



Teacher Shortages in New York State: New Teachers' Certification Pathways, Certification Areas, District of Employment, and Retention in the Same District

New York State is experiencing teacher shortages in specific subject areas. One way to address these shortages is through the certification and placement of new teachers. This study explored the pathways through which new teachers between 2015/16 and 2017/18 earned certificates, their certification areas, and their subsequent placement and retention in districts across the state, particularly high-need districts. While the majority of new teachers earned certificates through the traditional in-state pathway, this varied somewhat by certification area. The proportion of teachers who earned certificates through the individual evaluation pathway was higher for the shortage certification area of career and technical education than for other certification areas. The most frequent certification area was the shortage certification area of special education, while the shortage certification areas of career and technical education and bilingual special education were among the least frequent. New York City district schools employed new teachers who earned certificates through the alternative in-state pathway at a higher rate than other types of high-need districts (rural, large city—not New York City, and other urban/suburban) as well as average- and low-need districts. New teachers employed in high-need districts had higher rates of retention in the same district for a second year than new teachers employed in average- and low-need districts. Just 5 percent of new teachers in New York State were uncertified.

Why this study?

Across the country, educators and policymakers are concerned about teacher shortages, particularly in hard-to-staff subject areas and school districts.¹ New York State has faced geographically widespread and persistent shortages in several subject areas.² There are several ways to address these shortages, including the certification of new teachers and the additional certification of experienced teachers. These approaches are addressed in two companion reports that the Regional Educational Laboratory Northeast & Islands has prepared in collaboration with the New York State Education Department (NYSED). Both reports address NYSED's desire to understand the relationships among certification pathways, certification areas, and employment in high-need districts. NYSED intends to use this information to support efforts to increase the number of qualified candidates, particularly in shortage areas.

¹ Gais, T., Backstrom, B., Malatras, J., & Park, Y. (2018). *The state of the New York teacher workforce*. Rockefeller Institute of Government. <http://rockinst.org/issue-area/state-new-york-teacher-workforce/>; Viadero, D. (2018, January 23). Teacher recruitment and retention: It's complicated. *Education Week*. <https://www.edweek.org/ew/articles/2018/01/24/teaching-shortages-many-answers-for-a-complex.html>; U.S. Department of Education. (n.d.). Teacher shortage areas. Retrieved March 13, 2020, from <https://tsa.ed.gov/#/reports>.

² Geographically widespread and persistent shortage areas are subject areas in which there were shortages in at least two of the state's three broad geographic reporting locales (that is, New York City Public Schools, the Big Four [Buffalo, Rochester, Syracuse, and Yonkers], and the rest of the state) in 2015/16, 2016/17, and 2017/18. Those subject areas include bilingual education, bilingual special education, career and technical education, English language arts, health education, library media specialist, literacy, mathematics, science, and special education. U.S. Department of Education. (n.d.). *Teacher shortage areas*. Retrieved March 13, 2020, from <https://tsa.ed.gov/#/reports>.

What was studied and how?

The study addressed the following questions about public school teachers with less than one year of experience teaching in New York State in 2015/16, 2016/17, and 2017/18:

1. Through which certification pathways did they earn their first certificates?
2. In which certification areas did they earn their first certificates?
 - a. By certification area, which pathways did they use?
3. What is their district of employment's need designation and what, if any, relationships exist among certification pathways, certification areas, and district need designation?
4. To what extent were they retained in the district, and what were the certification pathways and certification areas of those who were retained?

The study used data from NYSED's TEACH system, which is the platform through which individuals apply for certification and that maintains data on all certificate holders, and Basic Education Data System Personnel Master File, which contains employment records. The sample consisted of 22,424 unique new teachers. Descriptive analyses studied patterns of certification pathways by certification area, district of employment, and retention in the same district. Differences greater than 5 percentage points across study groups were considered substantive.

Findings

The majority of new teachers earned certificates through the traditional in-state pathway

New teachers can earn multiple certificates through one or more certification pathways. About 73 percent of new teachers earned certificates through the traditional in-state pathway, in which candidates complete a New York State–registered teacher preparation program at an institution of higher education. About 23 percent of new teachers earned certificates through the individual evaluation pathway, in which candidates who do not complete the requirements of other pathways provide transcripts (or in the case of career and technical education certificates, evidence of prior education, credentials, or work experience) to obtain certification. About 15 percent of new teachers earned certificates through the alternative in-state pathway, in which candidates apply for and earn a Transitional B or C teaching certificate and complete a college-supervised placement as a teacher of record in a partnering school. And about 7 percent of new teachers earned certificates through an out-of-state program pathway. Five percent of new teachers were uncertified.³

The most frequent certification area for new teachers was the shortage certification area⁴ of special education, while the shortage certification areas of career and technical education and bilingual special education were among the least frequent

New teachers earned certificates most frequently in the shortage certification area of special education (40 percent) and earned certificates least frequently in the shortage certification areas of career and technical education, bilingual special education, and library media specialist (1 percent each).

³ The sum of the percentages discussed in this paragraph exceeds 100 percent because teachers can earn multiple certificates.

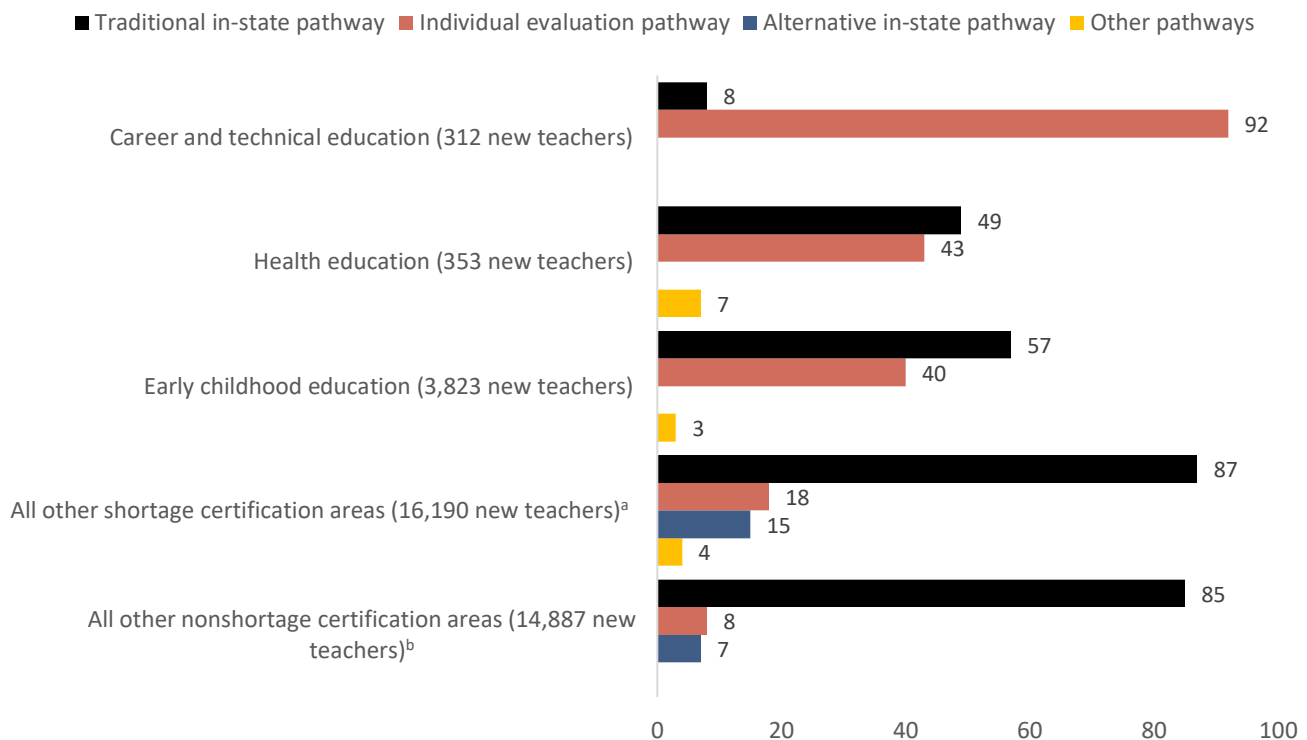
⁴ NYSED does not report shortages related to certification areas but rather related to course assignment areas in which full-time equivalent teaching positions (FTEs) in the subject area are greater than 5 percent of total FTEs in the subject area (New York State Education Department, personal communication, December 30, 2016). This study examined certification areas related to shortage areas, and these are referred to as “shortage certification areas” throughout the report.

The proportion of new teachers who earned certificates through the individual evaluation pathway was higher for career and technical education than for other certification areas

While 23 percent of all new teachers earned certificates through the individual evaluation pathway, 92 percent who earned certificates in the area of career and technical education used this pathway (figure 1). The proportion of new teachers who earned certificates in career and technical education through the individual education pathway was substantively higher than the proportion who earned certificates in other areas. Some 43 percent of new teachers who earned certificates in the shortage certification area of health education and 40 percent who earned certificates in the nonshortage certification area of early childhood education used the individual evaluation pathway.

Figure 1. The proportion of teachers who earned certificates through the individual evaluation pathway was higher for the shortage certification area of career and technical education than for other certification areas, 2015/16–2017/18

Percent of new teachers who earned certificates through each pathway, by certification area



Note: The sample consisted of 22,424 unique new teachers in New York State in 2015/16–2017/18. The numbers of new teachers in the category labels on the vertical axis sum to 35,565, and the percentages of new teachers who used each pathway for the all other shortage certification areas and all other nonshortage certification areas exceed 100 because some teachers earned multiple certificates in multiple areas through multiple pathways (9,860 teachers earned certificates in more than one certification area). Teachers were counted only once per certification area, even if they earned multiple certificates in that area, but they were counted for each pathway through which they earned a certificate. In addition, the sample included 1,173 uncertified teachers.

a. Includes bilingual education, bilingual special education, English language arts, library media specialist, literacy, math, science, and special education. Some 13,813 unique teachers earned certificates in at least one of these areas, and 2,057 unique teachers earned certificates in two to four of them.

b. Includes arts, childhood education, English to speakers of other languages, language other than English, social studies, physical education, and other certification areas. Some 13,728 unique teachers earned certificates in at least one of these areas, and 3,822 unique teachers earned certificates in two to five of them.

Source: Authors' analyses of 2015–18 data from the New York State Education Department's TEACH system and Basic Education Data System Personnel Master File.

More than half of all new teachers were employed in New York City district schools or in charter schools

Need designations measure a district's ability to meet its students' needs with local resources. There are four high-need designations: New York City district schools, large city—not New York City, rural, and other urban/suburban. The state does not assign need designations to charter schools, 83 percent of which are in New York City. The percentages of new teachers employed in districts with each need designation across the state differed from districts' shares of statewide student enrollment. New teachers were overrepresented in New York City district schools, which accounted for 50 percent of new teachers but only 36 percent of statewide student enrollment, and in charter schools, which accounted for 16 percent of new teachers but only 5 percent of statewide student enrollment.

The percentages of new teachers who earned certificates through the alternative in-state pathway were higher in New York City district schools and in charter schools than in other need designations

About 24 percent of new teachers in New York City district schools and 15 percent of new teachers in charter schools earned certificates through the alternative in-state pathway, which in both cases was substantively higher than in other need categories. In contrast, other need designations more frequently employed new teachers who earned certificates through the traditional in-state pathway and the individual evaluation pathway.

The rate of retention in the same district was lowest for new teachers who earned certificates in the shortage area of career and technical education

The retention rate for new teachers was similar across most certification areas, with the exception of new teachers who earned certificates in career and technical education. About 37 percent of teachers who earned certificates in career and technical education were retained in the same district for a second year, and 31 percent were retained for a third. In contrast, the retention rates for teachers with certificates in other areas ranged from 65 percent to 82 percent for a second year and from 53 percent to 68 percent for a third year.

New teachers employed in high-need districts had higher rates of retention in the same district than new teachers employed in average- and low-need districts

Second-year rates of retention in the same district were higher for new teachers employed in all four types of high-need districts than for teachers employed in average- and low-need districts. The second-year retention rate was highest in high-need rural districts and in New York City district schools: 81 and 80 percent respectively, which is substantively higher than the rates in average-need districts (72 percent) and low-need districts (66 percent).

Implications

NYSED can use the study findings to inform decisions about increasing the number of qualified teacher candidates, particularly in shortage areas and high-need districts. State policymakers beyond New York State can also use the findings to inform their own research on shortages and certification pathways.

NYSED could further investigate the career trajectories of new teachers, with an emphasis on placement in shortage areas and retention. This study could not investigate new teachers' placement at the subject or classroom level, and thus more research is needed on the extent to which new teachers are filling positions in the shortage areas in which they have earned certificates and whether they are staying in their positions. NYSED might also want to investigate new or modified ways to encourage prospective teachers to earn certificates in shortage areas. NYSED and teacher preparation programs could investigate whether creating or modifying targeted recruitment strategies increases prospective teachers' awareness of and interest in teaching in shortage areas.

Because of the lower retention rate among new teachers who earned certificates in career and technical education, NYSED could investigate the experience of these teachers. The lower retention of these teachers might be due to the nature of career and technical education or to the fact that few traditional programs in New York State lead to a certificate in career and technical education. Finally, NYSED might want to further investigate the placement and retention of new teachers by need designation. Contextual factors, incentive programs, and labor market conditions influence teacher placement and retention, and future research could investigate these factors.

This brief was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-17-C-0008 by the Regional Educational Laboratory Northeast & Islands administered by Education Development Center. The content of the publication does not necessarily reflect the views or policies of IES or of the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The full report is available on the Regional Educational Laboratory website at <http://ies.ed.gov/ncee/edlabs>.

Zweig, J., Lemieux, C., Shakman, K., O'Dwyer, L., & Schillaci, R. (2021). *Teacher shortages in New York State: New teachers' certification pathways, certification areas, district of employment, and retention in the same district* (REL 2022–109). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. <http://ies.ed.gov/ncee/edlabs>