



The North Carolina Teaching Fellows Program: A Comprehensive Evaluation

In this policy brief, we report on our comprehensive evaluation of the North Carolina Teaching Fellows program. Overall, we find that Teaching Fellows: (1) have significantly higher academic qualifications; (2) teach in schools and classrooms with greater concentrations of higher performing and lower poverty students; (3) produce larger increases in student test scores in all high school exams and in 3rd-8th grade mathematics exams; and (4) remain in North Carolina public schools longer than other teachers. This evidence suggests that:

1. *Competitive scholarships for teachers provided by the Teaching Fellows program have enhanced the human capital of the teacher workforce and improved student achievement in North Carolina.*
2. *The Teaching Fellows program may be able to expand its impact by increasing incentives for Fellows to teach in hard-to-staff school environments and by focusing enrichment activities on preparation experiences found to improve teachers' effectiveness in the classroom.*

Introduction

In response to expanded employment opportunities for women, a large number of teacher retirements, rising demand for reduced class sizes, and increased student populations, many states have enacted policies to increase the supply and quality of their teacher workforces. In North Carolina, for example, such initiatives include granting certification to teachers prepared in other states, reducing barriers to entry for alternatively prepared and Teach For America instructors, and providing competitive college scholarships for prospective teachers through the Teaching Fellows program. Currently, substantial research attention has been focused on the effectiveness of out-of-state prepared, alternative entry, and Teach For America teachers in North Carolina public schools (*see the Carolina Institute for Public Policy website, <http://www.publicpolicy.unc.edu> for these reports*). Prior to this study, however, little empirical evidence existed concerning the efficacy of the Teaching Fellows program. In this policy brief, we report the findings of an evaluation that examined the extent to which the North Carolina Teaching Fellows program has increased

the human capital of the teacher workforce, expanded access to highly qualified teachers for at-risk students, improved student achievement, and reduced teacher turnover.

Background

Since 1986, the North Carolina Teaching Fellows program has recruited academically competitive in-state high school seniors and provided competitive college scholarships for these prospective teachers to attend in-state public or private universities, earn degrees in education, and teach in the state's public schools. Annually, the North Carolina General Assembly has funded a new cohort of five hundred Teaching Fellows with college scholarships of \$6,500 per year for up to four years, with the recipients repaying the scholarships through four years of teaching service in North Carolina public schools. In addition to receiving the same training as other teacher candidates at in-state public and private universities, Teaching Fellows participate in unique enrichment experiences, such as intensive field experiences, seminars, and cultural events exclusive to the program. The

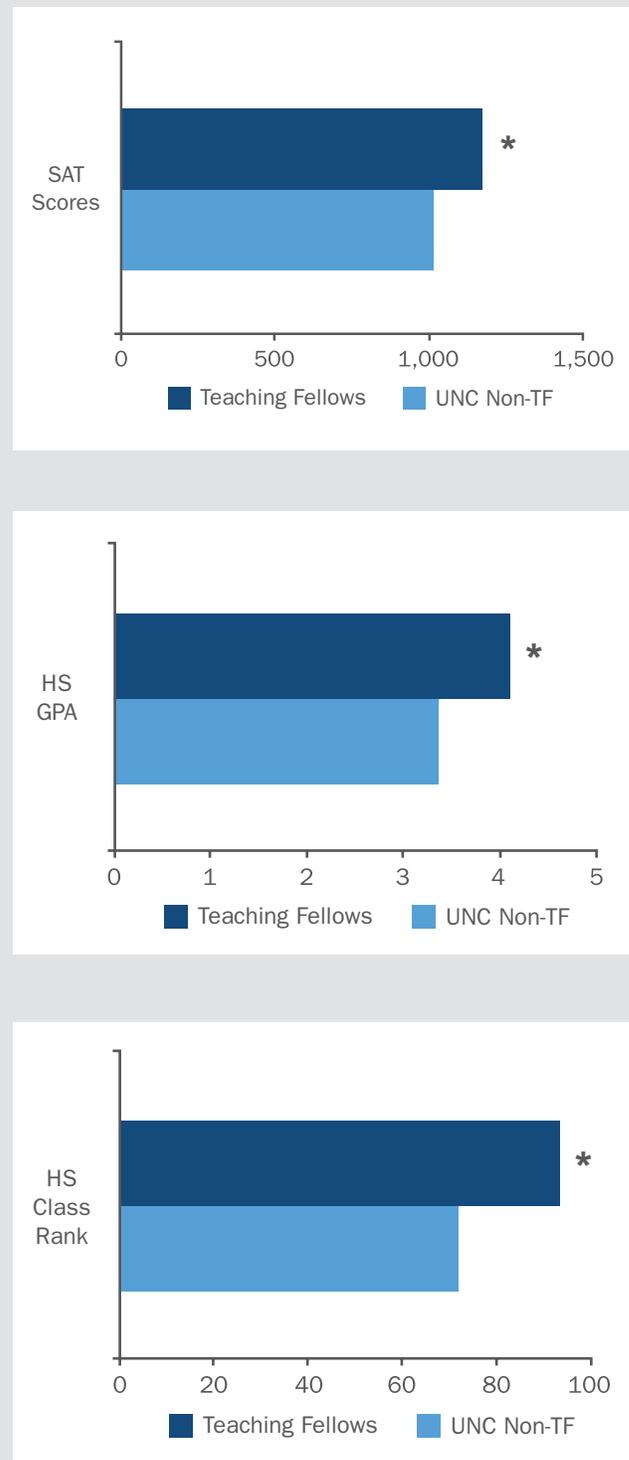
Teaching Fellows program is administered by The Public School Forum of North Carolina, a private, not-for-profit policy group. In 2011, the North Carolina General Assembly restricted funding for the Teaching Fellows program to students who first began receiving scholarships in 2011-12; no new scholarships will be offered at this time.

To evaluate the Teaching Fellows program, our study assesses the academic qualifications of Teaching Fellows, the types of schools and classrooms in which they teach, their effectiveness in the classroom, and their persistence as classroom teachers in North Carolina public schools. The study sample includes all North Carolina public school teachers with fewer than five years of teaching experience who taught between 2005-06 and 2009-10. Using data provided by the North Carolina Department of Public Instruction, the University of North Carolina General Administration, Teach For America, and The Public School Forum of North Carolina, we created a dataset that matches teachers to their students, allowing us to link test scores and other student characteristics with teacher, classroom, and school variables. To evaluate Teaching Fellows on the four outcomes listed above, we organized the most comprehensive sample of teachers for whom data could be assembled, selected key variables, and conducted rigorous analyses to answer the four questions below (see Henry, Bastian, and Smith, 2012, for more information on our research sample and methods).

1. What are the academic credentials of Teaching Fellows?

To examine the academic credentials of Teaching Fellows scholarship recipients, we compared the SAT scores, high school grade point averages (GPAs), and high school percentile class ranks of Teaching Fellows prepared at UNC institutions to those of other traditionally prepared UNC system teachers. Figure 1 shows that Teaching Fellows scholarship recipients demonstrated significantly higher levels of academic achievement prior to enrolling in college than their peers who were entering UNC institutions' teacher education programs. For example, high school teachers who received the Teaching Fellows scholarship averaged SAT scores of 1,186, which is 113 points higher than their UNC prepared counterparts. In elementary and middle grades the SAT gap was even larger—167 and 146 points, respectively. Overall, the Teaching Fellows program clearly attracted academically competitive individuals into teacher education programs and the teaching profession, as Teaching Fellows posted average SAT scores of 1,169, average high school GPAs of 4.11, and rankings equal to or above 93.31% of their high school graduating classes.

Figure 1: Who is recruited?



NOTE: These figures display descriptive information for Teaching Fellows prepared at UNC institutions and other traditionally prepared teachers at UNC institutions. Asterisks at the end of a horizontal Teaching Fellows bar indicate that the Teaching Fellows' values are significantly different than the UNC Non-Teaching Fellows' values.

Table 1: Where do they teach?

Teacher Category	Prior Classroom Average Test Score	School Performance Composite	Classroom Free-Reduced Price Lunch Percentage	School Free-Reduced Price Lunch Percentage	Average Teacher Supplement
Teaching Fellows	-0.091	66.09%	39.61%	47.45%	\$3264
In-State Prepared	-0.167*	62.61%*	42.33%*	52.25%*	\$3120*
Out-of-State Prepared	-0.178*	60.79%*	43.06%*	52.38%*	\$3638*
Alternative Entry	-0.372*	56.80%*	45.43%*	54.38%*	\$3069*
Teach For America	-0.574*	51.26%*	64.89%*	72.23%*	\$4105*
Visiting International Faculty	-0.397*	53.59%*	47.98%*	64.65%*	\$3360

NOTE: This table displays descriptive information for first-year tested-subject teachers. Asterisks indicate that the Teaching Fellows' values are significantly different at the $p < 0.05$ level than the values for the other teacher preparation categories.

2. What are the characteristics of the classrooms and schools in which Teaching Fellows work?

Prior research indicates that students in low performing, high poverty schools are less likely to have higher quality teachers, and that these schools often have difficulty hiring enough teachers. Therefore, it is important to know the types of classrooms and schools in which Teaching Fellows teach.

Examining Table 1, it is clear that Teaching Fellows are initially hired into schools and assigned to classrooms with more high-achieving students. In 5 out of 5 comparisons, Teaching Fellows teach both in schools with significantly higher percentages of students passing state tests and in classrooms with significantly higher performing students. Furthermore, Teaching Fellows also teach in schools and classrooms with fewer economically disadvantaged students. In 5 out of 5 comparisons, Teaching Fellows work in schools and classrooms with significantly smaller percentages of students qualifying for free or reduced price lunches. Finally, Teaching Fellows work in school districts with significantly larger teacher salary supplements than in-state prepared and alternative entry teachers, but significantly smaller supplements than out-of-state prepared and Teach For America teachers.

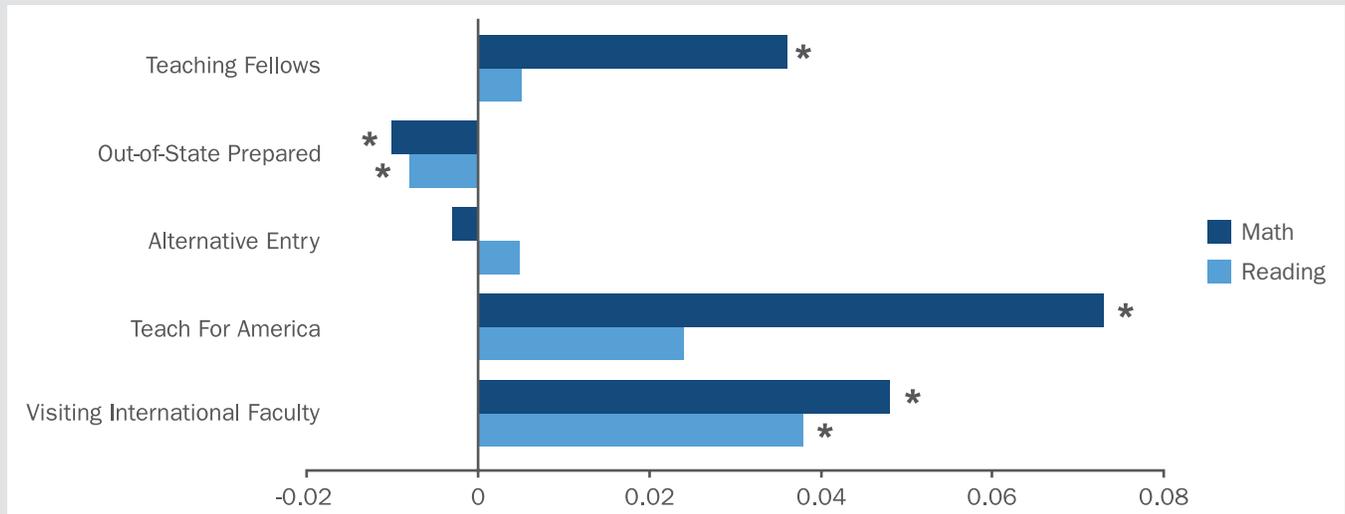
3. How effective are Teaching Fellows?

To assess effectiveness in the classroom, we focused on teachers with less than five years experience and used value-added models that allowed us to compare the test

score gains of students taught by Teaching Fellows to the gains posted by other teachers. We relied primarily on a multi-level model, with controls for student, classroom, and school characteristics, to examine the effectiveness of Teaching Fellows relative to those teachers who were prepared in-state, as well as Teach For America corps members, Visiting International Faculty, teachers prepared in other states (out-of-state), and alternative entry teachers. Figures 2a-c display our findings at the elementary, middle, and high school levels. We also implemented models to compare Teaching Fellows with other teachers in the same schools and, separately, to compare them with other teachers who graduated from the same colleges and universities. All results, except where noted, were similar, thus increasing confidence in our findings.

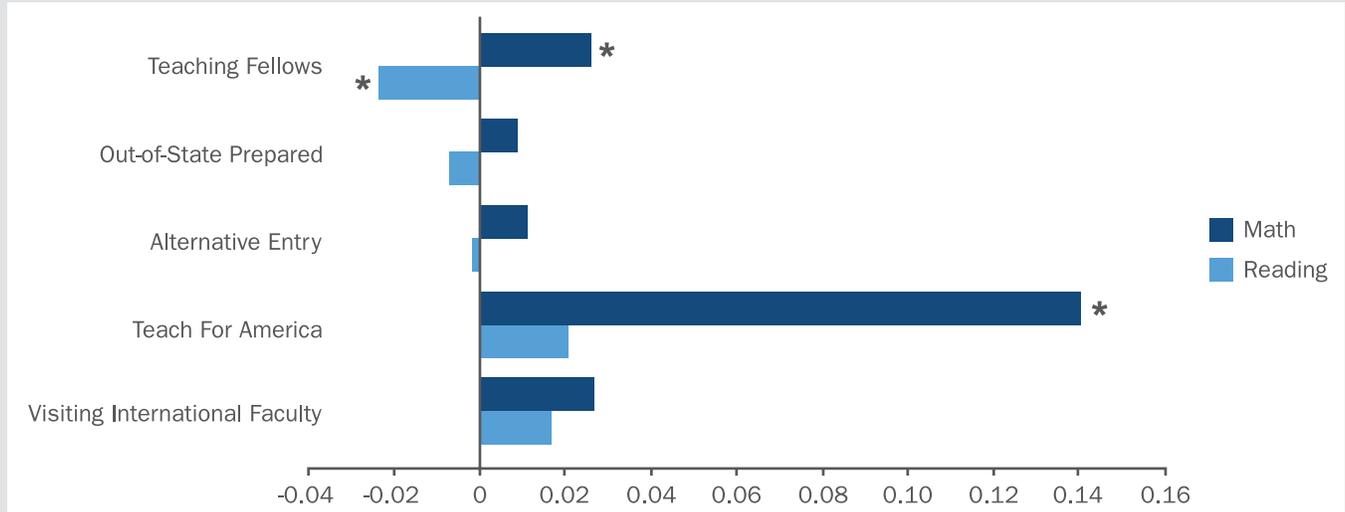
Students taught by Teaching Fellows post significantly higher test score gains in elementary and middle grades mathematics and across all high school exams than students taught by other teachers prepared in the colleges and universities of North Carolina. For example, in elementary and middle grades math, Teaching Fellows add approximately 9 and 14 days of student learning to the 180 day school calendar. Teaching Fellows also significantly outperform out-of-state prepared and alternative entry teachers in elementary math, middle grades math, and high school, and Visiting International Faculty teachers in high school. Teaching Fellows are significantly less effective than other in-state prepared teachers in raising their students' middle grades reading test scores, effectively reducing the amount that their students learned by approximately 12 days of schooling. However, they are not significantly less effective when compared to teachers who graduated from the same universities, which may indicate an issue with the preparation that the teacher candidates received to teach middle grades reading and language arts.

Figure 2a: How effective are they in elementary grades?



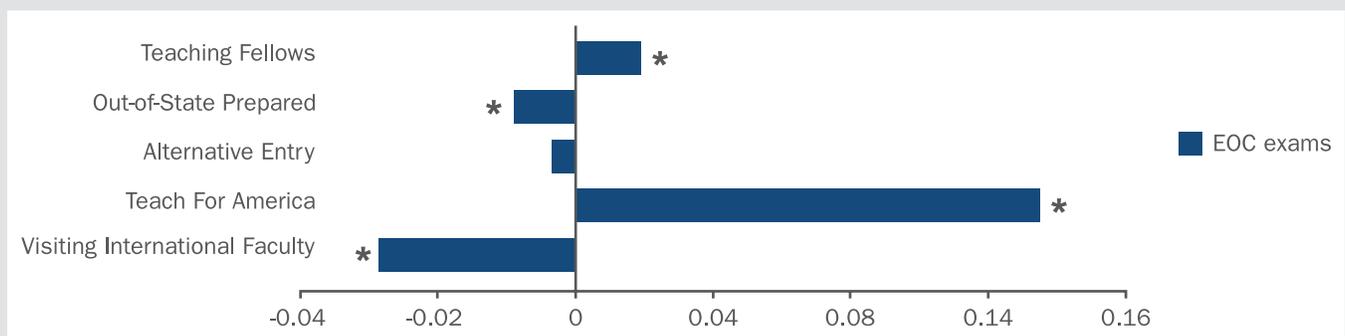
NOTE: This figure illustrates the effectiveness of Teaching Fellows, out-of-state prepared, alternative entry, Teach For America, and Visiting International Faculty teachers in reference to in-state prepared teachers. An * at the end of a horizontal bar indicates statistically significant differences at the $p < 0.05$ level.

Figure 2b: How effective are they in middle grades?



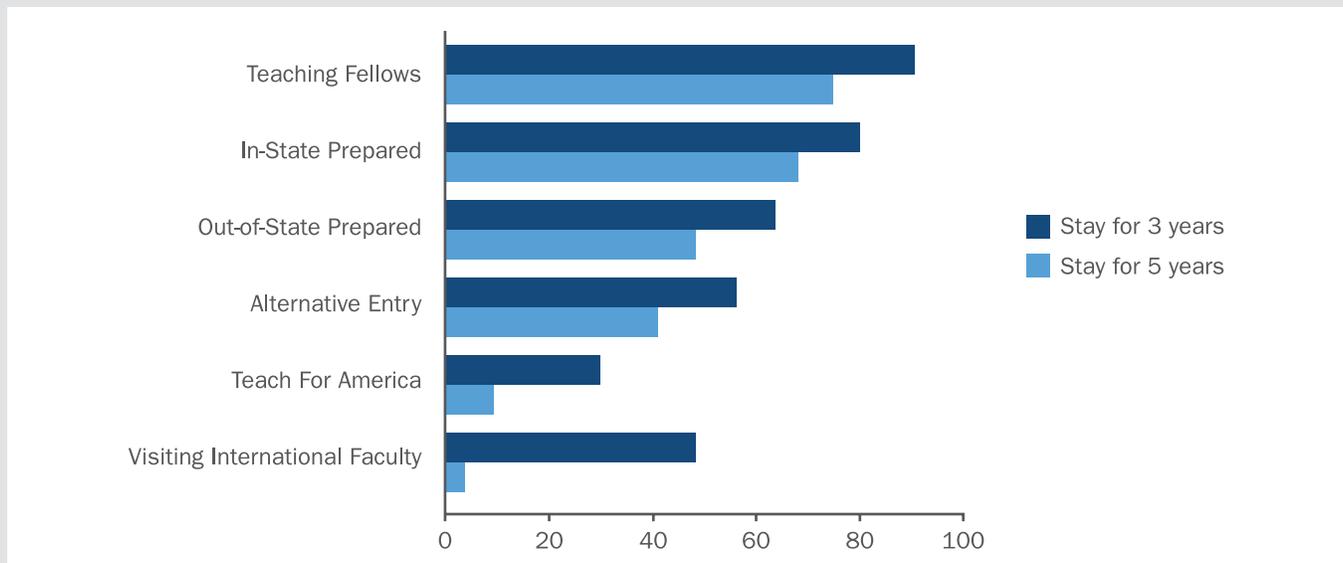
NOTE: This figure illustrates the effectiveness of Teaching Fellows, out-of-state prepared, alternative entry, Teach For America, and Visiting International Faculty teachers in reference to in-state prepared teachers. An * at the end of a horizontal bar indicates statistically significant differences at the $p < 0.05$ level.

Figure 2c: How effective are they in high school?



NOTE: This figure illustrates the effectiveness of Teaching Fellows, out-of-state prepared, alternative entry, Teach For America, and Visiting International Faculty teachers in reference to in-state prepared teachers. An * at the end of a horizontal bar indicates statistically significant differences at the $p < 0.05$ level.

Figure 3: How long do they stay?



NOTE: This figure depicts the percentage of teachers who return for a 3rd and 5th year of teaching in North Carolina public schools for three cohorts of 1st year teachers, regardless of subject taught, from 2004-05, 2005-06 and 2006-07.

4. How long do Teaching Fellows remain in North Carolina public schools?

To examine whether Teaching Fellows persist as public school teachers in North Carolina for a longer period than is required to fulfill the obligations of the scholarship (Fellows’ options are teaching four years or repaying the scholarship loans with 10% interest), we longitudinally tracked three cohorts of beginning teachers to determine whether the scholarship recipients persisted into a fifth year of teaching. Examining Figure 3, it is clear that Teaching Fellows are much more likely to remain in North Carolina public schools than other teachers. Over ninety percent of Teaching Fellows returned for a third year of teaching, with seventy-five percent continuing into a fifth year. These percentages are higher than those for in-state prepared teachers (eighty and sixty-eight percent, respectively) and substantially higher than those for all other teacher groups.

Discussion

To summarize, we found that: (1) the competitive scholarships provided through the Teaching Fellows program attract individuals with significantly higher academic credentials into North Carolina public schools; (2) Teaching Fellows teach in schools and classrooms with greater concentrations of both higher-achieving and lower-poverty students; (3) students of Teaching Fellows

have significantly larger test score gains in elementary school math, middle grades math, and high school than the students of in-state prepared, out-of-state prepared, and alternative entry teachers, but the middle grades students taught by other teachers have larger test score gains in reading than students taught by Teaching Fellows; and (4) Teaching Fellows remained teaching in public schools at significantly higher rates than other teachers.

Clearly, Teaching Fellows are effective and persistent teachers. Based upon a comparison of Teaching Fellows to other teachers with similar academic qualifications who graduated from the same universities’ teacher preparation programs, it appears that the academic skills and abilities of Teaching Fellows are responsible for these differences. Our analysis does not show that the current, unique enrichment opportunities provided by the Teaching Fellows program contribute to the effectiveness or persistence of Teaching Fellows.

Our evidence leads us to two conclusions:

- (1) Competitive scholarships for teachers provided by the Teaching Fellows program enhanced the human capital and persistence of the teacher workforce and improved student achievement.

Providing scholarships of \$6,500 per prospective teacher, per year, for four years, has paid dividends to the public schools in North Carolina through stabilizing the educator workforce and improving students’ outcomes.

(2) The Teaching Fellows program may be able to improve its impact by increasing incentives for the Fellows to teach in hard-to-staff school environments and by reforming enrichment activities to concentrate on preparation experiences that could improve the Teaching Fellows effectiveness in the classroom.

Policymakers and program administrations should consider changes to the program to encourage more Teaching Fellows to serve in high-poverty and low-achieving schools. Instead of requiring Teaching Fellows to work in these environments, which could deter some highly qualified applicants, a better approach might be to offer additional financial incentives or a faster scholarship pay-off rate (for example, 1.33 years credit for each year of teaching in a designated “high-need” school). The unique enrichment activities provided by the Teaching Fellows programs at each institution should also be carefully scrutinized to focus on activities that have been identified through research as improving teachers’ effectiveness.

Overall, our evidence demonstrates that the North Carolina Teaching Fellows program has positively affected North Carolina’s schools and students, and underscores the importance of attracting more teachers with top academic qualifications into the state’s teacher workforce. The North Carolina Teaching Fellows program should be comprehensively evaluated every four years, with future studies addressing each of the questions posed above and

examining the extent to which the Teaching Fellows program has (1) increased the supply of teachers with high academic qualifications and (2) prepared effective school leaders for North Carolina’s public schools.

For more research on this topic

Corcoran, S. (2009). Human capital policy and the quality of the teacher workforce. In D. Goldhaber and J. Hannaway (Ed.), *Creating a New Teaching Profession* (pp. 29-52). Washington, D.C.: Urban Institute Press.

Henry, G.T., Bastian, K.C., & Smith, A.A (2012). Scholarships to recruit the “best and brightest” into teaching: Who is recruited, where do they teach, how effective are they, and how long do they stay? In press, *Educational Researcher*.

Hirsch, E., Koppich, J., & Knapp, M. (2011). *Revisiting what states are doing to improve the quality of teaching: An update on patterns and trends* (Working Paper W-01-1). Seattle, WA: Center for the Study of Teaching and Policy, University of Washington.

National Research Council. (2010). *Preparing teachers: Building evidence for sound policy*. Washington, D.C.: National Academies Press.

The Public School Forum of North Carolina, North Carolina Teaching Fellows Program. Retrieved from <http://www.teachingfellows.org/>

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The Education Policy Initiative at Carolina is a policy research and outreach unit affiliated with the Department of Public Policy and housed in the College and Arts and Sciences at the University of North Carolina at Chapel Hill.



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