FRPL) System*

- ▶ Not eligible
- ▶ Enrolled in free lunch (below 130% of the federal poverty level)
- ▶ Enrolled in reduced-price lunch (130% to 185% of the federal poverty level)

#### *School District Poverty Tiers*

- ▶ Low poverty:  $\leq 25\%$  of students eligible for FRPL
- ▶ Mid-low poverty: 25.1% to 50% of students eligible for FRPL
- ▶ Mid-high poverty: 50.1% to 75% of students eligible for FRPL
- ▶ High poverty:  $> 75\%$  eligible of students for FRPL

### Tenure Status

- ▶ Tenured:  $\geq 5$  years in one district
- ▶ Non-tenured:  $\leq 5$  years in one district

### Teacher Retention

- ▶ Retained: Stayed employed as teachers in one school district
  - ▶ Transferred: Transferred to another school district in New Jersey
  - ▶ Exited: Left the teaching field
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For poverty status, researchers used the FRPL system to define poverty tiers for school districts in New Jersey. Researchers merged FRPL and school district poverty-tier data with district-level teacher data. The alignment process paired calculated poverty status with corresponding teacher data by school year and district, thus enabling granular analyses of the relationship between poverty levels and the teacher workforce, especially retention.

For tenure status, researchers used the five-year cutoff period established by New Jersey's educational system to categorize tenured and non-tenured teachers. Though existing data do not provide an explicit variable for tenure status, researchers created a proxy variable to identify tenured teachers (e.g., five or more years of experience) and non-tenured teachers (e.g., less than five years of experience). The measurement developed for tenure status aligns with recognized standards and legal definitions set by NJDOE, providing a robust framework for examining the potential implications and trends associated with tenure status among teachers.

To measure and track teacher retention, researchers developed three categories: **retained**, **transferred**, and **exited**. This analysis, relying on the consistency of SMIDs, classified retained teachers as those who stay in the same school district from one year to the next, whereas those who transferred left one school district and joined another district in New Jersey. Researchers identified exiters as teachers who were no longer in existing staff data, left the teaching field entirely, and likely became employed in non-teaching positions.

### *Certification and Endorsement Data*

Researchers analyzed state teaching certification and endorsement data between 2010 and 2022. Individuals pursuing teaching certifications must fulfill an endorsement that identifies the type(s) of subject area(s) they can teach. Since endorsements can be conferred by NJDOE at any time, all types of endorsement conferred for each calendar year (except substitutes) were included. Because individuals may receive multiple endorsements, figures related to endorsements should not be interpreted as the number of new teachers or newly endorsed teachers, but instead the number of those that have received the credential that year. Researchers have included numerous endorsements by subject area to frame the analysis in as close alignment as possible with the job code data included in NJ SMART, reflecting the landscape of the certified teacher workforce in New Jersey.

Upon review of the available annual endorsement data, missing data elements were identified, including some individuals that may still be awaiting final certification. For consistency and quality control, researchers elected to only use records where complete information was available. Such records were excluded from this analysis when key data points, such as final date conferred, type of certification, or the endorsement identification, were missing. Though it is not uncommon for large data sources to have data missingness and/or errors, focusing on records that included all key data points helped buttress the quality of the analysis. Missing data were not significant enough to detract from the general findings included as part of this analysis.

The determination of the student-teacher ratio constitutes a pivotal aspect of this analysis, requiring a series of methodical and deliberate steps. Researchers began by identifying student enrollment across different subject areas and aligned them with the corresponding teacher categories within the specific job code range of 1000 to 2999. For each subject area, the student-teacher ratio was calculated by dividing the total number of enrolled students by the full-time equivalent count of teachers possessing the relevant endorsements. This analysis is not meant to describe a typical class size for these teachers, but rather gain an understanding of the number of students relative to the numbers of certified teachers. Researchers then further categorized the student-teacher ratio, breaking it down by educational levels such as elementary and middle school, as well as by specialized student groups, including English language learners (ELL) and special education.

Researchers used the range of job codes to identify the diverse spectrum of teacher certification and endorsement types in New Jersey and categorize them within specific subject areas, particularly for examining the number of teachers and student-teacher ratios by subject area. The enrollment and teacher subject codes for inclusion, by category, were established as follows:

**Table A-2: Job Code Range for Each Subject Area**

Subject	Job Code Range		Student-Teacher Ratio
	Begin	End	
Elementary	1000	<1100	Elementary students only
Middle grades (5-8)	1100	<1200	Middle school grades only
Art	1200	<1300	All students
Business	1300	<1400	All students
English	1400	1451	
World languages	1500	<1600	All students
Health and physical education	1600	<1700	All students
Family and consumer science	1700	<1800	All students
Industrial arts	1800	<1900	All students
Mathematics	1900	<2000	All students
Financial literacy	2001	2001	All students
Music	2100	<2200	All students
Science	2200	<2300	All students
Social studies	2300	<2400	All students
Supplementary instruction	2400	2401	All students
Resource program	2405	2406	Special education students only
Teacher coach/coordinator	2500	2412	All students
Vocational education	2500	<3000	All students
ELL/bilingual	1485	<1486	ELL students only

Researchers also used specific job codes, identified as “Special callout sub groupings,” to ensure accurate analysis and to avoid duplicate records. These job codes include ELL/bilingual teachers, who fell within job codes 1485 and 1486. Though they teach English, they are not included in the broader English subject area.

### **OSHE Data**

To analyze the teacher supply, this study used enrollment and completions data from OSHE within NJEEDS to examine students seeking a Bachelor’s degree at postsecondary institutions in New Jersey between 2012 and 2016. Selecting this period provided sufficient time – at least six years – for students to graduate. Due to the analytical limitations of OSHE data, this analysis excludes students who completed a Bachelor’s degree in other majors and became teachers. In future

analyses that utilize NJEEDS data to identify individual records, it may be possible to identify and track the outcomes of students who complete a Bachelor's degree in a major other than education and go on to become teachers. Additionally, future analyses could compare exits by this subgroup, students who follow more traditional educational pathways, and other less common paths for individuals who go on to become teachers.

## Analytical Limitations

This analysis included several interconnected limitations that should be carefully considered. The first constraints concern the geographical focus and timeframe examined. The analysis was confined to state- and district-level estimates, which may overlook local- and/or school-level elements that uniquely affect teachers. Where district-level estimates were unavailable, researchers replaced the value with the state-level average. Additionally, researchers were limited by the timeframe of complete and validated data that are included in NJEEDS for this analysis, which includes the 2013–14 to 2020–21 school years. The most recent year of data used will not reflect more current school year information, which may be affected by recent policy changes in New Jersey. Relatedly, this study could only partially assess the impacts of the COVID-19 pandemic on the teacher workforce, since it only includes the 2019–20 and 2020–21 school years, but not additional post-pandemic data. Future analyses should examine the long-term impacts of the COVID-19 pandemic.

Other methodological limitations, including the NJDOE staff data collection, shaped the scope of analysis. The inability to compare characteristics of newly hired teachers directly with those they replaced limited researchers' ability to analyze changes in the teacher workforce through direct entries and exits into the public school sector. By complying with data security and confidentiality requirements associated with NJEEDS data use standards, researchers also combined and/or suppressed categories with few records, constraining the depth of the analysis. These practices, while essential for data security and confidentiality requirements, limited the scope of analysis. Finally, it is important to note that longitudinal data require consistent tracking over time. Any interruptions or inconsistencies in the data collection may affect the analysis, so caution should be exercised in interpreting the results in areas where these inconsistencies may be present.



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## About the Heldrich Center

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The **John J. Heldrich Center for Workforce Development** at Rutgers University is devoted to transforming the workforce development system at the local, state, and federal levels. The center, located within the Edward J. Bloustein School of Planning and Public Policy, provides an independent source of analysis for reform and innovation in policymaking and employs cutting-edge research and evaluation methods to identify best practices in workforce development, education, and employment policy. It is also engaged in significant partnerships with the private sector, workforce organizations, and educational institutions to design effective education and training programs. It is deeply committed to assisting job seekers and workers attain the information, education, and skills training they need to move up the economic ladder.

As captured in its slogan, “Solutions at Work,” the Heldrich Center is guided by a commitment to translate the strongest research and analysis into practices and programs that companies, community-based organizations, philanthropy, and government officials can use to strengthen their workforce and workforce readiness programs, create jobs, and remain competitive. The center’s work strives to build an efficient labor market that matches workers’ skills and knowledge with the evolving demands of employers.