

## Who Teaches in North Carolina? Job Placement Rates for UNC System Teacher Education Programs

In this policy brief, EPIC reports the percentage of UNC system initially-prepared teachers securing teaching positions in North Carolina public schools. We find that: (1) graduates entering the job market during the Great Recession had lower job placement rates; (2) there is substantial variation, across UNC system institutions, in the job placement rates of their initially-prepared teachers; (3) job placement rates are greater for the high demand licensure areas of mathematics, science, and special education; and (4) graduates who secure teaching positions have higher high school and college GPAs but lower SAT scores than peers who do not teach in North Carolina. As accreditation agencies and policymakers consider regulations to hold teacher preparation programs accountable for the job placement rates of their graduates, we contend that:

1. Job placement rates are an important indicator for public reporting and evidence-based programmatic reforms.
2. Job placement rates must be interpreted carefully, as the percentage of program graduates securing a teaching position is not a direct reflection of program quality.

### Introduction

In recent years, policymakers have advanced efforts to link institutions of higher education to the employment and compensation outcomes of their graduates. In teacher education, for example, regulations proposed by the United States Department of Education may soon hold teacher preparation programs (TPPs) accountable for the job placement rates—both overall and in high-need schools—of the teachers they prepare. While a considerable body of research has examined the relationships between teacher preparation and the performance (value-added) of program graduates, there is little evidence regarding the

job placement rates for TPPs and how these rates may vary over time, across institutions, and by licensure areas. In North Carolina, these job placement rates are particularly important given the on-going need for teachers in high-need schools and subject-areas and concerns about the current teacher shortage. Therefore, EPIC partnered with the UNC system, the largest supplier of teachers to North Carolina public schools (NCPS), to track the job placement rates of their initially-prepared teachers and to examine whether differences exist between graduates who do versus those who do not secure teaching jobs in the state.

## Background

To facilitate this research the UNC General Administration (UNC-GA) provided EPIC with data identifying individuals who were initially-prepared to teach by UNC system institutions (see Table 1 for a list of UNC system institutions). Here, initially-prepared teachers include (1) those graduating with an undergraduate education degree or those earning a teaching license concurrent with a non-education undergraduate degree and (2) those graduating with a graduate level education degree resulting in an initial teaching license (e.g. Master of Arts in Teaching). As displayed in the top panel of Table 2, EPIC organized these data into eight graduating cohorts, from the 2005–06 academic year through the 2012–13 academic year, where membership in a particular cohort indicates that the initially-prepared teacher graduated in either the fall, spring, or summer of that academic year (e.g. Fall 2005, Spring 2006, or Summer 2006 for cohort 1). Overall, the UNC system produced more than 25,000 initially-prepared teachers during this eight year period, with ECU, ASU, UNCG, and UNCC serving as the largest suppliers. The size of each graduating cohort rose throughout the study period and then fell for the 2012–13 cohort—consistent with the UNC system’s decade-long focus on producing more teachers and the recent declines in teacher education enrollments. Finally, the bottom panel of Table 2 shows licensure categories for the initially-prepared teachers. Elementary grades (K–6) is the largest licensure category in the UNC system; over the study period, UNC system institutions increased production of initially-prepared teachers in the high-need licensure areas of mathematics, science, and special education.

With certified salary data provided by the North Carolina Department of Public Instruction (NCDPI), EPIC created three variables to track whether UNC system initially-prepared teachers secured teaching positions in NCPS. In Figures 1–3, *Teach Now* indicates whether an initially-prepared graduate teaches in NCPS in the school-year immediately following graduation. For example, members of the 2007–08 graduating cohort who teach in the 2008–09 school year are labeled as *Teach Now*.<sup>1</sup> *Teach Within Two* indicates whether an initially-prepared graduate teaches in NCPS in one of the two school-years immediately

Table 1: UNC System Institutions

UNC System Institution	Abbreviation
Appalachian State University	ASU
Elizabeth City State University	ECSU
East Carolina University	ECU
Fayetteville State University	FSU
North Carolina Agricultural and Technical State University	NCA&T
North Carolina Central University	NCCU
North Carolina State University	NCSU
University of North Carolina Asheville	UNCA
University of North Carolina Chapel Hill	UNCCH
University of North Carolina Charlotte	UNCC
University of North Carolina Greensboro	UNCG
University of North Carolina Pembroke	UNCP
University of North Carolina Wilmington	UNCW
Western Carolina University	WCU
Winston-Salem State University	WSSU

following graduation—the 2008–09 or 2009–10 school-years for the 2007–08 graduating cohort. Finally, *Teach Within Three* indicates whether an initially-prepared graduate teaches in NCPS in one of the three school-years immediately following graduation—the 2008–09, 2009–10, or 2010–11 school-years for the 2007–08 graduating cohort. This last category may be particularly important for initially-prepared graduates pursuing graduate-level education prior to beginning teaching.

For brevity, in the following sections EPIC displays data for the *Teach Now* and *Teach Within Three* categories only.<sup>2</sup> There are two important points to aid interpretation of the following figures: (1) these job placement rates are for traditional NCPS only and do not capture whether an initially-prepared teacher secured a teaching position in a private school, charter school, or school outside North Carolina and (2) many factors outside the quality of TPPs—graduate preferences, labor markets, the economy—may impact the job placement rates of initially-prepared teachers.

<sup>1</sup>For graduates in the fall academic period (e.g. Fall 2007), *Teach Now* is equal to 1 if they teach in either the second semester of the 2007–08 school-year or the 2008–09 school year.

<sup>2</sup>In addition to the *Teach Now*, *Teach Within Two*, and *Teach Within Three* categories, EPIC also created variables to capture whether an initially-prepared graduate held any position (teaching or non-teaching) in a NCPS. These values are slightly higher than those displayed in Figures 1–3.

Table 2: Counts of Initially-Prepared Graduates by Cohort-Year and Licensure Area

University	Total	2005-06 Cohort	2006-07 Cohort	2007-08 Cohort	2008-09 Cohort	2009-10 Cohort	2010-11 Cohort	2011-12 Cohort	2012-13 Cohort
ASU	4002	428	402	430	552	592	539	568	491
ECSU	323	23	27	32	48	53	58	43	39
ECU	4202	447	540	530	575	511	557	548	494
FSU	802	90	71	80	113	149	111	90	98
NCA&T	539	33	29	51	69	67	96	109	85
NCCU	494	29	50	82	73	64	61	78	57
NCSU	1718	94	136	156	188	224	334	277	309
UNCA	312	41	26	35	42	31	47	41	49
UNCCH	1175	151	148	141	149	167	164	162	93
UNCC	3138	298	352	398	412	401	405	441	431
UNCG	3293	444	465	354	394	396	441	478	321
UNCP	934	81	110	114	116	135	112	144	122
UNCW	2420	270	308	263	305	323	320	308	323
WCU	1860	126	191	252	256	281	242	288	224
WSSU	329	24	24	29	39	41	59	60	53
<b>OVERALL</b>	<b>25541</b>	<b>2579</b>	<b>2879</b>	<b>2947</b>	<b>3331</b>	<b>3435</b>	<b>3546</b>	<b>3635</b>	<b>3189</b>
Arts	1820	179	205	227	218	265	229	250	247
Birth to Kindergarten	1229	91	82	97	192	202	186	201	178
Elementary	10850	1076	1145	1362	1503	1512	1465	1493	1294
English/LA	2082	195	210	249	232	286	336	301	273
Foreign Language	329	47	38	31	35	45	36	57	40
Health and PE	1320	117	170	162	185	176	149	204	157
Mathematics	1718	135	176	159	215	254	263	245	271
Science	1367	139	163	130	176	167	187	213	192
Social Studies	2611	233	301	318	339	309	431	352	328
Special Education	1609	112	164	168	237	201	224	252	251
Other	1422	186	194	159	148	186	211	219	119

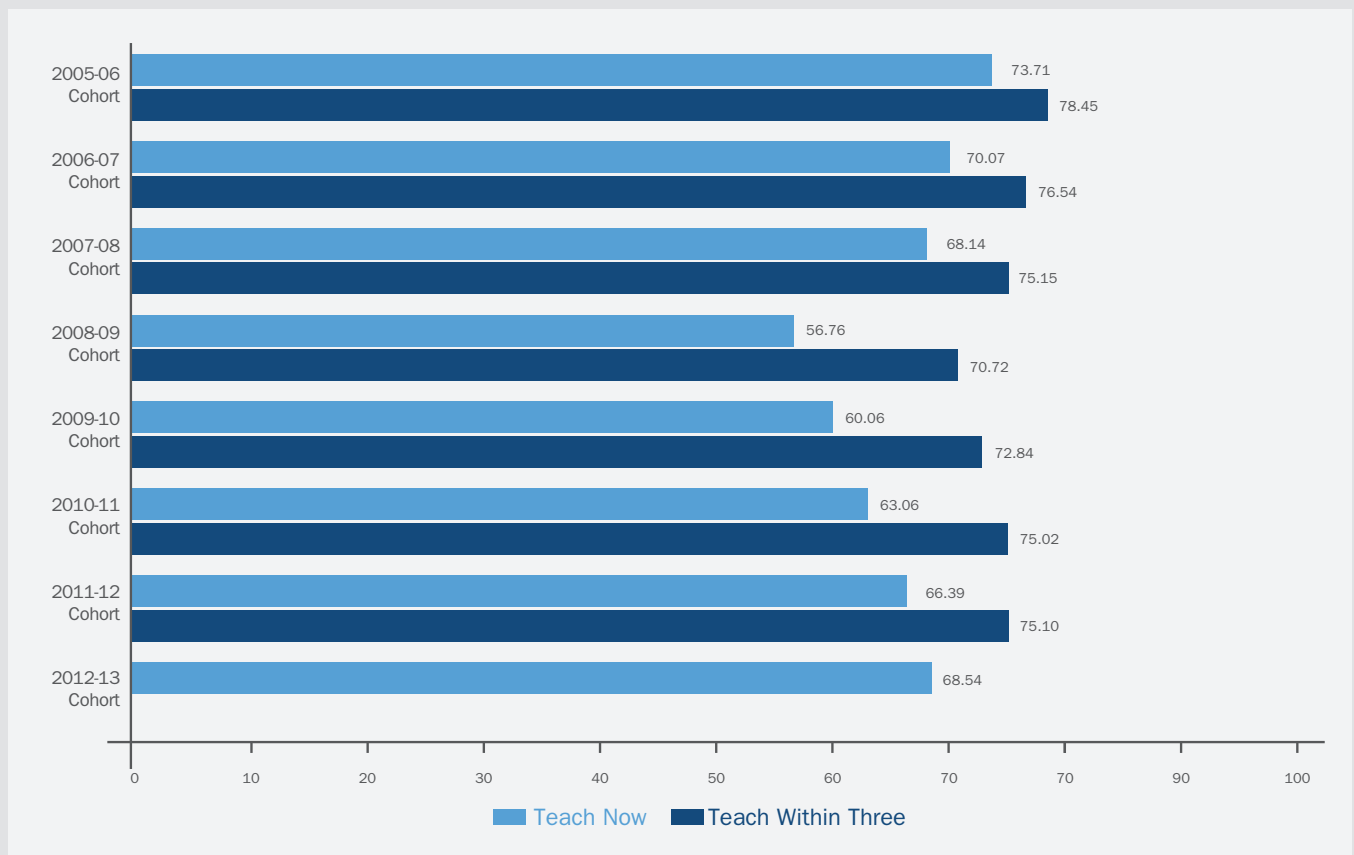
Note: For the counts presented in the bottom panel of Table 2, initially-prepared graduates can hold more than one licensure area (e.g. English-Language Arts and Social Studies).

## What are the job placement rates by graduating cohort?

Figure 1 displays *Teach Now* and *Teach Within Three* job placement rates for each graduating cohort in the study sample. Overall, job placement rates were the highest for the initial study cohort—73.71 and 78.45 percent for 2005–06 graduates—and then fell each year until the onset of the Great Recession. With the fiscal downturn, North Carolina reduced the size of its teacher workforce by nearly 4,000 teachers between 2008–09 and 2009–10 and hired 3,000 fewer first-year teachers in the 2009–10 school-year. This adversely impacted the 2008–09 graduating cohort,

whose *Teach Now* percentage was 56.76. While the 2008–09 cohort’s *Teach Within Three* percentage rose to 70.72, this is still lower than the three-year job placement rates for any other graduating cohort and suggests that entering the job market at the onset of the fiscal crisis (1) had long-term impacts on employment in NCPS and (2) may have pushed more graduates to seek employment in other states or professions. The *Teach Now* and *Teach Within Three* job placement rates have been steadily rising since the 2008–09 graduating cohort, but remain lower than the job placement rates for the initial, pre-recession, cohorts in the study sample.

Figure 1: Job Placement Rates by Graduating Cohort



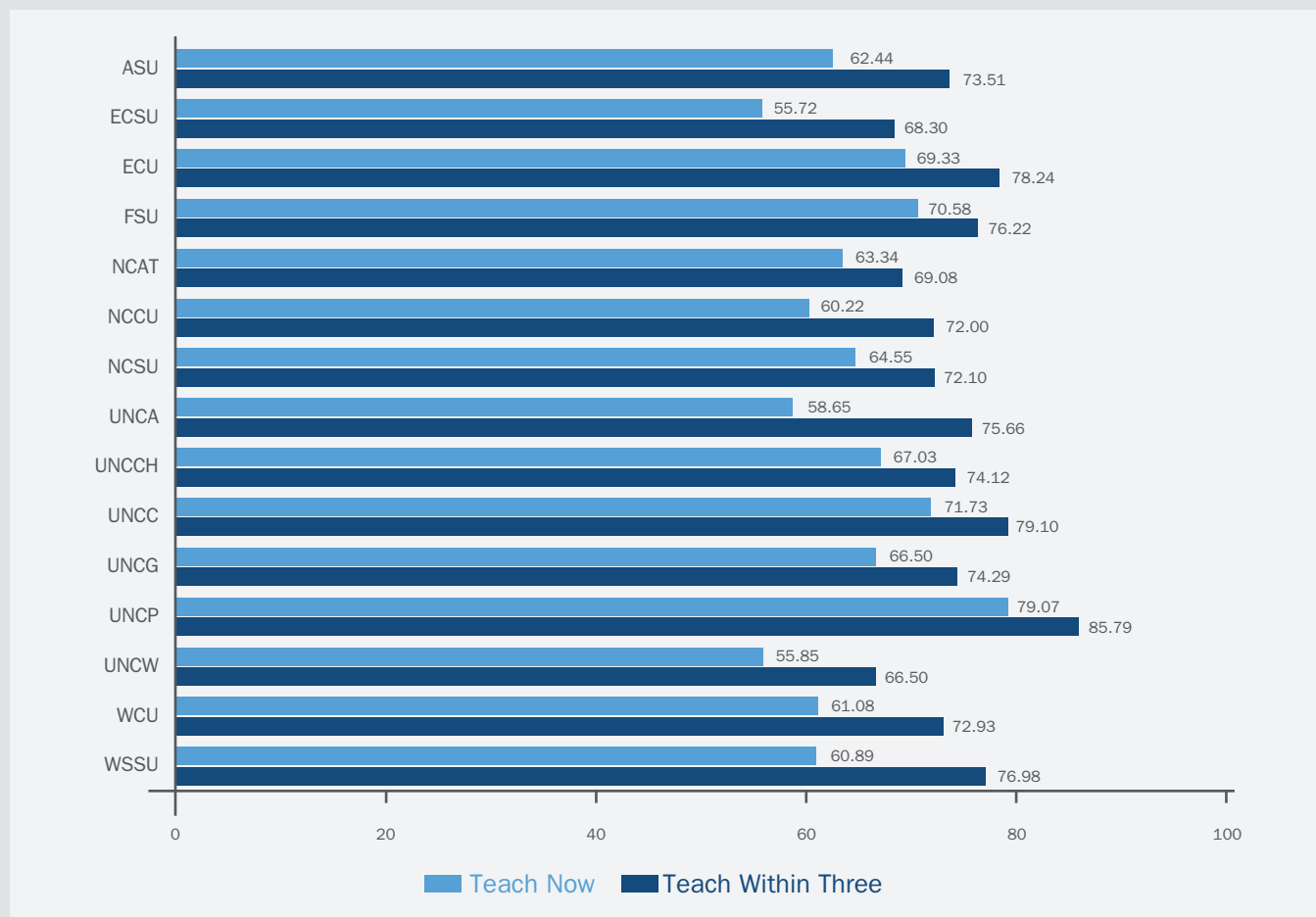
Note: This figure displays ‘Teach Now’ and ‘Teach Within Three’ job placement rates by graduating cohort. Given the coverage of the NCDPI salary file—traditional PK-12 public schools—data for this graph exclude the birth-to-kindergarten licensure area. A ‘Teach Within Three’ value is not available yet for the 2012-13 graduating cohort.

## What are the job placement rates by UNC system institution?

Using data across all graduating cohorts, Figure 2 displays *Teach Now* and *Teach Within Three* job placement rates for each UNC system institution. When interpreting these results it is important to consider that graduates of some institutions, such as ASU and ECU, secure jobs in many school districts across North Carolina, while graduates of other institutions, such as FSU, NCSU, and UNCA, are primarily concentrated in a small number of school districts. Overall, there is a substantial amount of variation, across institutions, in the job placement rates of their initially-prepared teachers. The institutions with the

five highest *Teach Now* percentages are UNCP, UNCC, FSU, ECU, and UNCCH. Conversely, the institutions with the five lowest *Teach Now* percentages are WSSU, NCCU, UNCA, UNCW, and ECSU. UNCW and ECSU also have the lowest *Teach Within Three* percentages, suggesting that their proximity to neighboring states may allow graduates to more easily secure employment outside North Carolina. While institutions with higher or lower *Teach Now* job placement rates typically maintain their relative position for *Teach Within Three* percentages, WSSU and UNCA went from low *Teach Now* rates to high *Teach Within Three* rates. This may indicate that a higher percentage of graduates from these institutions are pursuing additional education prior to beginning teaching or are waiting for a teaching position to open in a preferred school/district.

Figure 2: Job Placement Rates by UNC System Institution



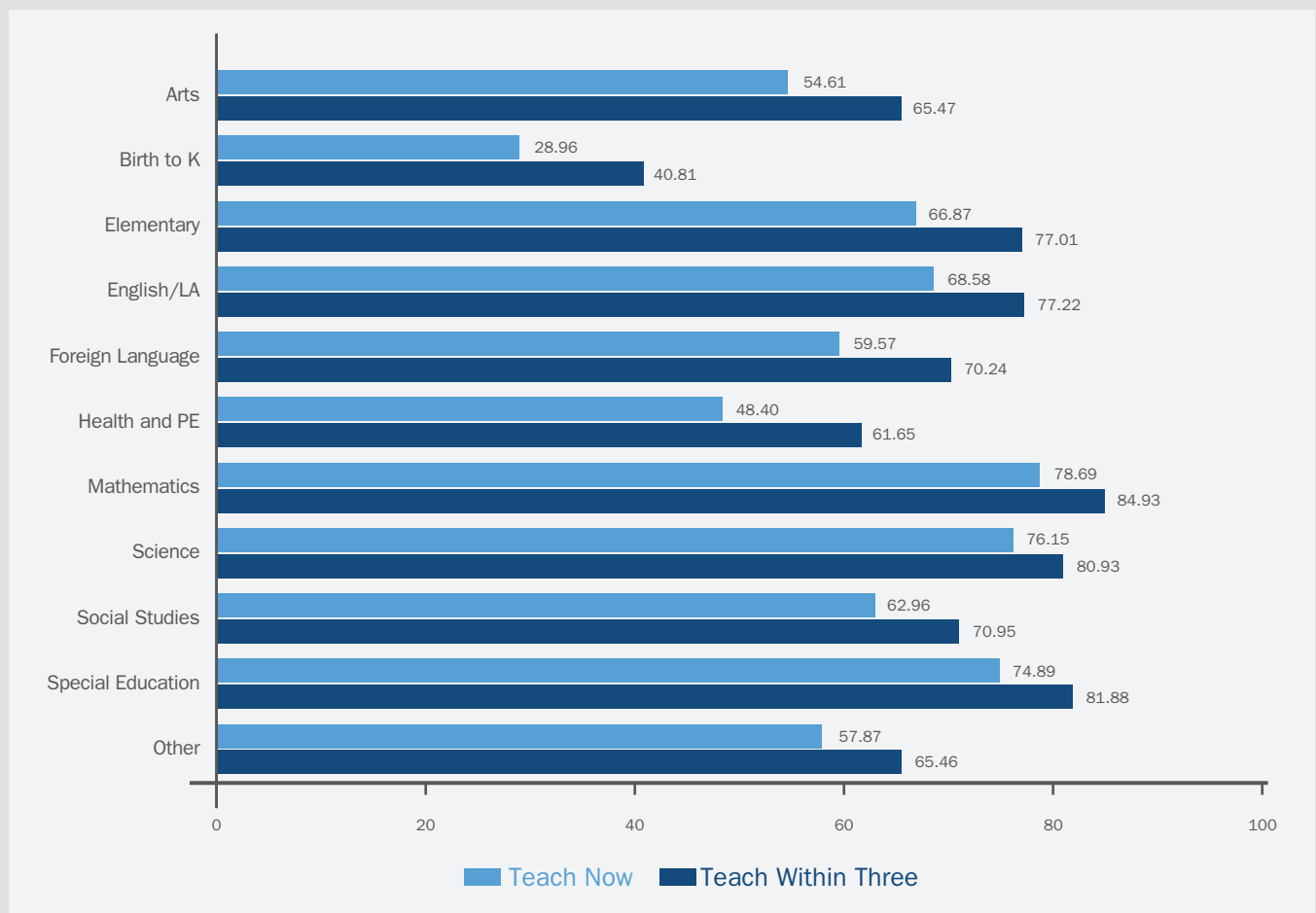
Note: This figure displays 'Teach Now' and 'Teach Within Three' job placement rates by UNC system institution. Given the coverage of the NCDPI salary file—traditional PK-12 public schools—data for this graph exclude the birth-to-kindergarten licensure area.

## What are the job placement rates by licensure area?

Figure 3 displays *Teach Now* and *Teach Within Three* job placement rates for 11 different licensure areas or groups of licensure areas. Overall, there are several important points from these data. First, mathematics, science, and special education are three of the highest-need licensure areas in NCPS and these three areas have the highest *Teach Now* and *Teach Within Three* job placement rates. This suggests that school district demand for qualified teachers in these areas leads to increased hiring rates. Second, elementary

grades is the largest licensure area for the UNC system and approximately 66 percent of these graduates secure a teaching position in NCPS in the year after graduation, with 77 percent securing a teaching position in NCPS within three years of graduation. Finally, the job placement rates for the birth-to-kindergarten licensure area are much lower than those for other licensure areas because the NCDPI salary data only cover PK-12 public schools in the state. Birth-to-kindergarten graduates securing employment outside of traditional public schools are not included in these job placement rates.

Figure 3: Job Placement Rates by Licensure Areas



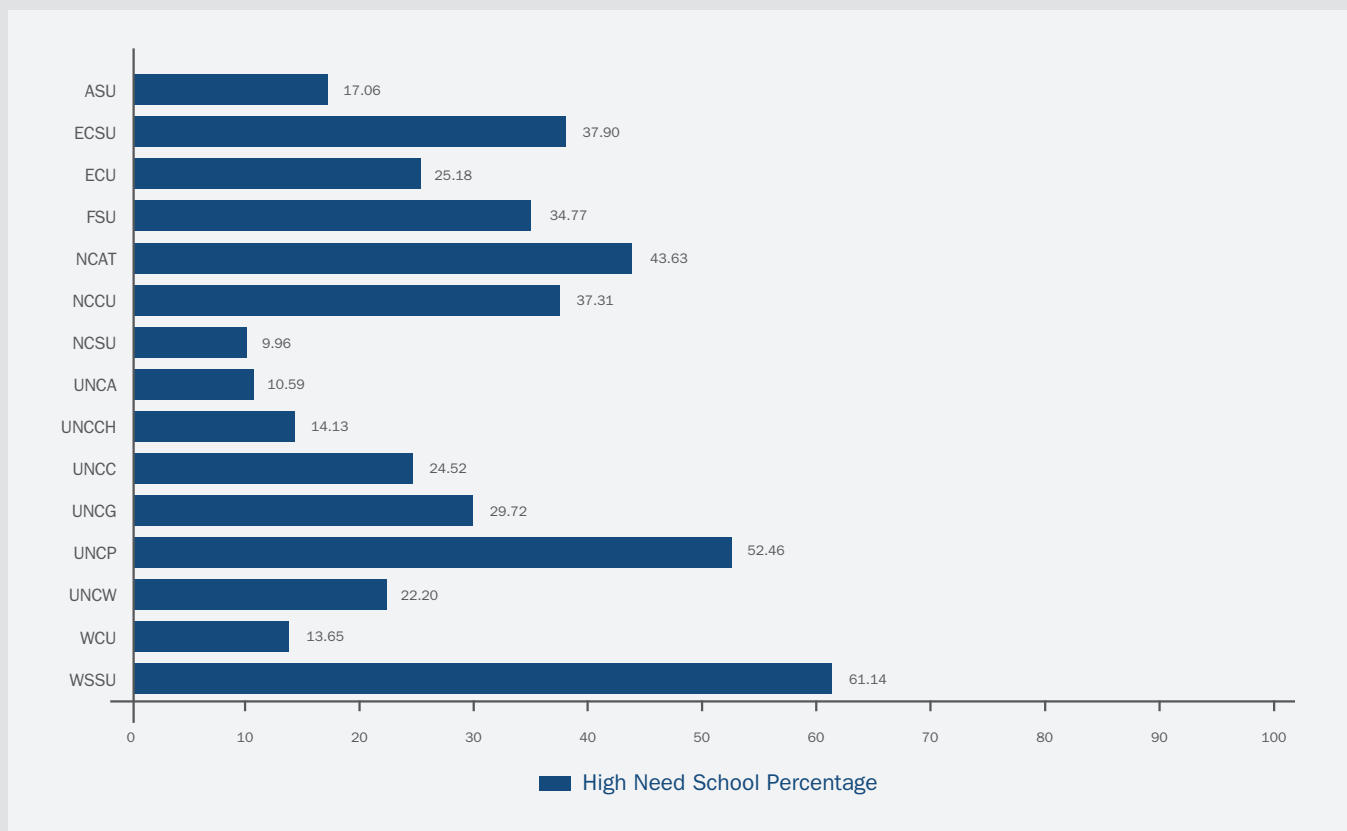
Note: This figure displays 'Teach Now' and 'Teach Within Three' job placement rates by licensure area.

## What are the job placement rates for UNC system institutions in high-need schools?

Given the regulations proposed by the United States Department of Education that would report the percentage of TPP graduates teaching in high-need schools, EPIC calculated the percentage of initially-prepared teachers, by UNC system institution, whose initial teaching placement was in a high-need school. For this analysis, EPIC defined a high-need school as one whose percentage of students qualifying for subsidized school meals was in the top quartile of NCPS. Overall, Figure 4 shows that these values vary greatly across institutions. The six institutions with the highest rates of teachers initially-employed in high need

schools are the UNC system's five historically black colleges and universities—WSSU, NCA&T, ECSU, NCCU, and FSU—and UNCP, an institution that historically serves North Carolina's American Indian population. For example, over 61 percent of the WSSU graduates who secured a teaching position in NCPS during our study period initially taught in a high need school. Conversely, the UNC system institutions with the lowest rates of teachers initially-placed into high need schools—NCSU, UNCA, WCU, UNCCH, and ASU—predominately serve more affluent school districts or regions of the state. These results suggest that accountability systems incorporating metrics for job placement rates in high need school environments will be influenced by the characteristics of teacher candidates selected into the TPP and by the location of the TPP.

Figure 4: The Percentage of UNC System Institution Teachers Whose Initial Teaching Position Was in a High-Need School



Note: This figure displays the percentage of teachers, by UNC system institution, whose initial teaching position was in a high-need school.

## Are there differences between graduates who teach versus those who do not teach in NCPS?

In addition to identifying the initially-prepared teachers in each graduating cohort, the UNC-GA provided EPIC with indicators of academic performance—high school GPA, SAT scores, and collegiate GPA—for these graduates. This allows EPIC to compare the academic performance of initially-prepared teachers who do versus do not secure teaching positions in NCPS. Specifically, for these analyses, EPIC compared the academic performance of graduates who teach in NCPS within two years of graduation versus those who do not.<sup>3</sup>

Compared to graduates who do not teach in NCPS within two years of graduation, the top panel of Table 3 shows that those who teach in NCPS have significantly higher high school and college GPAs but significantly lower SAT test scores. Within each graduating cohort, the middle

panel of Table 3 indicates that graduates who teach in NCPS within two years frequently have higher GPAs—high school and college. While average SAT scores are generally higher for those who do not teach in NCPS within two years of graduation, these differences are only significant for the 2008–09 and 2010–11 cohorts. More importantly, these data show that average SAT scores have risen by approximately 50 to 60 points since the 2005–06 graduating cohort. Essentially, the academic profile of UNC system teacher education graduates is on the rise. Finally, the bottom panel of Table 3 shows these indicators of academic performance for select licensure areas. While the differences are not always statistically significant, those who teach in NCPS often have higher high school GPAs and lower SAT scores than their peers with the same licensure area who do not teach in NCPS. These data also show sizable differences in academic performance across licensure areas. For example, graduates with licenses in middle and secondary grades content areas—English/language arts, mathematics, science, and social studies—have higher high school GPAs and SAT scores than graduates in elementary grades and special education.

Table 3: Comparing Graduates Who Do Versus Do Not Teach in NCPS

Teach Within Two	High School GPA		SAT Scores		Collegiate GPA	
	Yes	No	Yes	No	Yes	No
Overall	<b>3.54*</b>	3.44	<b>1028.64*</b>	1040.74	<b>3.44*</b>	3.39
2005-06 Cohort	<b>3.45*</b>	3.29	1005.68	1002.14	<b>3.39*</b>	3.32
2006-07 Cohort	3.44	3.35	1002.18	1022.88	<b>3.42*</b>	3.33
2007-08 Cohort	<b>3.41*</b>	3.30	1008.52	1012.20	<b>3.37*</b>	3.30
2008-09 Cohort	3.42	3.35	<b>1009.18*</b>	1034.51	<b>3.44*</b>	3.38
2009-10 Cohort	<b>3.53*</b>	3.37	1034.00	1036.10	<b>3.44*</b>	3.41
2010-11 Cohort	3.64	3.59	<b>1051.32*</b>	1071.61	3.46	3.43
2011-12 Cohort	<b>3.66*</b>	3.57	1052.94	1060.63	<b>3.47*</b>	3.42
2012-13 Cohort	<b>3.72*</b>	3.63	1055.44	1066.38	<b>3.49*</b>	3.45
Elementary	<b>3.49*</b>	3.38	999.04	1002.39	<b>3.49*</b>	3.44
English/LA	3.64	3.53	1082.84	1098.59	3.39	3.41
Math	3.90	3.77	1117.85	1141.55	3.41	3.39
Science	3.74	3.58	1099.05	1117.07	3.39	3.37
Social Studies	<b>3.63*</b>	3.51	<b>1062.15*</b>	1098.82	<b>3.35*</b>	3.30
Special Education	3.19	3.18	<b>954.88*</b>	999.81	3.53	3.52

Note: This table compares indicators of academic performance for graduates who do versus do not teach in NCPS within two years of graduation. SAT scores are a combination of mathematics and critical reading. \* indicates statistical significance at the 0.05 level.

<sup>3</sup>Because *Teach Within Three* data are not yet available for the 2012–13 graduating cohort, EPIC focused on differences in academic performance for the *Teach Within Two* category. Given the low job placement rates for the birth-to-kindergarten licensure area, EPIC excluded them from these analyses.



## Discussion

Teacher preparation programs currently operate in a policy environment that values evidence, accountability, and continuous program improvement. In this context, the job placement rates of initially-prepared teachers are an important indicator for public reporting and evidence-based programmatic reforms. However, these job placement rates must be interpreted carefully, as the percentage of program graduates securing teaching positions is not a direct reflection of the quality of TPPs. Many factors influence the reported job placement rates for TPPs: preferences of program graduates, the economy, the location of TPPs in relation to labor markets, the types of licensure areas a TPP grants, and the quality of data to track program graduates into teaching positions.

The job placement rates for teachers initially-prepared by UNC system institutions illustrate many of these points. First, the onset of the Great Recession had a sizable impact on the hiring of beginning teachers in NCPS. In particular, graduates in 2008–09 struggled to find a teaching position in North Carolina; many may have needed to seek employment in other states or professions. Second, there is substantial variation, across UNC system institutions, in the job placement rates of their initially-prepared teachers. While some of these differences may reflect program quality, differences across institutions likely also reflect the demand for teachers in the school districts surrounding TPPs, the proximity of TPPs to other states, and the

preferences of graduates to pursue additional education or wait for a teaching position in a preferred district/school. Third, teaching licensure areas in high demand—mathematics, science, and special education—had much higher job placement rates. Teacher preparation programs that produce many of these teachers are likely to have higher job placement rates than programs preparing many teachers in high-supply licensure areas (e.g. elementary grades). Lastly, EPIC could only track UNC system graduates into teaching positions in NCPS—more robust data systems crossing state lines and into different types of schools would return higher rates of graduates securing teaching jobs.

## For more research on this topic

Goldhaber, D., Krieg, J., & Theobald, R. (2014). Knocking on the door to the teaching profession? Modeling the entry of prospective teachers into the workforce. *Economics of Education Review*, 43, 106–124.

Lankford, H., Loeb, S., McEachin, A., Miller, L., & Wyckoff, J. (2014). Who enters teaching? Encouraging evidence that the status of teaching is improving. *Educational Researcher*, 43(9), 444–453.

Reininger, M. (2012). Hometown disadvantage? It depends on where you're from. Teachers' location preferences and the implications for staffing schools. *Educational Evaluation and Policy Analysis*, 34(2), 127–145.

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