



Articulation Agreements between Community Colleges and Teacher Preparation Programs: Outcomes for East Carolina University’s Partnership East

In this research brief, we examine the characteristics, employment, effectiveness, and retention of East Carolina University’s (ECU) Partnership East participants. This work aims to enhance research on “grow your own” teacher preparation models. Our analyses highlight three key findings when comparing Partnership East graduates to traditionally-prepared ECU teachers and other early-career teachers working in the same schools. Empirical results indicate that (1) a large majority of Partnership East graduates begin their teaching careers in the same regions and school districts in which they live; (2) Partnership East teachers perform comparably to ECU comparison teachers and all other early-career teachers in their schools; and (3) Partnership East teachers are more likely to remain teaching in North Carolina Public Schools (NCPS) and in their initial hiring districts than their comparison counterparts. These results provide some evidence that “grow your own” programs may be an effective model for hard-to-staff regions challenged by high teacher vacancies and attrition.

Introduction

School districts in rural and high-poverty regions face acute challenges in attracting teachers who are effective and who will remain in local schools. Partnerships between local community colleges and university-based teacher preparation programs (TPPs) are one promising approach to help address these staffing challenges. In particular, community colleges and university-based TPPs can establish 2+2 articulation agreements in which students complete the first two years of their teacher preparation coursework at the partnering community college and then finish their degree and teacher certification requirements through in-person and/or online coursework at a four-year institution. These 2+2 programs are one way for communities to “grow their own” teachers and provide a conduit into teaching for individuals whom attending a 4-year college or university is prohibitive due to distance, time, and/or finances.

While 2+2 programs offer many potential benefits to districts and schools, there is little empirical evidence on who completes such programs, whether and where they teach, and their performance and retention as teachers. Our study assesses a large and long-standing 2+2 program in North Carolina: East Carolina University’s (ECU) Partnership East. Our research answers the following questions: (1) What are the characteristics of students who enroll in and complete Partnership East? (2) Which Partnership East graduates secure teaching jobs in North Carolina and in what types of schools? (3) How effective are Partnership East graduates? and (4) Do Partnership East graduates remain in teaching? With this study, we aim to provide evidence that aids program decision making and informs state policymakers, school district officials, and other universities.

Background

Since starting the first hub site in Craven County in 2002, Partnership East has provided a pathway for non-traditional teacher education students to obtain their teaching licenses by completing the first two years of their program at a community college before transferring to and completing their education degree at ECU. Through a cohort model, Partnership East offers education degrees leading to teacher licensure in elementary education, middle grades education, and special education. The program includes online degree coursework and placement in proximal public schools for observation and student teaching internships. Specifically, Partnership East forms regional partnerships with centrally-located community colleges and surrounding public school districts. These partnerships are in the north central, south central, and coastal regions of North Carolina¹. Coordinators at regional partnership sites facilitate initial Partnership East enrollment, act as academic advisors, and guide students' matriculation into upper division courses at ECU. Since its inception, Partnership East has offered scholarship funds, when available, to students admitted into the upper

division at ECU. Over the years, scholarship funders have included Wachovia, Wells Fargo, and most recently, the North Carolina State Employees' Credit Union. Successful Partnership East students graduate from ECU with bachelor's degrees and a North Carolina teaching license.

As shown in Table 1, from 2002 through the 2016-17 school year, Partnership East has enrolled 1,037 participants. The majority of participants identified as female (91.7%), White (85.9%), and residing in Tier 2 counties (57.4%). Over 44 percent had previous employment as teaching assistants. On average, participants initially enrolled in Partnership East at about 32 years of age, with the highest enrollment in Wayne, Johnston, Craven, Nash, or Wake Tech Community Colleges. Of the Partnership East participants who declared a major at ECU (n=914), approximately 75% majored in elementary education, 20% majored in special education in the general curriculum, and 5% majored in middle grades education.

To examine the completion, employment, and workforce outcomes of Partnership East participants, we analyzed programmatic data from ECU and administrative data from the North Carolina Department of Public Instruction (NCDPI). Our programmatic analyses examined whether participant characteristics predict program completion. For these analyses we used ECU program data on all current and previous Partnership East participants, including information on participant demographics, prior professional education experiences (e.g., teaching assistants), programmatic milestones (e.g., enrollment, withdrawal, and completion), and certification requirements (e.g., internships, licensure exam scores, and GPAs).

Our employment analyses focus on whether, where, and how soon Partnership East program completers obtained teaching jobs in a North Carolina public school (NCPS). To examine these outcomes, we analyzed certified salary files and school characteristics data from NCDPI. Finally, we assessed the effectiveness and retention of Partnership East teachers (workforce outcomes) with administrative data from NCDPI—teacher EVAAS estimates, North Carolina Educator Evaluation System (NCEES) ratings, and salary data to examine retention and mobility. EVAAS and NCEES analyses include first, second, and third-year teachers, with additional analyses solely comparing first-year teachers from Partnership East and other comparison groups. Retention analyses assessed whether teachers return

Table 1: Overall Partnership East Participant Characteristics

Total Program Entrants (n=1037)	Percent
Female	91.71
Race/Ethnicity	
White American	85.92
Black American	6.94
Hispanic American	2.99
Asian American	0.29
American Indian/Alaska Native	0.29
Hawaiian/Pacific Islander	0.10
Multi-Race	0.39
Unknown Race or Ethnicity	3.09
Teaching assistant experience	44.20
Average age at enrollment, in years	31.87
Tier of Residence County ^a (n=1019)	
Tier 1	11.68
Tier 2	57.41
Tier 3	30.91

^a Using data taken from the North Carolina Department of Commerce's 2018 County Tier Designations <https://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations>

¹ Partnership East also offers fully online coursework delivery through a virtual service area as a collaboration between ECU College of Education and North Carolina Community Colleges.

for a second and fifth year of teaching in the school district that initially hired them and in NCPS, overall.

Our primary analyses examine employment and workforce outcomes for Partnership East completers versus a comparison sample of all other traditionally-prepared ECU elementary education graduates from the same graduating cohorts. The ECU comparison sample includes 1,848 graduates teaching in 633 schools and 86 school districts. In addition to the ECU comparison group, we compare the effectiveness (EVAAS and NCEES) of Partnership East graduates with that of all other first, second, and third-year teachers working in the same schools as Partnership East teachers. Likewise, we compare the retention rates of Partnership East and all other teachers who began their teaching careers in the same schools. For all outcomes, we performed sub-analyses comparing Partnership East

completers who had previously worked as teaching assistants versus those who did not, and Partnership East completers who obtained a job in the same county in which they resided versus those who did not.

Which Participants Successfully Complete Partnership East?

Table 2 displays participant characteristics for those who completed Partnership East in comparison to participants who either withdrew or never finished the program. Beginning with the first graduating cohort in 2004–05, of the 1,037 Partnership East enrollees, 789 participants completed the program² (76.1%), 71 withdrew (6.8%), and 177 (17.1%) are still in the program at the time of this study. Relative to non-completers, Partnership East completers

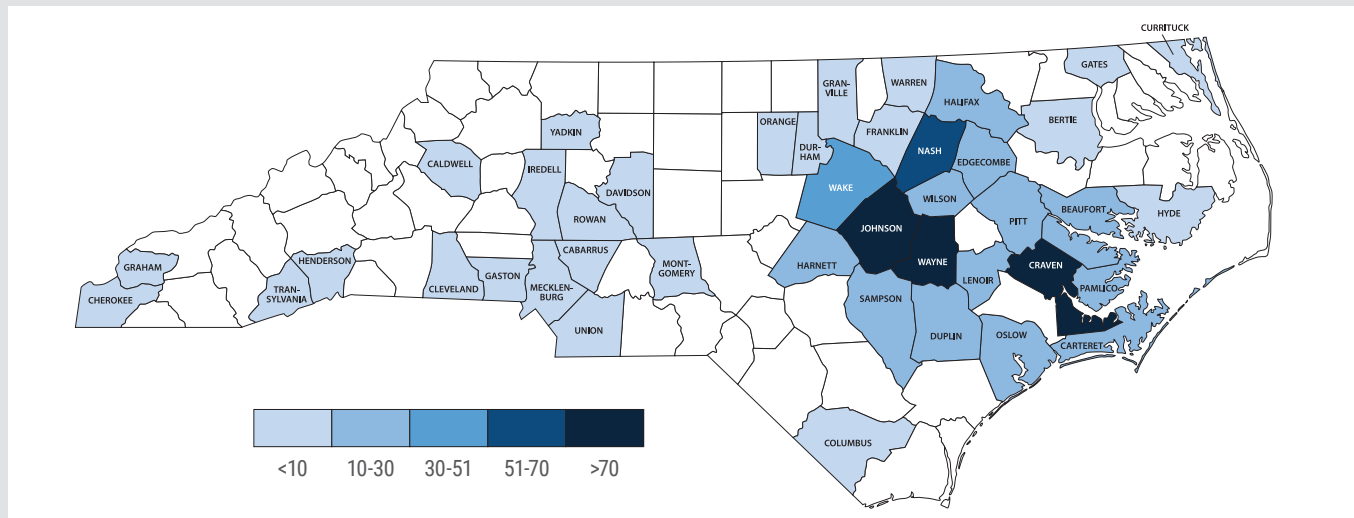
Table 2: Characteristics of Partnership East Completers and Non-Completers

	Completers (n=789) Percent	Non-completers (n=71) Percent
Female	91.76	92.96
Race/Ethnicity		
White American	87.33*	74.65
Black American	6.84	19.72**
Hispanic American	2.66	1.41
Asian American	0.13	0.00
American Indian/Alaska Native	0.38	0.00
Hawaiian/Pacific Islander	0.13	0.00
Multi-Race	0.38	0.00
Unknown Race or Ethnicity	2.15	4.23
Teaching assistant experience	51.78**	30.99
Average age at enrollment, in years	32.66	30.69
Tier of Residence County^a		
Tier 1	10.36	21.13**
Tier 2	57.64+	63.38
Tier 3	31.99*	15.49
Top 5 Community Colleges		
	Wayne	Craven
	Johnston	Edgecombe
	Craven	Wayne
	Nash	Nash
	Wake Tech	Johnston

Note: Analyses compare the characteristics of Partnership East completers versus non-completers. '+', '**', and '***' indicate statistically significant findings at the 0.10, 0.05, and 0.01 levels, respectively. ^a Using data taken from the NC Department of Commerce's 2018 County Tier Designations <https://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations>

² Completers are defined as Partnership East participants who graduated from ECU with a bachelor's degree and teaching certification.

Figure 1: Map of Partnership East First-year Teaching Placements



were more likely to identify as White, live in Tier 3 counties, and have previous teaching assistant experience. Conversely, participants who identified as Black or who resided in Tier 1 counties were more likely to leave the program. Our analyses did not find statistically significant differences in pre-professional licensure exam scores (e.g., Praxis Pre-professional Skills Test, or Praxis I) for completers versus non-completers. However, both Partnership East completers and non-completers scored slightly higher than the state average.

Which Partnership East Graduates Obtain Teaching Jobs in NC and Where Do They Teach?

Of the 789 Partnership East completers, 634 (80.4%) secured a teaching job in NCPS by the 2017-18 academic year. Among Partnership East completers, those with previous experience as a teaching assistant or who had higher ECU GPAs were more likely to get a teaching job in NCPS.

One goal of 2+2 articulation agreements is to provide teacher training to students who live too far away from the degree-granting institution, but who may plan to teach in their residence counties. Of the 634 Partnership East teachers in NCPS, 577 (91%) were initially hired in their region³ of residence; 444 (70%) were initially hired in their county of residence. Partnership East teachers who had been teaching assistants were also more likely to get

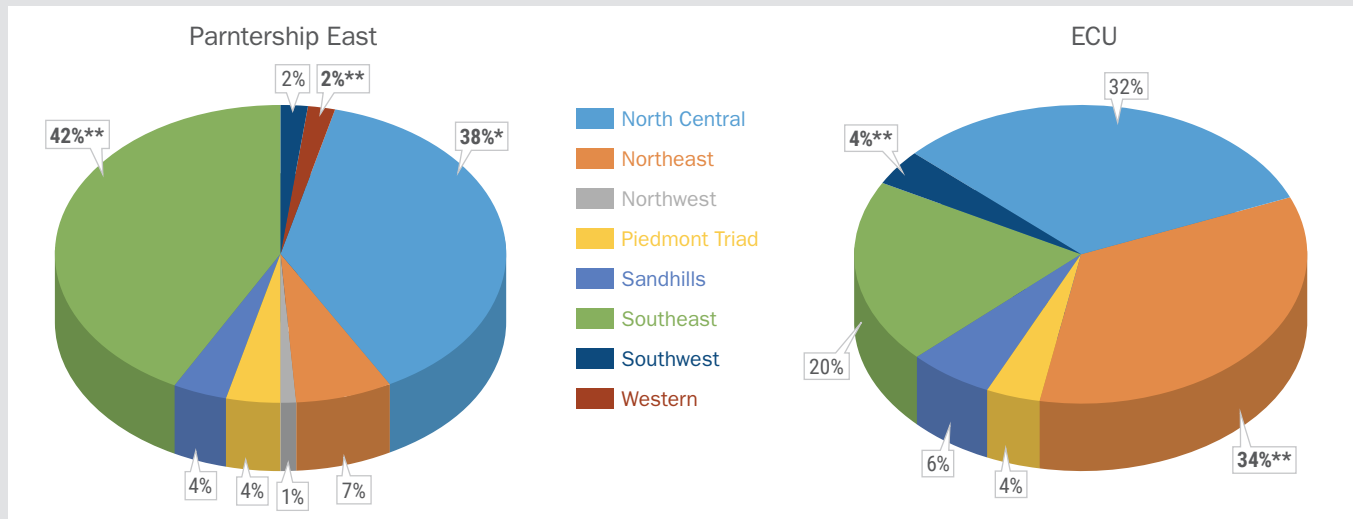
an initial teaching job in a rural setting than those who had not been teaching assistants. Figure 1 highlights the locations of Partnership East teachers' initial job placements by concentration.

When comparing the school locations of Partnership East teachers' initial job placements to those of ECU teachers from the same graduating cohorts, we found several statistically significant differences. First, Partnership East teachers were more likely to initially work in schools located in the southeast, north central, and western regions of North Carolina, while ECU comparison teachers were more likely to work in schools located in the northeast and southwest regions. Further, Partnership East teachers were more likely to obtain their first teaching jobs in counties with stronger economic prospects (e.g., Tier 2 and 3 counties) than ECU comparison teachers. Figure 2 illustrates the regions in which Partnership East teachers and ECU comparison teachers received their first teaching jobs.

For Partnership East and ECU comparison sample teachers, Figure 3 displays characteristics of their initial school placements. Relative to other ECU graduates, Partnership East teachers were more likely to secure an initial teaching job in a rural county. On average, the schools in which Partnership East teachers worked served slightly lower percentages of economically-disadvantaged students and racial/ethnic minority students.

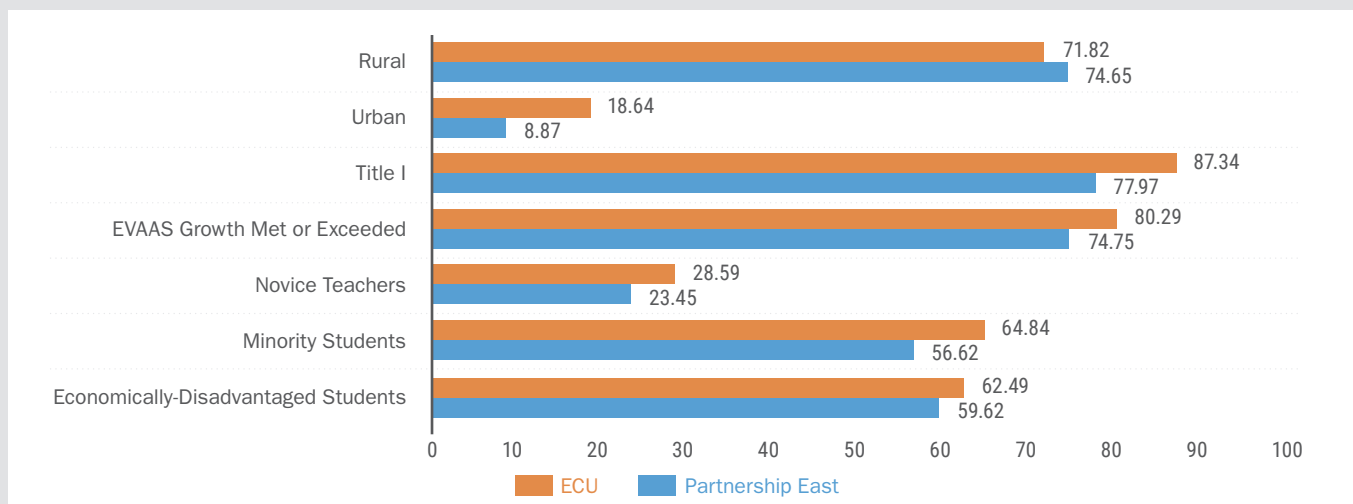
³ Region refers to the eight NC State Board of Education designated education districts, or regions. See <https://stateboard.ncpublicschools.gov/about-sbe/sbe-districts.pdf/> for more information.

Figure 2: Regions of Initial Hire for Partnership East and ECU Comparison Sample Teachers



Note: This figure displays the regions where Partnership East and ECU comparison sample teachers were initially-hired. '+', '**', and '***' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

Figure 3: School Characteristics for Partnership East and ECU Comparison Teachers, by Percentage



Note: This figure displays characteristics of the initial school placement for Partnership East and ECU comparison sample teachers.

How Effective are Partnership East Graduates?

We assess the effectiveness of Partnership East teachers with two measures of performance: (1) teacher EVAAS estimates from the state’s early-grades reading exams (kindergarten through 2nd grade) and End-of-Grade exams in reading, mathematics, and science (elementary and middle grades) and (2) teacher evaluation ratings from the NCEES. We estimate separate EVAAS models for each subject area.

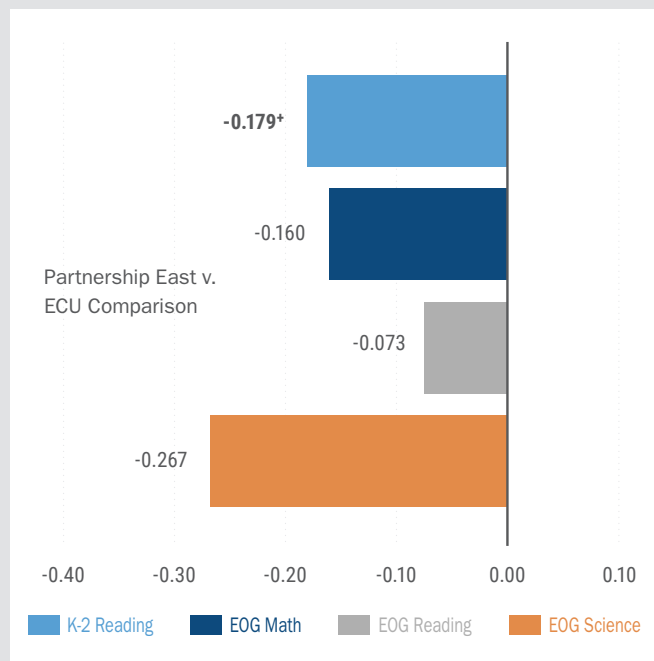
In all EVAAS models, the outcome measure is teachers’ standardized EVAAS estimates.⁴ For each of the five NCEES standards (Leadership, Classroom Environment, Content Knowledge, Facilitating Student Learning, and Reflecting on Practice), we estimate separate models where the outcome variable is teachers’ standardized evaluation rating. In these EVAAS and NCEES analyses, we compared (1) Partnership East teachers to ECU elementary education graduates from the same cohort; (2) Partnership East teachers to all other early-career teachers who taught in the same

⁴ We standardize EVAAS estimates across all NCPS teachers and within each test area.

schools; (3) Partnership East teachers with teaching assistant experience to Partnership East teachers without teaching assistant experience; and (4) Partnership East teachers who returned to their county of residence for their first teaching job to Partnership East teachers who did not. All teacher effectiveness models control for teacher demographics, teacher experience, and school characteristics.

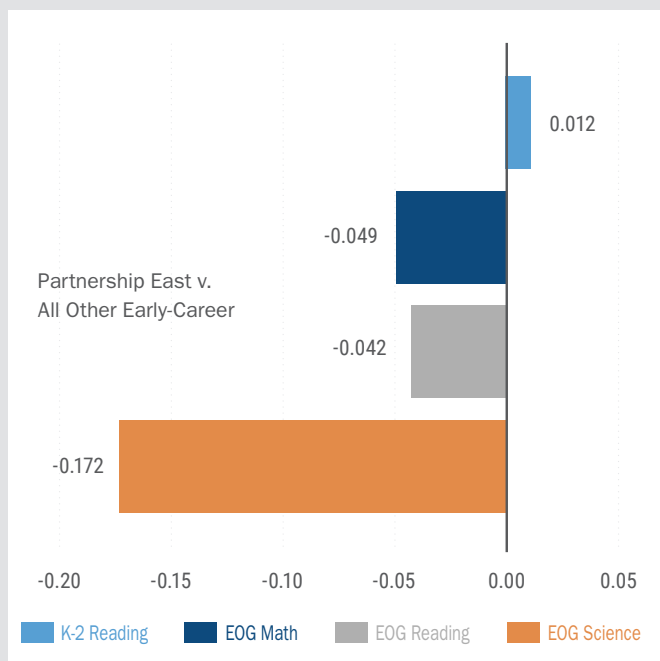
Figure 4 displays EVAAS results comparing early-career Partnership East teachers to early-career ECU teachers from the same graduating cohort. There are no statistically significant differences between Partnership East and ECU comparison teachers in elementary and middle grades mathematics, reading, or science. However, our analysis indicates that Partnership East teachers are significantly less effective than other ECU graduates in K-2 reading (by approximately 18 percent of a standard deviation). Figure 5 indicates that early-career Partnership East teachers perform comparably to all other early-career teachers working in the same schools in early-grades reading and in mathematics, reading, and science. Finally, we compared EVAAS estimates within Partnership East graduates—for those with and without prior teaching assistant experience and for those who were and were not hired within their

Figure 4: EVAAS Results for Partnership East Teachers and ECU Comparison Teachers



Note: This figure displays teacher EVAAS results for Partnership East teachers versus ECU comparison teachers. '+', '*', and '**' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

Figure 5: EVAAS Results for Partnership East and All Other Early-Career Teachers



Note: This figure displays teacher EVAAS results for Partnership East teachers versus all other early-career teachers in the same schools. '+', '*', and '**' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

counties of residence (not graphically represented). There were no statistically significant EVAAS results between these groups of teachers.

The top row of Table 3 presents NCEES results for early-career Partnership East teachers versus early-career ECU teachers from the same graduating cohorts. Partnership East teachers earned significantly higher evaluation ratings on two teaching standards—Leadership and Classroom Environment. For example, Partnership East teachers had evaluation ratings on the Classroom Environment standard nine percent of a standard deviation higher than other ECU graduates. When compared to all other early-career teachers working in the same schools, Partnership East teachers had significantly higher ratings for Classroom Environment but significantly lower ratings for Content Knowledge. Within the Partnership East sample, those with prior teaching assistant experience earned significantly higher evaluation ratings across all five teaching standards (third row). The most substantial result was for the Classroom Environment standard, where former teaching assistants earned ratings 20 percent of a standard deviation higher than Partnership East peers without that experience. Lastly, Partnership East teachers working in their county of residence earned significantly higher evaluation ratings on the Content Knowledge standard.

Table 3: NCEES Results for Partnership East Teachers

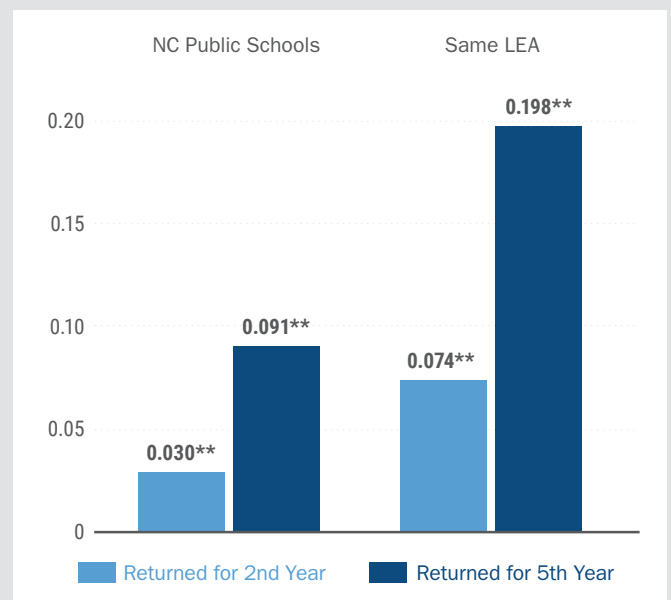
	Leadership	Classroom Environment	Content Knowledge	Facilitating Student Learning	Reflecting on Practice
Early-Career Partnership East vs. Early-Career ECU Comparison	0.060⁺ (0.035)	0.092[*] (0.037)	0.026 (0.033)	0.045 (0.036)	0.035 (0.035)
Early-Career Partnership East vs. All Other Early-Career Teachers in the Same School	0.002 (0.025)	0.046⁺ (0.026)	-0.052[*] (0.024)	0.019 (0.026)	-0.005 (0.025)
Partnership East: Former Teaching Assistants vs. Non-Teaching Assistants	0.119[*] (0.056)	0.208^{**} (0.061)	0.089⁺ (0.053)	0.105⁺ (0.058)	0.111⁺ (0.059)
Partnership East: Teachers Hired in Same County vs. Teachers Hired in a Different County	0.039 (0.058)	0.092 (0.063)	0.096⁺ (0.055)	0.044 (0.060)	0.086 (0.061)

Note: This figure displays standardized teacher NCEES results. '+', '*', and '**' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

Are Partnership East Teachers More Likely to Persist in Teaching?

Figure 6 displays teacher retention results for Partnership East teachers versus ECU comparison sample teachers from the same graduating cohorts. Specifically, we assess whether Partnership East teachers are more likely to return to any NCPS for a second and fifth year of teaching and whether Partnership East teachers are more likely to stay in their initial school district for a second and fifth year of teaching. Like our teacher performance analyses, these models control for teacher and school characteristics. Relative to ECU comparison teachers, results show that Partnership East teachers were three percentage points more likely to return for a second year of teaching in NCPS and nine percentage points more likely to return for a fifth year of teaching. Likewise, Partnership East graduates were seven and twenty percentage points more likely, respectively, to return to their initial school district for a second and fifth year of teaching.

Figure 6: Retention Results for Partnership East Teachers Compared to ECU Teachers



Note: This figure displays the retention results for Partnership East teachers versus ECU comparison teachers. '+', '*', and '**' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

Figure 7 presents retention results for Partnership East and all other teachers who began their teaching careers in the same schools (albeit not necessarily at the same time). These analyses indicate that Partnership East teachers were approximately seven percentage points more likely to return to NCPS for a second year of teaching and 20 percentage points more likely to return to NCPS for a fifth year of teaching. Considering district-level retention, Partnership East teachers were eight and 24 percentage points more likely to remain in their initial school district for a second and fifth year of teaching, respectively.

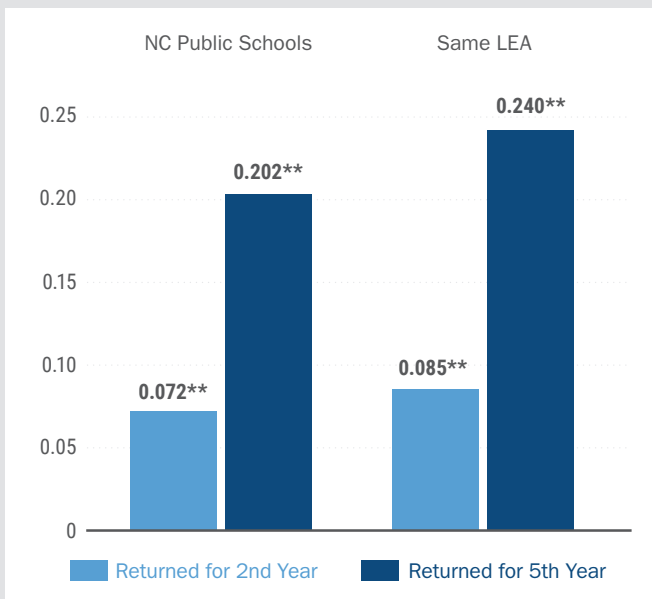
Lastly, results show that Partnership East graduates with prior teaching assistant experience were no more or less likely to return to NCPS or their initial school district than Partnership East teachers without teaching assistant experience.

Discussion

Teacher preparation initiatives like “grow your own” are one way for rural and high-poverty school districts/regions to address their teacher staffing concerns. Conceptually, such models may succeed because program completers already know the area in which they reside—e.g., the schools, families, and students—and may be more committed to staying there. In this research brief, we examined one type of “grow your own” model—a 2+2 program between local community colleges and ECU.

Overall, our results highlight the potential value of 2+2 partnerships as an effective “grow your own” strategy. Specifically, our study reveals three important takeaways. First, Partnership East graduates are serving their local regions. Of the Partnership East graduates who secured a teaching position in NCPS, 91 percent remained in their region of residence, and 70 percent remained in their counties of residence for their first teaching job. Through Partnership East, ECU is also extending its reach to parts of North Carolina where its traditionally-prepared graduates (non-Partnership East) are less likely to teach (i.e., the Southeast region). Second, once in the classroom, the performance of Partnership East teachers is generally comparable to that of other ECU graduates and other early-career teachers in the same schools. Partnership East teachers have lower EVAAS estimates than other ECU graduates in K-2 reading but higher evaluation ratings for the Classroom Environment (both comparison groups) and the Leadership (ECU graduates only) standards. Within Partnership East, NCEES results indicate that former teaching assistants earn higher evaluation ratings. This suggests that greater exposure to K-12 classrooms may benefit early-career teacher performance. Finally, Partnership East graduates are much more likely to remain teaching in NCPS and their initial school districts than peers from both comparison groups. For hard-to-staff districts and regions, this indicates that “grow your own” programs may be an effective way to reduce teacher attrition.

Figure 7: Retention Results of Partnership East Teachers Compared to Other Early-Career Teachers Who Began in the Same Schools



Note: This figure displays the retention results for Partnership East teachers versus all other teachers who started their careers in the same schools. '+', '**', and '***' indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

For more research on this topic

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