

# Staffing Shortage Areas in Connecticut Public Schools



Boston University Wheelock College of Education & Human Development  
Wheelock Educational Policy Center



# EXECUTIVE SUMMARY

Schools, districts, and states around the country are concerned about teacher and staff shortages and their potential impact on student learning. Understanding where and why shortages occur can help policymakers strengthen and focus their efforts to support schools and districts struggling to fill vacancies. This report consolidates data from multiple sources to identify shortage areas in Connecticut public schools and inform the state’s strategic action to alleviate staffing challenges. Based on various indicators of staffing demand and supply, **there are evident shortages across three categories of educators in Connecticut, specifically:**

<p><b>Teachers of Special Populations</b></p> <ul style="list-style-type: none"> <li>• Special Education PK-12</li> <li>• Teachers of English to Speakers of Other Languages (TESOL) PK-12</li> <li>• Bilingual Education PK-12</li> </ul>
<p><b>General Education Teachers</b></p> <ul style="list-style-type: none"> <li>• Mathematics 4-12</li> <li>• Science 4-12</li> <li>• Social Studies 7-12</li> <li>• Technology Education PK-12</li> <li>• World Languages 7-12</li> </ul>
<p><b>School Support Personnel</b></p> <ul style="list-style-type: none"> <li>• School Library &amp; Media Specialists*</li> <li>• School Psychologists*</li> <li>• Speech &amp; Language Pathologists*</li> </ul>

\*Shortage area in high-need districts only

Total public-school enrollment in Connecticut has been decreasing over time (Figure 1). However, the enrollment of students of color, students eligible for subsidized lunch, special education students, and English language learners has increased in recent years (Figure 2), representing a **grow-**

**ing need for educators to support the state’s most vulnerable students.** Data from Connecticut’s teacher job application system reflect districts’ increasing demand for teachers of special populations and general education teachers in key subjects, with particularly large increases in the number of jobs posted between 2020 and 2021 (Figure 3).

At the same time, the number of educator preparation program graduates concentrating in these subject areas has mostly remained constant or decreased in recent years (Figure 4), as has the number of new subject-area endorsements given to teachers with initial or provisional licenses (Figure 5). **This combination of growing demand and stagnating supply indicates that teacher shortages will persist in these subject areas unless significant action is taken.** Increasing student-teacher ratios (i.e., the average number of students per teacher) across shortage areas further emphasize this concerning trend (Figure 6). In special education and TESOL/bilingual education, small recent increases in the number of teacher graduates and new endorsements are unlikely to keep up with the increasing demand illustrated by student enrollment and job vacancy trends.

The number of school library and media specialists employed in Connecticut public schools has decreased over time, while the number of school psychologists and speech and language pathologists has increased (Figure 7). However, evidence shows that higher-need districts are experiencing shortages of these staff positions even while lower-need districts are not. Student-staff ratios for school psychologists and school library and media

specialists are higher and increasing in Alliance districts and high-poverty districts compared to other districts<sup>A</sup> (Figures 8 & 9). Although student-staff ratios for speech and language pathologists have decreased slightly in recent years, the gaps between higher- and lower-need districts have remained constant. These patterns indicate that **Connecticut must work to ensure students in Alliance and high-poverty districts have equal access to key support personnel.**

For many of the teacher shortage areas identified above, **higher-need districts appear to face more acute challenges than lower-need districts.** Student-teacher ratios in science and world languages are higher in Alliance districts and high-poverty districts than in other districts (Figures 10 & 11). In general, Alliance districts report a greater number of unfilled vacancies across teacher and staff shortage areas than non-Alliance districts, demonstrating both their greater demand for educators and their greater difficulty filling open positions even after the school year begins (Figure 12).

The teacher and staff shortage patterns in Connecticut are reflective of national patterns, including those in bordering states that share similar contexts and may be competing for educators across state lines (Table 1). As Connecticut implements policies and initiatives to increase the supply of qualified educators to meet the growing demand, it will be imperative for the state to **differentiate supports based on district needs and to pay attention to shifting regional trends** that may indicate potential shifts within Connecticut as well.

A See Appendix A for a description and list of the Alliance and high-poverty districts identified in this analysis.

# METHODOLOGY

This report describes teacher and staff shortages in Connecticut’s public schools. These shortage areas were identified based on multiple factors indicating the projected supply and demand of teachers in the state. Some of these factors were previously used to identify shortage areas in the 2020-21 school year, while some are new sources of information. The following data were used for this analysis:

- Student enrollment (from Connecticut State Department of Education data)
- Teacher job postings (from CTREAP)
- Recent graduates of in-state teacher preparation programs (from Title II public data)
- New endorsements for new teachers and additional endorsements for existing teachers (from CSDE)
- The average number of students per teacher, i.e., student-teacher ratio (calculated from CSDE data)
- A district-level survey about the number of unfilled vacancies in schools (administered by CSDE)

In addition to examining overall trends in these data for the entire state, this analysis compares variations in these trends across different types of districts, specifically Alliance vs. non-Alliance districts and higher-poverty vs. lower-poverty districts. High-poverty districts are defined as those in the highest tercile of the distribution of students receiving subsidized lunch.

# IDENTIFICATION OF SHORTAGE AREAS

## Teachers of Special Populations

Subject Area	Previous Shortage Area?	DEMAND INDICATORS		SUPPLY INDICATORS		Differences Across Districts
		Student Enrollment	Job Postings	EPP Graduates	New Endorsements	
Special Education PK-12	Yes	▲ number of SPED students	▲	▲ (Insufficient)	▲ (Insufficient)	More vacancies in Alliance districts; higher student-teacher ratio in high-poverty districts
TESOL / Bilingual Education PK-12	Yes	▲ number of ELL students	▲	▲ (Insufficient)	▲ (Insufficient)	More vacancies in Alliance districts

**Special Education:** Figure 2 shows that the number of special education students in Connecticut increased by 16% between 2014-15 and 2019-20. Regarding student composition, the proportion of special education students was 16% in the 2019-20 school year, representing an increase of 1 and 3 percentage points relative to the previous school year and the 2014-15 school year, respectively. Special education teachers are among the most needed in Connecticut public schools. Figure 3 shows that special education had the highest number of job postings in CTREAP between 2018 and 2021. While these numbers highlight an uprising demand for special education teachers, the number of recent educator preparation program (EPP) graduates and the number of new special education endorsements show that the supply of special education teachers has not increased sufficiently to meet these requirements. Figure 5 shows that the number of new endorsements in 2020-21 increased by only 3% relative to the 2012-2014 average. Moreover, the district-survey data display sizeable differences in the likelihood of filling these requirements between Alliance and non-Alliance districts. Figure 12 shows that special education vacancies at the start of the fall 2022 semester were substantially larger in Alliance districts than in other districts.

**TESOL and Bilingual Education:** The number of English language learners (ELLs) in Connecticut increased by around 25% between 2014-15 and 2019-20 (Figure 2). In the 2019-20 school year, the proportion of ELL students was 8%, representing an increase of 2 percentage points relative to the 2014-15 school year. The demand for TESOL teachers has increased over time, considering the number of job postings (Figure 3). While these patterns reveal an increasing need for teachers to serve the ELL population, the num-

ber of new EPP graduates and new TESOL endorsements have remained relatively unchanged in the last few years. Figures 4 and 5 show positive but small changes in the number of EPP graduates and new endorsements in bilingual education (elementary) and TESOL. Moreover, Alliance districts also face more difficulties recruiting new teachers in these areas (Figure 12). Alliance districts have roughly more than two times more vacancies than non-Alliance districts.

## General Education Teachers

Subject Area	Previous Shortage Area?	DEMAND INDICATORS		SUPPLY INDICATORS		Differences Across Districts
		Job Postings	EPP Graduates	New Endorsements		
Mathematics 4-12	Yes	▲	▼	▼		More vacancies in Alliance districts
Science 4-12	Yes	▲	▼	▼		More vacancies in Alliance districts; higher student-teacher ratio in Alliance and high-poverty districts
Social Studies 7-12	No	No data	▼	▼		
Technology Education PK-12	Yes (Alliance districts only)	▲	—	—		Higher student-teacher ratio in high-poverty districts
World Languages 7-12	Yes	▲	▼	▼		More vacancies in Alliance districts; higher student-teacher ratio in Alliance and high-poverty districts

**Mathematics:** Figure 3 shows that Mathematics is the second largest area in terms of job postings during 2021. In this year, there was a significant increase in the demand for middle and high school math teachers relative to previous years. The number of postings in 2021 was 370, an increase of 45% relative to 2018. While these patterns show an increase in the need for math teachers at different school levels, predictors of future supply go in the opposite direction. Figure 4 shows a decrease in recent EPP graduates specializing in middle/high school math in recent years. Moreover, the number of new endorsements in this area has also decreased substantially in recent years (Figure 5). The average number of new endorsements in mathematics between 2020 and 2021 was 127, representing a decrease of 40% relative to the average number observed between 2012 and 2013. Additionally, the district-level survey administered by CSDE reveals that Alliance districts face significantly more challenges in filling job openings. Figure 12 shows the significant difference in vacancies between higher- and lower-need districts.

**Science:** Figure 3 shows that the demand for science teachers has not varied substantially over time. The number of job postings in 2021 was 245, representing an increase of 16% relative to 2018. In terms of the future supply of teachers, Figures 4 and 5 show that the number of EPP graduates and new endorsements in science has not increased in recent years. The number of new endorsements in science was, on average, 193 between 2020 and 2021, a decrease of 21% relative to the average in 2012 and 2013. Like math teachers, science is an area where the district-level survey shows substantial differences in the likelihood of hiring teachers. Figure 12 shows that Alliance districts experience additional challenges in filling these positions. Science teacher vacancies at the start of the 2022 fall semester were more than two times higher in Alliance districts than non-Alliance districts.

**Social Studies:** Figures 4 and 5 display a decreasing pattern in the number of new EPP graduates and new endorsements in history/social studies. These trends share similarities with the patterns observed for science and math, suggesting that Connecticut might also experience a shortage of social studies teachers in upcoming years. It is important to mention that this trend is not particular to Connecticut. Table 1 shows that social studies has been designated as a teacher shortage area in three bordering states that share similar contexts and may compete for educators across state lines. In Massachusetts and New York, this area was defined as a teacher shortage area at the middle and high school levels, while in Rhode Island only at the middle school level.

**Technology Education:** The number of job postings in this area has also increased recently. Figure 3 shows that, relative to 2018, in 2021, there was an increase of 15% in the number of technology education jobs posted on CTREAP. Nevertheless, the number of

new endorsements for this subject is among the lowest in Connecticut, and, as Figure 5 shows, it has not changed in the last years. In addition, the number of EPP graduates also does not exhibit changes in the last years. For these reasons, current student-teacher ratios in technology education will likely follow the same pattern exhibited in recent years (Figure 6).

**World Languages:** Figure 3 shows that this area registered 206 job postings in 2021, an increase of 33% relative to 2018. Like most previous subjects, Figures 4 and 5 show that the supply of new teachers in this area has been reducing significantly over time, although at a lower rate than the one observed for math or science. In terms of distribution across districts, Figure 12 shows that, at least in 2022, there are no substantial differences in the likelihood of hiring teachers between Alliance and non-Alliance districts. Nevertheless, Figures 8 and 11 show relevant dissimilarities in the average student-teacher ratios between higher- and lower-needs districts. The gap across districts has remained constant in both cases since the 2014-15 school year.

## School Support Personnel

Endorsement Area	Previous Shortage Area?	Number of employees	Differences Across Districts
School Library & Media Specialist PK-12	Yes (Alliance districts only)	▼	More vacancies in Alliance districts; higher and increasing student-staff ratio in Alliance districts and high-poverty districts
School Psychologist PK-12	Yes	▲	More vacancies in Alliance districts; higher and increasing student-staff ratio in Alliance districts and high-poverty districts
Speech & Language Pathologist PK-12	Yes	▲	More vacancies in Alliance districts; higher student-staff ratio in Alliance districts and high-poverty districts

**School Library and Media Specialists:** Figure 7 shows the number of school librarians and media specialists observed in Connecticut public schools since 2014. Unlike other school support staff, in the 2020-21 school year, the total number of school library and media specialists decreased. The total number of staffed professionals decreased by 8% in the last year and 10% relative to 2014. Figure 9 shows that the differences in student-staff ratios between Alliance and non-Alliance districts have remained persistent in the last years. While the average student-staff ratio in non-Alliance districts exhibits a decreasing trend in the last years, the average student-staff ratio in Alliance districts increased in the last year, exacerbating the differences in access to these support personnel. A similar conclusion emerges when considering differences across high-poverty and other districts, measured as the average percentage of students receiving subsidized lunch. Figure 9 shows that the student-staff ratio in high-poverty districts has not decreased in recent years. By contrast, there is a sustained trend in the reduction of the average student-staff ratio.

**School Psychologists:** Figure 7 shows that the number of school psychologists increased by 3% in 2020 relative to the prior year and by 15% since 2014. This trend and the overall reduction in teacher enrollment (Figure 1) imply an average reduction in the student-staff ratio across all Connecticut public schools. However, this pattern is not observed in all districts. Figure 8 shows a larger decrease in the average student-staff ratio in non-Alliance districts. While in 2014 there was, on average, one school psychologist per 1,400 students, in 2020, this ratio decreased to around 1,100 students per school psychologist. By contrast, in Alliance districts, the average student-staff ratio has remained relatively constant. Similar to school library and media specialists, these patterns are similar when districts are classified in terms of the proportion of students receiving subsidized meals.

**Speech and Language Pathologists:** Finally, Figure 7 shows a sustained increase in the number of speech and language pathologists in Connecticut public schools. In the 2020-21 school year, there were around 1,100 professionals in these areas, representing an increase of 4% relative to the prior school year and 10% since 2014. Figures 8 and 9 show that the average student-staff ratios have decreased in higher- and lower-need districts, although the gap across both groups has persisted over time. Taken together, both figures summarize the current needs of key support personnel for students served in Alliance and high-poverty districts.

# FIGURES & TABLES

Figure 1. Connecticut's P-12 Student Enrollment

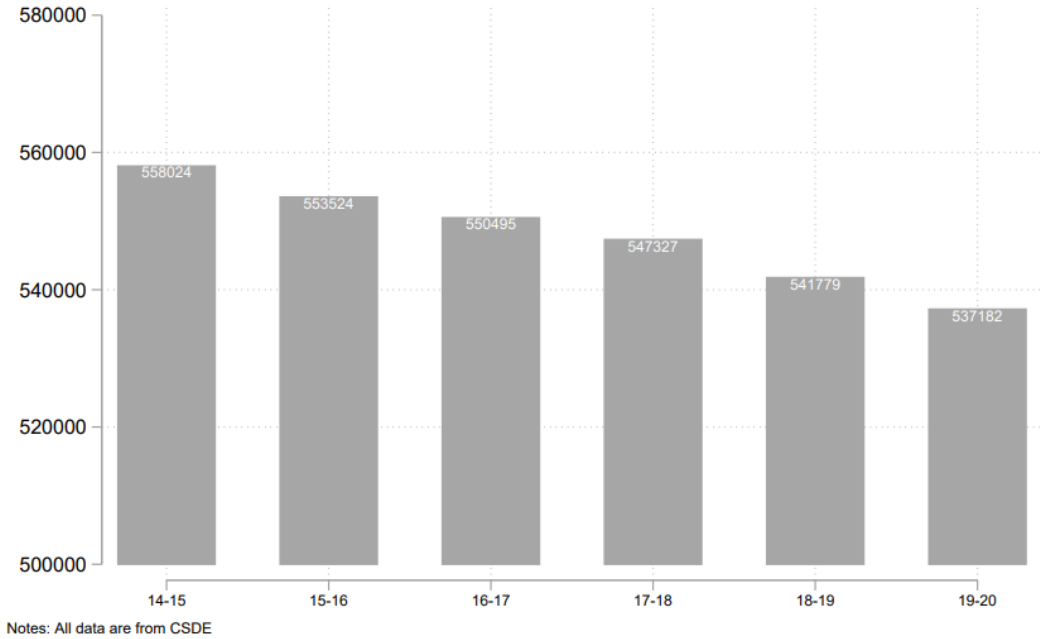


Figure 2. Connecticut's PK-12 Student Enrollment

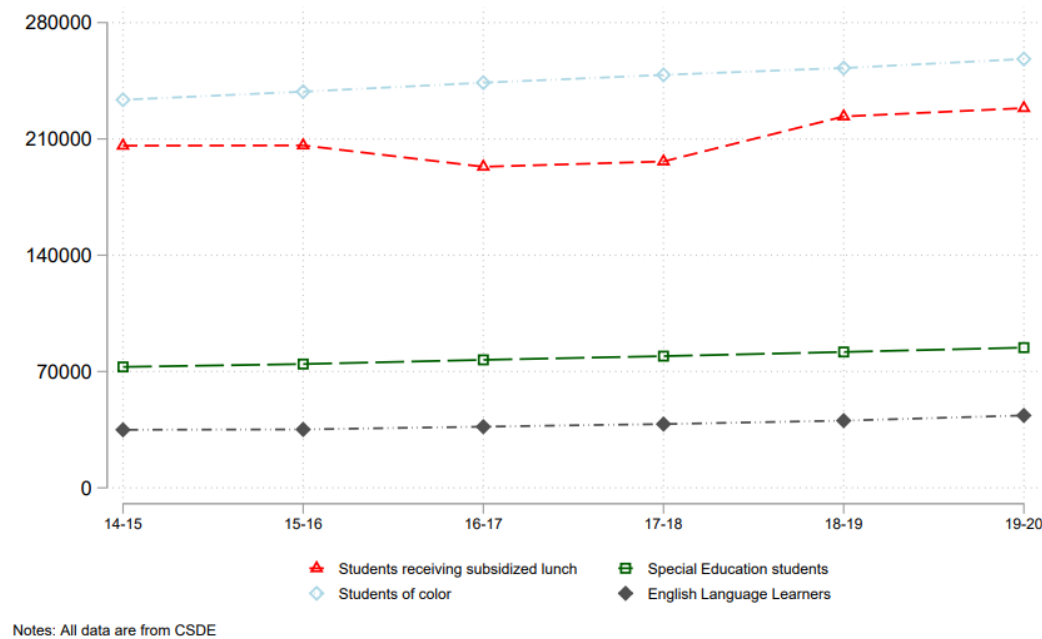
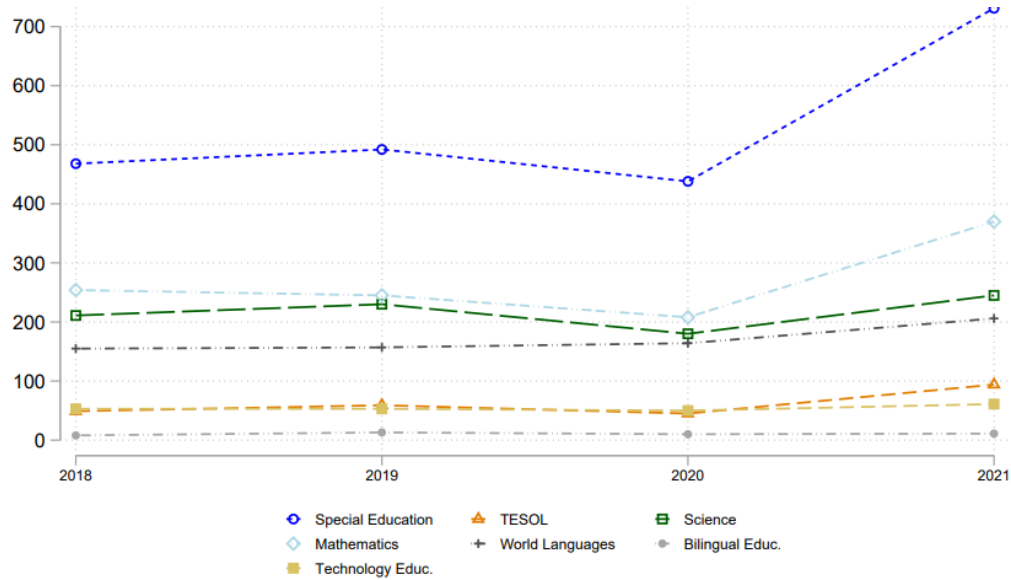


Figure 3. Number of Job Postings (2018-2021) by Subject



Notes: All data are from CTREAP. Includes all job postings observed between 2018-2021

Figure 4. Number of Graduates from Connecticut's Teacher Educator Programs

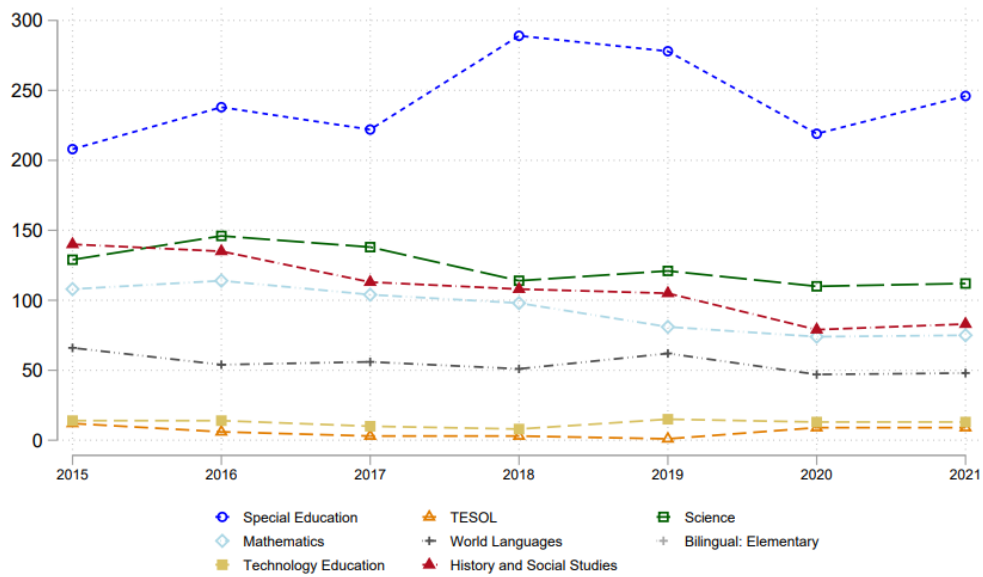
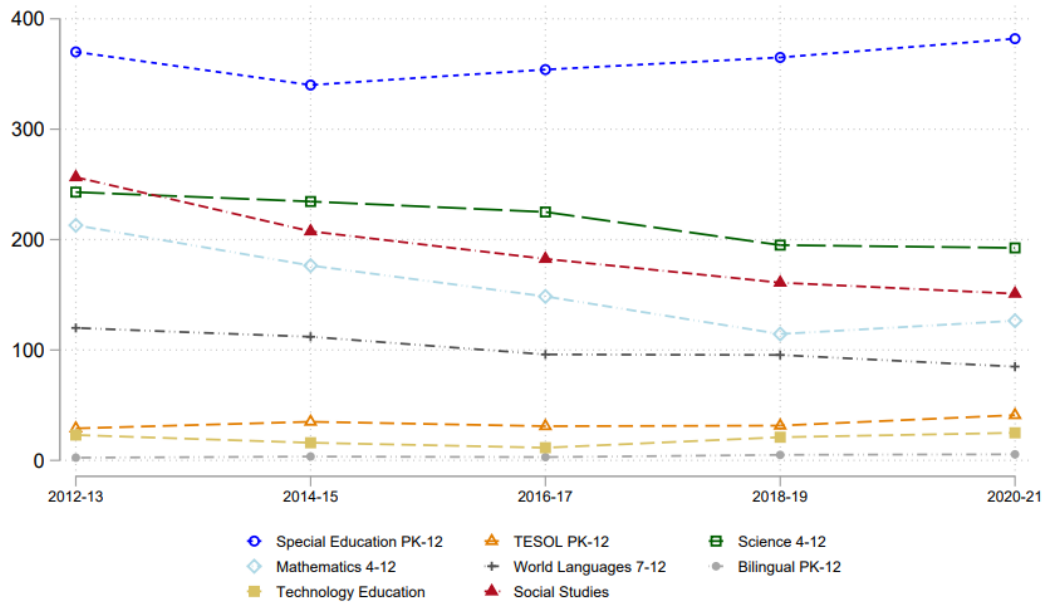
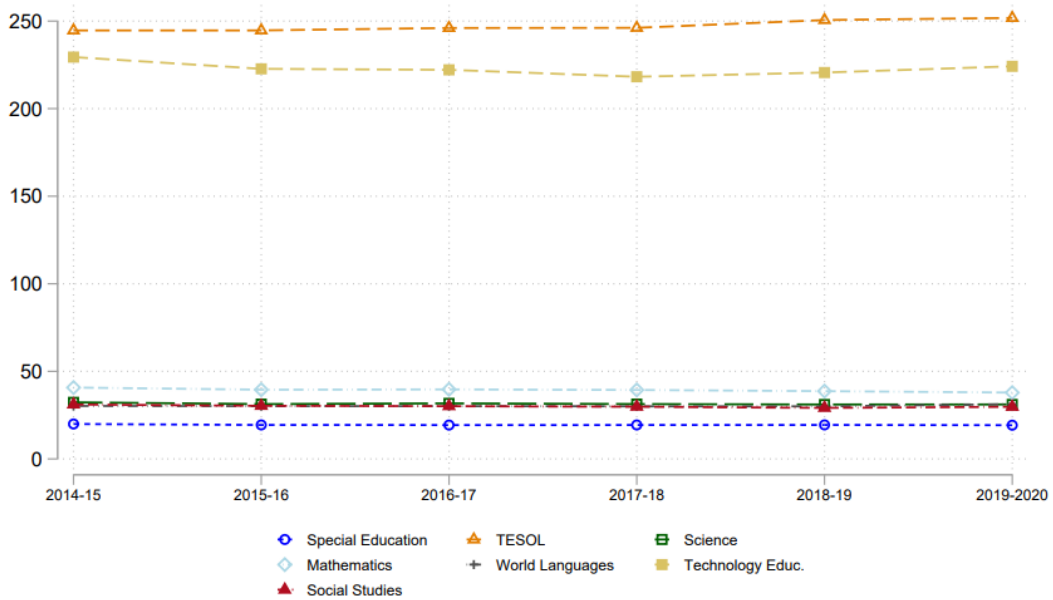


Figure 5. Number of New Endorsements by Subject



Notes: All data are from CSDE. This plot considers the average number of annual endorsements for initial educator and provisional educator certifications.

Figure 6. Average Student-Teacher ratio by Subject



Notes: All data are from CTREAP.



Figure 7. Number of Professionals in CT Public Schools

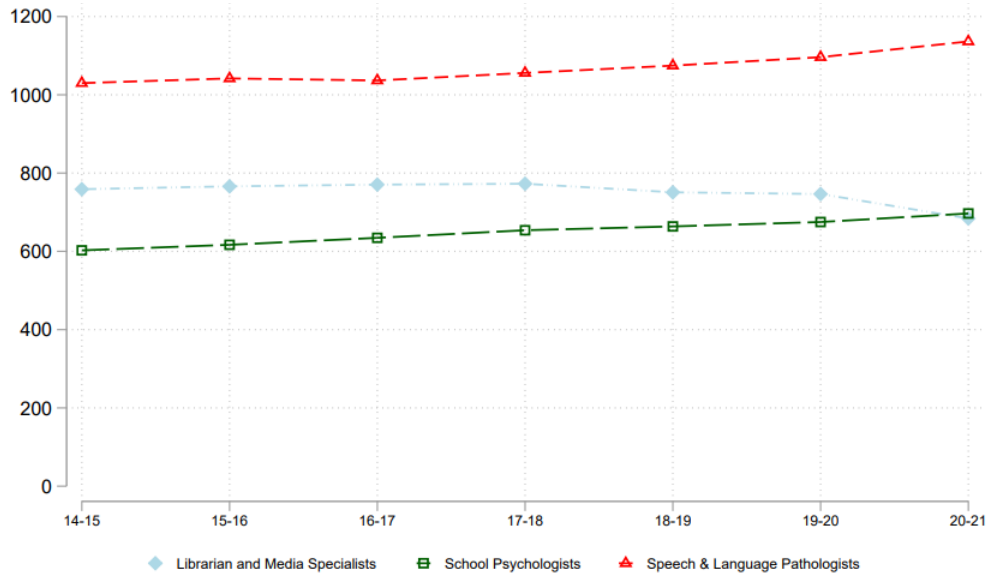


Figure 8. Student-staff ratios by district type

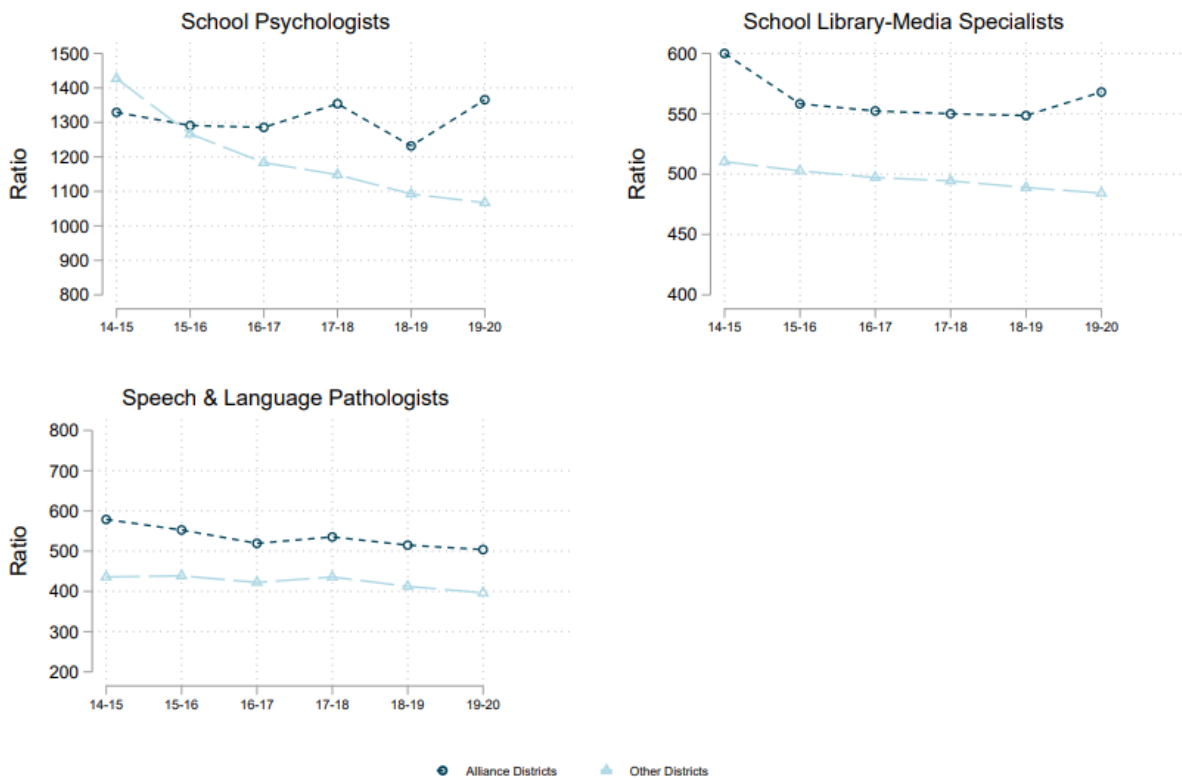
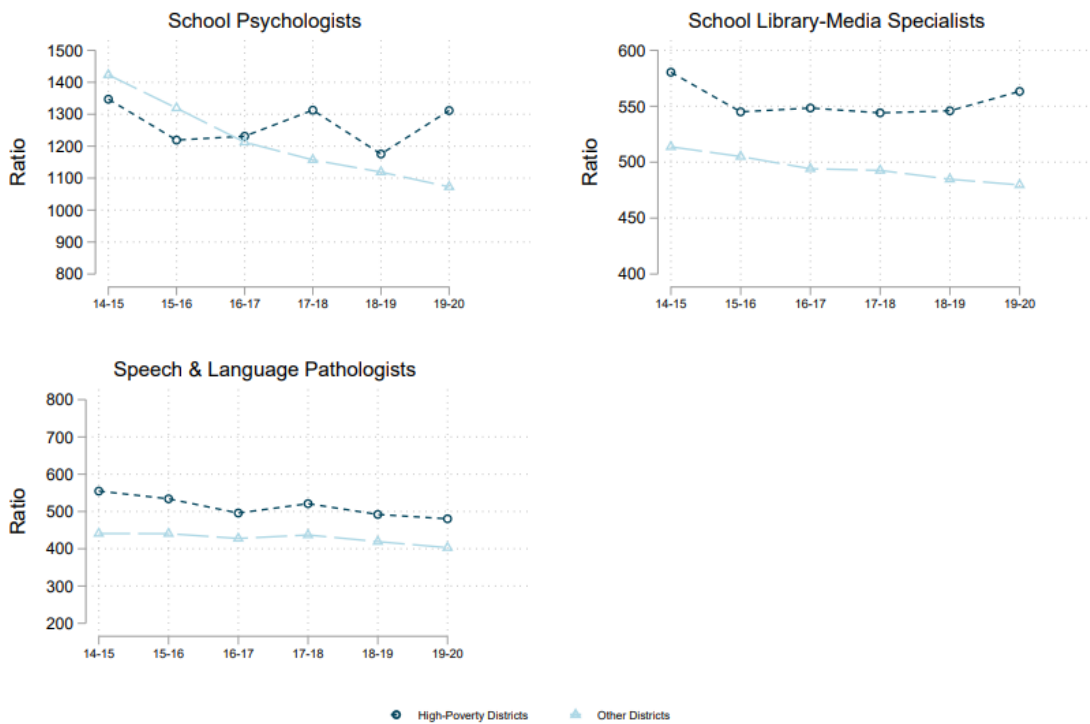


Figure 9. Student-staff ratios by district poverty status



Notes: This figure shows average student-staff ratios in high-poverty districts and other districts. High-poverty districts correspond to those located in the highest tercile of the distribution of students receiving subsidized meals in the corresponding year (districts with an average of 43% of students or higher). Each dot is calculated as the average ratio between the number of students enrolled in the corresponding school level and the number of professionals (FTE) in the school.

Figure 10: Student-teacher ratios by district type (Alliance vs. non-Alliance)

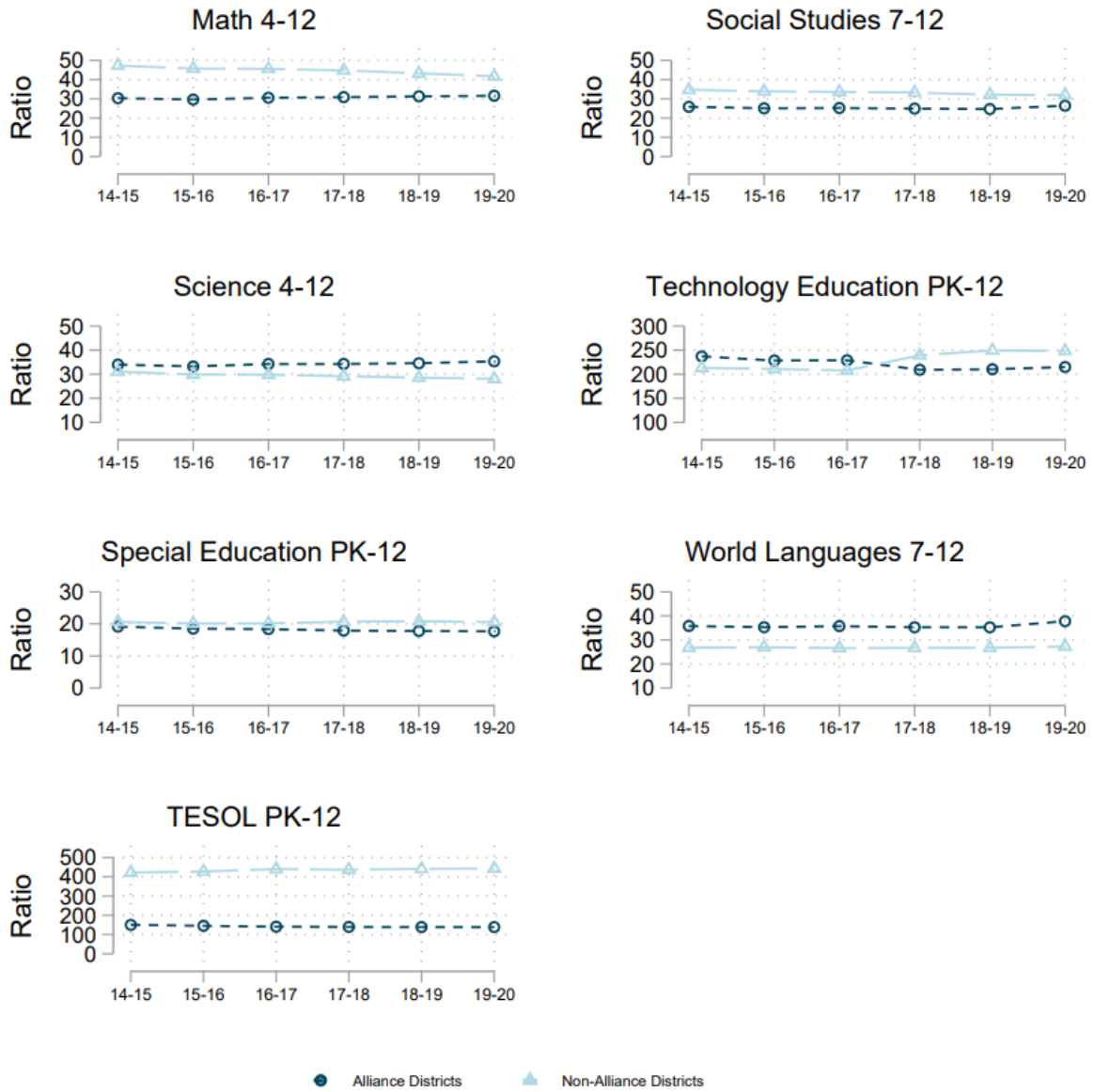
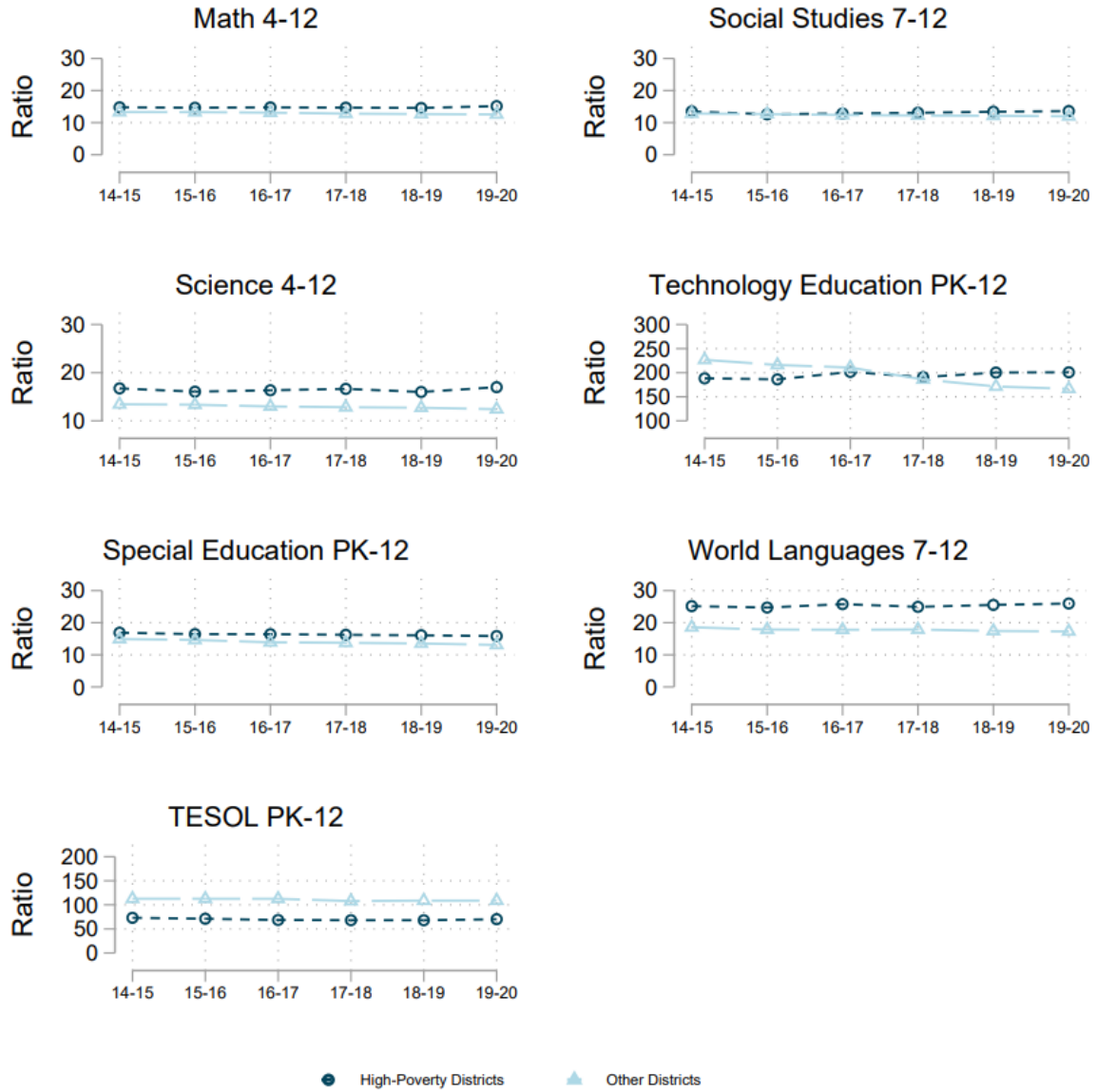
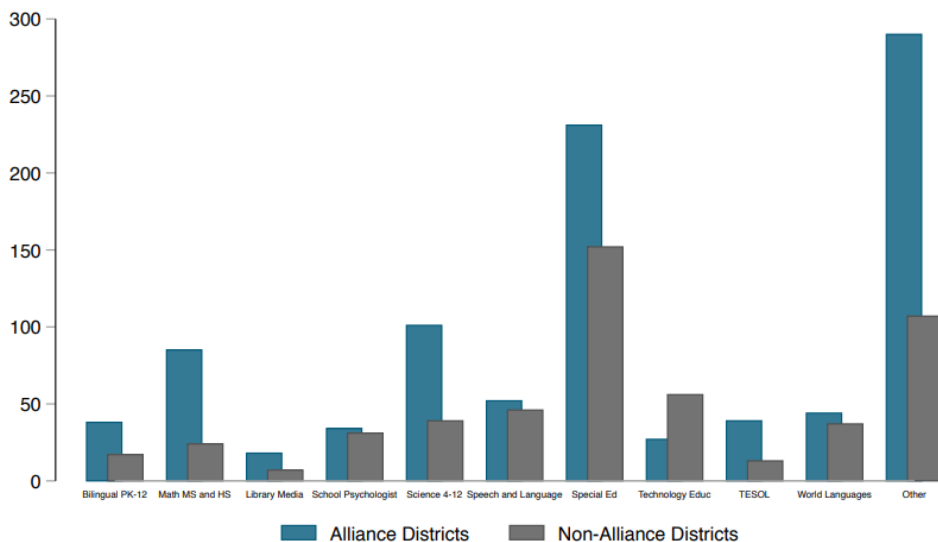


Figure 11: Student-teacher ratios by district poverty status



Notes: This figure shows average student-teacher ratios in high-poverty districts and other districts. High-poverty districts correspond to those located in the highest tercile of the distribution of students receiving subsidized meals in the corresponding year (districts with an average of 43% of students or higher). Each dot is calculated as the average ratio between the number of students enrolled in the corresponding school level and the number of assigned teachers (FTE) in the school.

Figure 12. Number of Vacancies (September, 2022)



Notes: All data are from the Teacher Vacancy Survey conducted during August, 2022. The following alliance districts are not included due to missing data: Bloomfield, Danbury, Hamden, West Haven, Windham, Windsor.

Table 1: Shortage areas in neighboring states

CT	MA	NY	NJ	RI
Bilingual Education PK-12				
Mathematics 4-12	✓ (PK-12)		✓ (PK-12)	✓
School Library and Media Specialist PK-12				
School Psychologist PK-12				
Science 4-12	✓ (PK-12)	✓	✓ (PK-12)	✓ (PK-12)
Speech and Language Pathologist PK-12				
Special Education PK-12	✓	✓ (4-12)	✓	✓
Technology Education PK-12	✓	✓ (4-12)	✓	✓
English to Speakers of Other Languages PK-12	✓	✓	✓	✓
World Languages 7-12	✓		✓ (PK-12)	✓ (PK-12)
	Language Arts (PK-12)	Language Arts (PK-12)		Language Arts (PK-12)
	Social Studies (PK-12)	Social Studies (4-12)		Social Studies (4-7)

Notes: This Table shows teacher shortage areas in neighboring states (Massachusetts, New York, New Jersey, and Rhode Island) in 2020-21. The first column displays all subjects currently defined as shortage areas in Connecticut. Each cell indicates whether the subject is also classified as a shortage area in the corresponding state. If the subject is the same, but the school level differs, this is indicated in parenthesis. Source: National Conference of State Legislatures. <https://www.ncsl.org/research/education/teacher-shortage-areas-by-state.aspx>

# APPENDIX A

A district is designated as a high-need district for teacher shortage area purposes if any of the following conditions are met:

- the district is an Alliance District; OR
- the district's average annual percentage of students who qualified for free or reduced-price lunch was greater than or equal to 43% (over the period 2014-15 to 2020-21); OR
- the district's percentage of students who qualified for free or reduced-price lunch in 2021-22 was greater than or equal to 43%.

Code	District Name
2850013	Achievement First Bridgeport Academy District
2880013	Achievement First Hartford Academy District
2790013	Amistad Academy District
0020011	Ansonia School District
2440014	Area Cooperative Educational Services
0110011	Bloomfield School District
2950013	Booker T. Washington Academy District
2900013	Brass City Charter School District
0150011	Bridgeport School District
0170011	Bristol School District
2970013	Capital Preparatory Harbor School District
2410014	Capitol Region Education Council
0240011	Chaplin School District
2680013	Common Ground High School District
9000016	Connecticut Technical Education and Career System
2430014	Cooperative Educational Services
0340011	Danbury School District
3370015	Department of Mental Health and Addiction Services
0370011	Derby School District
0430011	East Hartford School District
0440011	East Haven School District
0470011	East Windsor School District
2530014	Eastern Connecticut Regional Educational Service Center (EASTCONN)
2420014	EdAdvance
2890013	Elm City College Preparatory School District
0490011	Enfield School District
2720013	Explorations District
2310018	Goodwin University Educational Services (GUES)
2940013	Great Oaks Charter School District
0580011	Griswold School District

Code	District Name
0590011	Groton School District
0620011	Hamden School District
0640011	Hartford School District
2860013	Highville Charter School District
2640013	Integrated Day Charter School District
2650013	Interdistrict School for Arts and Comm District
2610013	Jumoke Academy District
0690011	Killingly School District
2450014	Learn
0770011	Manchester School District
0800011	Meriden School District
0830011	Middletown School District
0880011	Naugatuck School District
2800013	New Beginnings Inc Family Academy District
0890011	New Britain School District
0930011	New Haven School District
0950011	New London School District
1030011	Norwalk School District
9010022	Norwich Free Academy District
1040011	Norwich School District
2630013	Odyssey Community School District
2830013	Park City Prep Charter School District
1090011	Plainfield School District
1160011	Putnam School District
2110012	Regional School District 11
2700013	Side By Side Charter School District
1330011	Sprague School District
2960013	Stamford Charter School for Excellence District
1350011	Stamford School District
1380011	Stratford School District
2690013	The Bridge Academy District

<b>Code</b>	<b>District Name</b>
9020022	The Gilbert School District
1410011	Thompson School District
1430011	Torrington School District
3360015	Unified School District #1
3470015	Unified School District #2
1460011	Vernon School District
1510011	Waterbury School District
1560011	West Haven School District
1620011	Winchester School District
1630011	Windham School District
1650011	Windsor Locks School District
1640011	Windsor School District

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### OUR MISSION

The Wheelock Educational Policy Center (WEPC) conducts and disseminates rigorous, policy-relevant education research in partnership with local, state, and federal policymakers and stakeholders to improve pk-20 educational opportunities and holistic outcomes for underserved students.

[www.wheelockpolicycenter.org](http://www.wheelockpolicycenter.org)  
[wheelockpolicy@bu.edu](mailto:wheelockpolicy@bu.edu)



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