

# The Effect of Teaching in Underserved Schools on Beliefs About Education Inequality and Reform: Evidence from Teach For America

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January 26, 2021

## Abstract

What effect does direct experience in low-income schools have on education policy opinions and beliefs? We consider the case of Teach For America (TFA), a prominent alternative teacher preparation provider with an admissions process that generates quasi-random variation in applicants' likelihood of matriculation. We leverage this variation using a regression discontinuity design, and collect outcome data by surveying over 32,000 TFA applicants regarding education inequality and reform. We find that teaching in underserved schools causes individuals to reject the presupposition that the behaviors and values of low-income students and their families perpetuate income-based differences in academic performance. Rather, participation cultivates a belief that widespread social injustices contribute to disparities in educational opportunities. When evaluating education reform strategies to address these disparities, we find that the experience as an educator in a low-income school causes no change in support, and at times, less support for politically-charged policy levers in the United States as effective tools to affect desirable change. Instead, low-income classroom experience engenders more support for simple investments that expand access and services for low-income children, as well as efforts to elevate the prestige of the teaching profession. Moreover, experience in the classroom cultivates more steadfast beliefs that income-based disparities in educational opportunities can be resolved.

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How does teaching in low-income schools affect beliefs regarding the determinants of income-based differences in academic performance and the education reform strategies best-suited to address such disparities? What types of policy preferences emerge from experiences as a “street-level bureaucrat” of the education system in low-income communities? Educators directly interface with students and their families, hold firsthand knowledge about the challenges schools face, and play a critical role in interpreting and implementing policy in their classrooms (Weatherley and Lipsky, 1977; Lipsky 1983). As “frontline” professionals, teachers have deep exposure to the effects of education policy in practice. They can also exercise some discretion in how they allocate their efforts and resources to address the inequalities that they see, and can influence how education policies are put into practice (Bridwell-Mitchell 2015; Honig 2006; Weatherley and Lipsky 1977). As such, understanding the beliefs and policy opinions that arise from teaching is informative for debates regarding promising levers to improve education outcomes in the United States. And understanding the beliefs and policy opinions that emerge from teaching in disadvantaged communities in the United States is particular are critical to the national conversation regarding education inequality and reform to reduce disparities in education outcomes.

Previous public opinion research suggests there are large cleavages in education policy views between teachers and the general public that are not well-explained by individuals’ level of education, socioeconomic status, political affiliation, race, or gender (Peterson, Henderson, and West 2014). These cleavages are, in fact, wider than other divisions, such as those between Democrats and Republicans, and between parents of school-age children and other adults. Though these results are consistent with the possibility that teaching causes differences in education policy opinions to emerge, prior work has not yet addressed whether the observed differences in education policy opinions between teachers and non-teachers stem from differences in the types of individuals who choose to teach. We address this lacuna in the literature, and to our knowledge, contribute the first causal estimates of the effect of teaching in schools serving in disadvantaged communities in the United States on individuals’ understanding of education inequality and reform.

The ideal research design to answer these questions would involve the random assignment of groups of similar individuals to teach in low-income schools, teach in high-income schools, or not to teach at all, and then comparing these individuals’ views on education after a fixed period of time. Such a design is neither politically tractable nor socially desirable. However, we can

approximate that ideal by exploiting exogenous variation in who participates in Teach For America (TFA). TFA is a large and prominent alternative teacher preparation program (TPP), supplying thousands of teachers to some of the nation’s lowest performing schools each year. The TFA alumni network exceeds 60,000, and in 2015 alone, TFA prepared 4,076 new teachers to teach in low-income schools.<sup>1</sup> As such, TFA participants collectively hold abundant experience working as educators in underserved communities, and are likely privy to firsthand, institutional knowledge on why schools in low-income communities persistently underperform, despite decades of targeted reform efforts.

To identify the causal effect of teaching experience in low-income schools on beliefs regarding educational inequality and reform, we leverage the fact that the probability an individual is admitted to TFA is a discontinuous function of an applicant’s admission score. We exploit this discontinuity to estimate the causal effect of TFA participation on individuals’ education policy views. Namely, we estimate the treatment effect of TFA participation by dividing the jump in the relationship between our outcomes of interest and the probability of TFA admission at the cutoff by the fraction induced to take-up the treatment (and participate in TFA) because they scored above the cutoff. Our identifying assumption is that the education views of those who just barely missed the threshold for admission serve as a reasonable counterfactual for what the education views of TFA participants would have been had they not participated in TFA.

We find that, *ceteris paribus*, those who participate in TFA are less likely to believe that low-income students (or their families) are themselves responsible for income-based differences in educational achievement than the non-admit comparison group. Rather, participating in TFA increases an individual’s belief that widespread societal inequities perpetuate income-based achievement gaps. When evaluating a number of education reform strategies, relative to non-participants, TFA participants are no more likely, and at times *less* likely, to believe that market-based reform strategies like school choice policies and instituting a teacher merit pay system (Ladd 2002) can effectively reduce these inequities. Similarly, we find no effect of TFA participation on other politically charged policy levers such as instituting the Common Core standards and the strengthening of teachers unions. Instead, TFA participation increases faith in teachers’ potential to foster student learning and support for investments in early childhood education and wraparound services

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<sup>1</sup>This number was provided to the authors by Teach For America.

for low-income children, such as counseling and nutrition. And in the face of increased beliefs that there are large systemic issues engendering education inequality, participants nevertheless express more optimism that the achievement gap between children in low-income and high-income areas is a solvable problem. Notably, all of these results hold when we estimate the “reduced form” effect of an offer to TFA, also called the regression discontinuity intention-to-treat (RD-ITT) effect, which is a more conservative empirical strategy requiring fewer modeling assumptions. These unscaled RD-ITT effects, which are simply the estimated difference in the outcome between individuals just above and just below the admission threshold, affirm a causal relationship between our instrument, the TFA admissions cutoff, and our outcomes of interest, individuals’ education policy views.

In our main analyses, we present evidence consistent with the assumption that individuals’ beliefs around educational disparities and reform change as a function of their participation in TFA. That said, one key limitation of this study is that we cannot neatly disentangle the effects of individual elements of the bundled TFA experience. For instance, one possibility is that TFA participants’ views change because of the training they receive from TFA. Another possibility is that TFA participants’ views change because of their experiences teaching in low-income schools. We conduct a number of tests leveraging the fact that our sample contains non-TFA teachers, as well as the fact that a subset of our sample received TFA training, but had very little time in the classroom to show that our effects are most likely driven by teaching experience and not simply TFA training. With that said, even in the unlikely case where there are issues with external validity, and the effect of TFA participation are truly distinct from the effect of teaching in underserved communities, we contend that there is still significant value in this research enterprise given the reach and scale of TFA. In other words, there is much value in understanding the effect of TFA participation in and of itself. In the next section, we provide a deeper discussion of TFA and document the significance of TFA as a player in the education reform space.

## **THE CASE OF TEACH FOR AMERICA**

### **A. TFA’s Reach**

TFA’s organizational mission is to increase educational equity. Towards this end, TFA seeks to recruit talented individuals to teach for at least two years in traditionally underperforming schools,

to develop these individuals into future leaders committed to making educational equity a reality, and to nurture a critical mass of alumni with a lifelong commitment to promoting educational equity. Since its inception in 1989, over half a million individuals have responded to TFA’s call to action, and applied to become a teacher through TFA. Today, TFA is one of the nation’s most prominent alternative preparation programs. Altogether, over 60,000 current and former teachers have participated in TFA, and more than ten million American schoolchildren living in low-income communities have been taught by a TFA teacher.<sup>2</sup>

Interestingly, two recent qualitative, interview-based studies examined the education policy beliefs of TFA participants and produced contradictory insights. Trujillo, Scott, and Rivera (2017) find that TFA alumni “become acculturated within a largely market-oriented network of policy entrepreneurs” and tend to express “overwhelming support for incentivist reforms such as turnaround-driven mass layoffs, charter school expansions, merit pay, and school closures” (p. 386). However, Reddy (2016) finds that while TFA itself may be perceived to support market-oriented, neoliberal approaches to education reform due to some visible alumni, TFA participants themselves hold very mixed and nuanced views on certain politically-charged strategies (e.g., charter schools, school choice, and teacher evaluation and accountability). One potential reason the results of these studies diverge may be that both relied on small, non-representative samples ( $n=117$  alumni and  $n=45$  alumni, respectively). Our study expands upon this body of work as the first large- $N$  causal analysis addressing the question of how experience in the classroom through TFA or any other pathway impacts education policy beliefs.

Finally, descriptive evidence suggests that some of TFA’s participants chose to pursue careers in which they are well-positioned to influence education policy. 15,000 of TFA’s alumni have opted to remain street-level bureaucrats of the education system, and become career teachers. Others have chosen alternative pathways to improving education in the United States, becoming school leaders ( $N = 1,350$ ), education policy/consulting/advocacy workers ( $N = 930$ ), school system leaders ( $N = 570$ ), union leaders ( $N = 270$ ), and elected officials ( $N = 270$ ). Moreover, TFA alumni in Iowa, Louisiana, Massachusetts, North Carolina, Tennessee, and Washington D.C. currently hold or have held the most prominent education policy positions in their states as commissioners and

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<sup>2</sup>Source: <https://www.teachforamerica.org/what-we-do> (accessed July 21, 2019).

superintendents.<sup>3</sup> Given the reach of TFA’s alumni in the education reform landscape, as well as TFA’s imprint as one of the largest alternative teacher preparation programs in the country, and one of the largest teacher preparation program for teachers entering low income schools, understanding the causal effect of teaching in underserved communities through TFA specifically is valuable. In other words, external validity concerns, which is the Achilles heel of experiments and quasi-experiments (Morton and Williams 2008), do not diminish the import of this empirical exercise.

## **B. The TFA Treatment**

The hallmark feature of the TFA program is the requirement that individuals teach for two years in schools serving underserved student populations.<sup>4</sup> In the average TFA placement school, 80 percent of students are eligible for free or reduced-price lunch and 90 percent of students identify as racial or ethnic minorities.<sup>5</sup> TFA places teachers all over the country, in both rural regions (e.g., Appalachia and the Mississippi Delta) and urban centers (e.g., Detroit and Miami). Roughly one-third of TFA teachers work in public charter schools, while the remaining two-thirds work in traditional public schools.<sup>6</sup>

A secondary feature of the TFA program is that individuals are required to participate in an accelerated teacher preparation program. Training formally commences the summer before an individual begins teaching and continues for the duration of the two-year program. TFA teachers teach summer school under the tutelage of full-time teachers, local community partners, and TFA staff. They also receive instruction from TFA staff members and from instructors at local higher education institutions with expertise in teacher preparation. Some training is consistent across all TFA participants (e.g., culturally responsive pedagogy, family engagement, classroom management), whereas other training is tailored to the teachers’ specific teaching placement (e.g., math, special education, elementary). Each TFA teacher also receives personalized one-on-one instructional coaching from a TFA staff member and attends mandatory small-group and cohort-wide

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<sup>3</sup>Information on TFA alumni was provided to the authors by TFA on August 23, 2019.

<sup>4</sup>See information on TFA’s placement regions (Source: <https://www.teachforamerica.org/where-we-work> (accessed May 30, 2019)).

<sup>5</sup>Source: Teach For America School and Student Demographics 2014-2015.

<sup>6</sup>Source: <https://www.teachforamerica.org/stories/engaging-with-critiques-of-teach-for-america> (accessed July 21, 2019).

training sessions throughout each school year.<sup>7</sup>

There are additional features of the TFA program that are more likely to differ across individuals. For instance, for some TFA teachers, the “TFA treatment” might include relocating across the country, whereas other TFA teachers may teach in their hometown or near where they attended college. Similarly, depending on their placement, some TFA teachers may experience a “shock” to their social network, perhaps acquiring a more diverse friendship group, whereas others may not.

While there may be some truly unique elements of the TFA experience, TFA is quite similar to the characteristics of many other alternative teacher preparation programs. These alternative teacher preparation providers have risen in popularity as states have aimed to reduce barriers that prevent talented individuals from taking up teaching positions (Woods, 2016). Of the 26,000 teacher preparation programs in the United States, 30 percent are considered “alternative” (Congressional Research Office, 2018). Prominent examples include TNTP (formerly The New Teacher Project); teacher residency programs specific to urban centers including Baltimore, Boston, Chicago, Denver, Los Angeles, Memphis, New York City, San Francisco, and Seattle; charter teacher residency programs such as INSPIRE and Yes Prep; and university-based residency programs such as those offered at the Relay Graduate School of Education, Teachers College, and the Harvard Graduate School of Education. While annual enrollment for each of these programs are not publicly available, back of the envelope calculations suggest there are collectively at least as many alumni of these TFA-like programs as there are alumni of TFA, if not more (TNTP alone boasts 37,000 participants). Similar to TFA, many of these alternative programs are selective, place teachers in high poverty schools, provide ongoing training and support to participants, and maintain a strong social justice mission.

## RESEARCH DESIGN

### Sample

Over 380,000 individuals applied to TFA between 2007 and 2015. We restricted our sample to unique individuals with valid email addresses who advanced to the final stage of the TFA admissions process (the Online Appendix provides additional details on the selection process and

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<sup>7</sup>Source: <https://www.teachforamerica.org/life-in-the-corps/corps-member-training> (accessed July 21, 2019).

the admissions score). 120,417 applicants satisfied all three of our inclusion criteria, and invited each of these individuals to take our survey, which was open from October 1, 2015 to March 31, 2016.<sup>8</sup> We focus on the 2007 through 2013 cohorts for our main analyses, as individuals who applied in 2014 or 2015 would have had minimal time in the classroom, and would not have received the full two-year TFA treatment at the time of the survey.

Over a quarter of those who applied during the 2007 through 2013 cycles—27 percent (n=24,938; AAPOR RR2) of the sample—started the survey and 21 percent (n=19,332; AAPOR RR1) completed the survey in its entirety. We were targeting all TFA applicants, and achieved a response rate that is higher than that of other recent high quality studies relying on online surveys of targeted samples (e.g., Broockman, Ferenstein, & Malhotra, 2019; Barber 2016; Robbins, Grimm, & Stecher, 2018; Shih & Fao 2008). Moreover, our response rate is notably higher than the response rates for Pew Research Center polls that are regularly cited as representative of the views and experiences of Americans, which typically range from 5 percent to 15 percent, and achieve only a 22 percent response rate for their high-effort surveys that employ a range of known techniques to obtain higher response rates (Pew Research Center 2012).<sup>9</sup>

With that said, we assessed whether our respondents were representative of the universe of TFA applicants. Panel A of Table 1 summarizes demographic characteristics of respondents. The average participant in our survey is 29 years old. A minority of the sample received a Pell Grant in college (31 percent). Approximately 70 percent of the study sample are female (72 percent) and white (70 percent); over half of the participants identify with a religion (58 percent); and nearly half of the study participants are upper class or upper middle class Americans (49 percent). Our sample of survey respondents is generally representative of the overall TFA applicant population that advanced to the final stage of the application process on each of the demographic characteristics in the application file, apart from race. Our sample skews somewhat more white; however, the skew

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<sup>8</sup>The original file of all applicants who advanced to the final stage of the TFA admissions process contained 134,808 observations. 5,463 applicants with contact restrictions, 7,221 applicants with invalid email addresses, and 1,568 duplicate cases (duplicate cases were generated as there were applicants who applied to TFA multiple times) were removed. To ensure applicants who applied more than once would only be contacted once, we preserved contact information for only the most recent application year. The remaining 139 applicants were removed when checking for duplicate errors. We utilized the application file only, and did not update the contact information for alumni to ensure that the share of contact information errors in our file would be the same for admits and non-admits.

<sup>9</sup>See the Pew Research Center’s details on their survey methodology for additional information: <https://www.pewresearch.org/methods/u-s-survey-research/our-survey-methodology-in-detail/> (accessed March 31, 2020).



is, importantly, similar for both admitted and non-admitted individuals.<sup>10</sup>

For our main analyses, we exclude those who applied in 2008 because we were unable to confirm that the admission score cutoff rule was applied consistently for this cohort (see Appendix Figure D.7). However, as we will show, our main results are generally not sensitive to the inclusion or exclusion of the 2008 cohort. Aside from the exclusion criteria detailed above, we include all other TFA applicants in our main analyses. For instance, all TFA participants are included irrespective of whether or not they completed their two-year commitment.<sup>11</sup>

## Data

TFA administrative data from the selection process was linked to applicants' responses to an original online survey. The TFA administrative admissions data included contact details, demographic information, and selection scores for all applicants. Those contact details were used to find our target population for the online survey. We re-centered selection scores such that 0 represents the threshold for admission. Then, to account for the fact that the raw selection score scale varied across years, we standardized selection scores by year.<sup>12</sup>

All of our outcome measures of interest were drawn from responses to our online survey. Survey items covered three broad constructs: inequality in education, education reform, and teacher optimism and potential. In particular, we asked individuals to (i) share their beliefs on why income-based academic achievement gaps exist and persist; (ii) assess the promise of a range of politically-charged educational initiatives (e.g. the expansion of charter schools, school vouchers,

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<sup>10</sup>To assess how well our survey sample represents the universe of TFA applicants, we used TFA admissions data to compare the demographic characteristics of our survey respondents to both the full sample of TFA alumni and non-admits separately. Compared to all TFA alumni, the average TFA alumni survey respondent was 0.09 years younger, 1.9 percentage points more likely to be female, 7.3 percentage points more likely to be white, and 2.4 percentage points less likely to have received a Pell Grant. We also observed that the average selection score for all TFA alumni was 0.017 standard deviations lower than that of the average TFA alumni survey respondent. On average, our non-admit sample was 0.67 years younger, 2.1 percentage points more likely to be female, 7.9 percentage points more likely to be white, 2.1 percentage points less likely to have received a Pell Grant, and received a selection score that was 0.027 standard deviations higher than the full population of non-admits. Thus, our survey respondents skew slightly more white, young, female, and upper income (e.g., not a recipient of the Pell Grant) than the typical TFA applicant. However, the skew is similar for both our sample of admitted and non-admitted individuals, and as such, a non-issue for internal validity.

<sup>11</sup>Over the time period of this study, TFA retained approximately 85% of matriculants for the full two years. We do not omit individuals who leave TFA early from any of our analyses, as this would bias our reduced form RD-ITT estimates.

<sup>12</sup>All of the models we use include application cohort fixed effects to account for any observed or unobserved differences in application cycles across years.

early childhood education, standardized testing, and teachers’ unions) and (iii) share their views on the extent to which we could reasonably expect teachers to help students under challenging circumstances and whether it is possible to address the educational opportunity gap. The exact question wording and response option coding rules are provided in Online Appendix E. We abbreviate some item language in tables and figures.

Table 1 Panel B provides summary statistics for each of these outcome measures for all survey respondents, and separately displays average responses for TFA participants and non-participants in our sample. All survey items were presented to respondents using a five point scale, which were then re-coded for analyses to range from 0 to 1.<sup>13</sup>

## Identification Strategy

A “fuzzy” regression discontinuity design (RDD) was employed to estimate the causal effect of TFA participation on the education inequality beliefs and education policy preferences of applicants. As noted above, each applicant who advanced to the final round of the TFA admission process received a selection score,  $X_i$ . As we show in Figure 1a, the probability an individual participates in TFA is a discontinuous function of that selection score. Specifically, individuals who score just above TFA’s admission cutoff,  $c$ , are 30 percentage points more likely to become TFA teachers than those who just barely miss the threshold for admission ( $F = 238$ ).

We assume that in the absence of TFA, the education policy views of individuals who scored just on either side of the admissions score cutoff would have been the same on average, and use the TFA cutoff as an instrument to isolate plausibly random variation in an individual’s TFA participation status. We define our instrument,  $Z_i$ , as follows:

$$Z_i = \begin{cases} 1, & \text{if } X_i \geq c \\ 0, & \text{if } X_i < c. \end{cases} \quad (1)$$

However, as noted previously, while scoring above the threshold significantly increases an applicant’s chance of admission, some applicants who score below the cutoff are still admitted. As highlighted above, this is a direct consequence of TFA’s admission policy, which is designed some-

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<sup>13</sup>Our main results are not sensitive to this coding scheme; we also dichotomize each outcome and present these results in Online Appendix Table D.3.

what flexibly to allow for the fact that not all applicant characteristics can be adequately captured by a rubric. This motivates our use of a “fuzzy,” rather than sharp regression discontinuity approach.

Operationally, because the instrument does not perfectly predict TFA participation, we scale up the observed change in outcome,  $Y$ , at the admissions cutoff (the reduced form estimate) by the fraction of individuals induced to take-up the treatment because they scored above the cutoff (the first-stage estimate). Our treatment effect estimate,  $\tau_{2SLS}$ , for outcome  $Y$  can be expressed as follows,

$$\tau_{2SLS} = \frac{\lim_{\Delta \downarrow 0} E[Y|X = c + \Delta] - \lim_{\Delta \uparrow 0} E[Y|X = c + \Delta]}{\lim_{\Delta \downarrow 0} E[D|X = c + \Delta] - \lim_{\Delta \uparrow 0} E[D|X = c + \Delta]}, \quad (2)$$

where we assume the distribution of unobserved applicant characteristics is continuous at  $c$ .

We estimate  $\tau_{2SLS}$  using two stage least squares. We cluster standard errors at the admission score level (Lee & Card, 2008), apply triangular weights to prioritize observations closest to the cutoff, and calculate an optimal bandwidth for each outcome following Imbens & Kalyanaraman (2012). Our main results are robust to the choice of bandwidth (see Online Appendix Table D.2), kernel, and weight. We include cohort fixed effects throughout to increase precision.

## Identifying Assumptions

In our survey data, we observe  $Y_{1i}$ , a TFA participant’s education policy belief. We cannot observe the counterfactual of interest,  $Y_{0i}$ , a TFA participant’s education policy belief had they not been admitted to TFA. Thus, a causal interpretation of the estimates reported above relies upon the assumption that potential outcomes  $Y_{0i}$  and  $Y_{1i}$  are continuous at the admission score cutoff. In essence, we are assuming the policy opinions of those who just barely missed the threshold for admission serve as a reasonable counterfactual for what the policy opinions of TFA participants would have been had they not been admitted to TFA. In what follows, we share evidence that suggests this is a plausible assumption. Namely, at the TFA cutoff we observe no manipulation of the running variable (selection scores), no discontinuities in observable applicant characteristics, and no differential attrition.

We tested for possible manipulation of selection scores both visually and empirically (Figure D.1 in the Online Appendix). Neither of these exercises suggested TFA selectors or applicants altered admission scores to favor or penalize applicants who seemed predisposed to particular

policy preferences. Specifically, using the manipulation test developed by Cattaneo, Jansson, and Ma (2019), we observe that the density of admission scores is continuous at the cutoff, both for the entire TFA applicant pool ( $p = 0.75$ ) and for the sample of individuals who responded to the survey ( $p = 0.31$ ). This is consistent with the institutional details provided in our discussion of TFA’s selection process, which note that neither the selector nor the applicant knew the cutoff decision rule.

Further, we test for differences in the observable characteristics of individuals who scored just on either side of the admission score cutoff. For these analyses, we estimate the following reduced form (RD-ITT) specification:

$$Y_i = \beta X_i + \zeta Z_i + \gamma X_i Z_i + \lambda_{c(i)} + \epsilon_i \quad (3)$$

where  $Y_i$  is an applicant characteristic at baseline,  $X_i$  represents an applicants’ admission score,  $Z_i$  is an indicator for scoring above the admissions cutoff, and  $\lambda_{c(i)}$  are cohort fixed effects.<sup>14</sup> As we summarize in Figure 2, the reduced form RD-ITT estimate of the jump in each baseline applicant characteristic at the cutoff ( $\zeta$ ) is zero. In other words, observable pre-treatment measures of the study participants trend smoothly at the cutoff.

Finally, we check for differential attrition by examining the distribution of response rates at the threshold for admission. As we show in Figure 3, response rates are continuous at the admission score cutoff, reducing concerns that our estimates could be biased by differences in the probabilities “treated” and “comparison” applicants responded to our survey. Our reduced form estimate of the effect of scoring above the TFA cutoff on survey completion rates is 0.01 and statistically indistinguishable from zero ( $p = 0.27$ ). We conclude that applicants near the margin for admission were equally likely to take our survey.

Though we cannot rule out the possibility that unobserved differences in applicants admitted (rejected) at the margin remain, we take the totality of this evidence as consistent with our key identifying assumption: in the absence of an offer to TFA, the education policy views of individuals who scored near the cutoff would be equal in expectation.

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<sup>14</sup>We estimate equation (3) using a local linear regression, cluster standard errors at the admission score level, and calculate an optimal Imbens & Kalyanaraman (2012) bandwidth for each outcome.

## RESULTS

Overall, TFA participation (i) decreases beliefs that students from low-income backgrounds are not motivated or do not value education, (ii) increases beliefs that societal issues exacerbate academic achievement gaps, (iii) does not increase support for any of the politically-charged education policy levers we asked about—including school choice policies, the Common Core standards, teacher merit pay, and teachers unions, (iv) increases beliefs that adequate support services such as nutritional support and counseling, as well as increased investments in early childhood care, are needed to improve educational outcomes for low-income children, and (v) increases beliefs that teachers are capable of decreasing educational disparities between poor and non-poor students, and that the educational opportunity gap is solvable. Table 2 presents these main results, which we also summarize visually in Figure 4. We present separate estimates for each survey item to preserve nuance in individuals’ views on each education issue.<sup>15</sup>

### Inequality in Education

TFA participation reduces beliefs that the actions or values of low-income students (or their families) contribute to income-based differences in educational achievement. In other words, consistent with Mo and Conn (2018), TFA participants focus on situational or environmental factors that low-income students face, rather than their traits or dispositions. Relative to non-participants, TFA participants are 10.3 percentage points (pp) ( $p < 0.01$ ; 34 percent change from the mean) more likely to disagree that “poor families do not value education as much as richer families,” 9.8 pp ( $p < 0.01$ ; 36 percent change from the mean) more likely to disagree that “poor students have low motivation or will to learn,” and 9.6 pp ( $p < 0.01$ ; 34 percent change from the mean) more likely to disagree that “the amount a student can learn is primarily related to the student’s family background.” Rather, TFA participants are more likely to believe income-based achievement gaps are explained by larger societal inequities. TFA participants are 8.5 pp ( $p < 0.01$ ) more likely to agree that “systemic injustices perpetuate inequity throughout society” (10 percent change from

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<sup>15</sup>We elect not to employ data reduction techniques such as a factor analysis for two reasons. First, we found that individuals’ education policy views were sufficiently nuanced that combining outcome measures that appear related at face value (e.g., beliefs pertaining to charter schools and school vouchers) masked important variation in individuals’ views on school choice. Second, as shown in Figure D.2, the signs and the statistical significance levels on our outcome measures follow consistent patterns, allaying concerns regarding spurious results from multiple hypothesis testing.

the mean) and 10.7 pp ( $p < 0.01$ ) more likely to disagree that “in the US today, students from low income backgrounds have the same educational opportunities as students from high income backgrounds” (119 percent change from the mean). We present visualizations of these effects in Online Appendix Figure D.2.

## Education Reform

With respect to current policies designed to reduce educational inequities, we find that TFA participation generally does not increase support for highly politicized policies. For example, we observed no marginal difference in TFA participants’ support for unions, the Common Core, linking teacher evaluation pay to student achievement, and allocating school funding based on student need. An important exception to this general trend is that participation in TFA may, if anything, decrease support for school choice. Compared to non-participants, TFA participants are 12.4 pp ( $p < 0.01$ ; 22 percent change from the mean) less likely to support the “expansion of high-quality charter schools” and 10.6 pp ( $p=0.02$ ; 20 percent change from the mean) less likely to support vouchers for low-income children to private schools. Additionally, participation in TFA decreases criticism of standardized testing: Though both participants and non-participants generally agree that “we should reduce dependence on standardized testing,” TFA participants are 7.6 pp ( $p = 0.02$ ; 10 percent change from the mean) less likely to agree with the statement. In other words, TFA participants were less negative about the utility of standardized testing.

However, participating in TFA does increase support for less politicized education reforms. We find that overall, TFA participation causes an increase in support for school-based services. For example, we find a 7.0 pp ( $p < 0.01$ ) increase in support for investments in counselors and nutrition (9 percent change from the mean) and a weakly significant 6.7 pp ( $p = 0.08$ ; 8 percent change from the mean) increase in support for the expansion of high-quality preK. When the bandwidth is widened to include more observations, the increase in support for early childhood education is similar in magnitude, but statistically significant at standard levels (see the third column in Table D.2 in the Online Appendix). In addition, we find that participants are 5.7 pp ( $p = 0.02$ ; 7 percent change from the mean) more likely to support elevating the prestige of the teaching profession, which is in line with our results on teacher potential and optimism, described below. We present visualizations of these effects in Online Appendix Figures D.3-D.4.

## Teacher Potential and Optimism

TFA participation increases beliefs in teachers’ ability to foster and support student learning, regardless of student background. Specifically, TFA participants are 7.8 pp ( $p = 0.03$ ; 11 percent change from the mean) more likely to agree that student intelligence is malleable or “capable of changing a great deal,” 7.9 pp ( $p = 0.02$ ; 13 percent change from the mean) more likely to agree that “if teachers try really hard they can get through to even the most difficult or unmotivated students,” and 7.0 pp ( $p = 0.03$ ; 29 percent change from the mean) more likely to disagree that “in poor communities, there really is very little a teacher can do to ensure that most of his/her students achieve at a high level.” These findings are at odds with what we might expect to observe if TFA left teachers feeling disillusioned, and suggests that TFA participation increases optimism about the capacity of teachers in reducing educational inequities. Consistent with this view, TFA participants are 10.8 pp ( $p < 0.01$ ; 15 percent change from the mean) more likely to agree that “it is possible for all children in the US to have the opportunity to attain an excellent education.” We present visualizations of these effects in Online Appendix Figure D.5.

## ROBUSTNESS CHECKS

Reassuringly, our main results are largely consistent across alternative modeling choices (see the Online Appendix for a deeper discussion of sensitivity checks we conducted). To interpret these stable 2SLS estimates as unbiased estimates of the effect of TFA participation, however, we must assume that TFA participation is the only channel through which an offer to TFA changes an individual’s education views. Perhaps scoring below the TFA cutoff could leave some applicants feeling resentful or aggrieved. An interrogation of the data shows no uniform evidence that non-participants are more pessimistic (or optimistic) about particular policy levers than TFA teachers. Rather, the direction of the treatment effects we report hinge upon the particular policy under consideration.

A second potential violation of the exclusion restriction is that TFA might be particularly skilled at selecting candidates who hold ideological perspectives that correlate with education policy beliefs. In this case, the experience of participating in TFA might do little to move the needle on those views. We use three distinct strategies to examine this possibility, and find strong evidence

that individuals’ education views do not predate their time in the classroom. First, we compare the views of the group of individuals admitted to TFA (“admits”) to the views of individuals who were admitted to TFA *and* took up their place in the program (henceforth, referred to as “matriculants”). Table 3 shows the results of two different analyses comparing the views of admits and matriculants; Column 1 displays our main results for ease of reference, which are 2SLS estimates of the treatment effects among the treated (TOT). Column 2 of Table 3 displays intent-to-treat (ITT) estimates, where the “treatment” group is redefined to include everyone admitted to TFA, inclusive of those who did not matriculate. If TFA participation, as opposed to TFA admission, causes shifts in attitudes and beliefs on the dimensions we measure, we would expect the inclusion of non-matriculants to result in a systematic attenuation of our main TOT effects. Indeed, we observe that each of the ITT effect sizes are smaller than the 2SLS effect sizes. However, with the majority of those assigned to the “treatment” group receiving the treatment (over 80 percent), statistical significance (or insignificance) for each outcome does not change.

Second, we limit the sample to only those admitted to TFA, and regress each outcome measure on an indicator for participation in TFA, controlling for pre-treatment demographic characteristics. We report the coefficient on TFA participation in column 3 of Table 3, and observe statistically significant differences in the views of matriculants and admits across 15 of our 19 outcome measures. Moreover, the direction of the coefficients are consistent with the TOT and ITT results, with the exception of three outcomes. Given selection bias concerns, we are not concerned about these three discrepancies, and favor the findings from the 2SLS estimates over those from the OLS estimates. The exercise of comparing TOT to ITT effects, and assessing the effect of matriculation conditional upon receiving TFA admission provides evidence that suggests participation in TFA, not just scoring above the TFA cutoff, shapes individuals’ views on education. As a final point, the interpretation of the reduced form estimates presented in column 1 of Table 2 as the causal effect of scoring above the TFA cutoff on individuals’ education views holds without the more stringent exclusion restriction assumption discussed above. These unscaled treatment effects provide strong evidence that an offer to TFA causes a shifts in individuals’ education views. The remainder of the paper aims to further interrogate why we observe these effects.



## TREATMENT MECHANISMS

We conceptualize TFA participation as a bundle of treatments or compound treatment, including but not limited to teaching in low-income schools and partaking in TFA’s training regimen. Given this multi-faceted nature of the TFA experience, we need to ascertain whether individuals who scored above TFA’s admission cutoff changed their education views because of firsthand experience teaching, because of TFA training, or because of some other element of the TFA experience. We make strides towards addressing this classic and ubiquitous “bundle of treatments” challenge by leveraging the fact that TFA’s admission score cutoff is a strong instrument for multiple endogenous treatments of interest. In particular, we find that scoring above (below) TFA’s admission cutoff affects not only an individual’s likelihood of participating in TFA, but also an individual’s likelihood of entering the teaching profession, through TFA or otherwise. Note that if it were true that a) all those who scored above the cutoff taught with TFA and b) all those below the cutoff did not teach, then our estimates of the “teaching effect” would be identical to our estimates of the “TFA effect.” However, in practice this is not the case: Some individuals apply to TFA and find their way into teaching whether they are offered a spot with TFA or not. In Figure 1b, we show that those who score just above the TFA cutoff are 15 percentage points more likely to teach than those who score just below the TFA cutoff ( $p < 0.01$ ,  $F > 10$ ). We leverage this strong first stage on teaching—irrespective of TFA—to consider an alternative strategy for scaling our reduced form estimates of the effect of a TFA offer on individuals’ education views.

Note that from an analytical perspective, we have hereto assumed any changes we observed due to scoring above the TFA cutoff stemmed from TFA participation. An alternative would be to assume that the only channel through which scoring above the TFA cutoff affects individuals’ education views is through teaching (i.e., a variation on the exclusion restriction underpinning our preferred model). Under this alternative model, we can estimate the effect of teaching on individuals’ education views using the same two-stage least squares strategy outlined above, where the endogenous treatment is redefined as an indicator variable for teaching after applying to TFA, as opposed to participating in TFA.<sup>16</sup>

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<sup>16</sup>For this analysis, we only classify an individual as a teacher if they applied to TFA in year  $t$  and indicated teaching full-time in year  $t+1$  or later. In other words, we do not define individuals as treated based on their teaching experience prior to applying to TFA.

We report these estimates in Table 4. Note that our estimates of the effect of teaching on individuals’ education views (column 3) are systematically larger than our estimates of the effect of TFA participation on individuals’ education views (column 2) simply because the scaling factor for teaching (about 1 in 6) is smaller than the scaling factor for TFA participation (about 1 in 3). Nevertheless, we present both sets of estimates because under both our preferred and alternative 2SLS specifications, the exclusion restriction imposes fairly strong modeling assumptions. Thus, we present what we view to be the two most plausible options for scaling our reduced form estimates, and in so doing, present a range of feasible estimates for the effect of the “teaching in low-income schools” treatment on the treated (TOT). In practice, the “true” TOT for each outcome is likely some weighted average of the 2SLS estimates presented in Columns 2 and 3.

As an additional exploratory exercise, we leverage variation over time in the effect of the TFA cutoff on whether one participated in TFA (Online Appendix Figure D.7) and whether one taught (Online Appendix Figure D.8) to examine the following: Are changes in our outcome measures larger in years where the effect of scoring above the TFA cutoff on whether one teaches is the largest, or in the years where the effect of scoring above the TFA cutoff on being a TFA participant is the largest? The results of this exercise have the potential to suggest which scaling factor—TFA participation, which involves teaching in a low-income school plus TFA programming, or teaching in general (through TFA or an alternative program)—we should assign more weight. We find that changes in individuals’ education views tend to be largest in the years where the effect of the TFA cutoff on becoming an educator, which we refer to as the “teaching effect,” are the strongest (see the Online Appendix for additional details on this test of the treatment mechanism), which provides some reassurance that we are picking up a teaching effect.

To further explore this questions, we consider a sample of TFA teachers with very limited classroom experience—those who applied to the 2015 cohort and had been teaching for less than six months at the time of our survey. As shown in Online Appendix Figure D.6, we observe no effect of TFA on these individuals’ views. This evidence is incompatible with a claim that individuals’ views change simply because they join TFA and received TFA training, and suggests instead that extended time spent teaching in the classroom is driving our main results.

## DISCUSSION

To our knowledge, our paper is the first large-N causal examination of how first-hand teaching experience in underserved communities in the United States shapes individuals’ opinions on educational inequality and reform. We examine the effect of teaching in low-income schools through TFA, an alternative teacher preparation program geared specifically towards closing the educational opportunity gap between low-income students and their wealthier counterparts. Because TFA teachers work in exactly the type of schools where educational disparities between low and high income children are most prominent, these teachers hold important firsthand knowledge and views on what causes, and what closes, academic achievement gaps.

While we find strong evidence that experience as a teacher—the street-level bureaucrat of the education system—engender different perspectives on education, an important limitation of our study is that TFA applicants comprise only a fraction of the population of teachers working in low-income schools. Moreover, the views of TFA applicants may not be representative of non-TFA teachers working in similar schools. To that end, our causal estimates pertain to a potentially distinct subset of teachers, and may not fully capture the effect of teaching in underserved schools alone. Additional research is necessary to explore the external validity of our findings.

Leveraging a quasi-experimental design and an unprecedented original survey of TFA applicants, we find that experience teaching in low-income communities affects both how individuals conceive of educational inequality and the beliefs participants hold about how these inequities could be remedied. Overall, those with teaching experience in disadvantaged communities are more likely to believe educational inequities stem from systemic societal inequalities, rather than inherent differences in how students from distinct socioeconomic backgrounds value education, which is consistent with findings in Dobbie & Fryer (2015) and Mo & Conn (2018). In addition, those with teaching experience in low-income schools are no more likely to believe that numerous politically-charged reform strategies (e.g. charter schools, voucher provision, Common Core standards, teacher merit pay, and teachers unions) will help address issues of educational inequality and inequity. Instead, they are more optimistic that teachers are capable of driving positive changes in the classroom, and are more likely to believe school support services play an important role in reducing income-based differences in educational achievement.

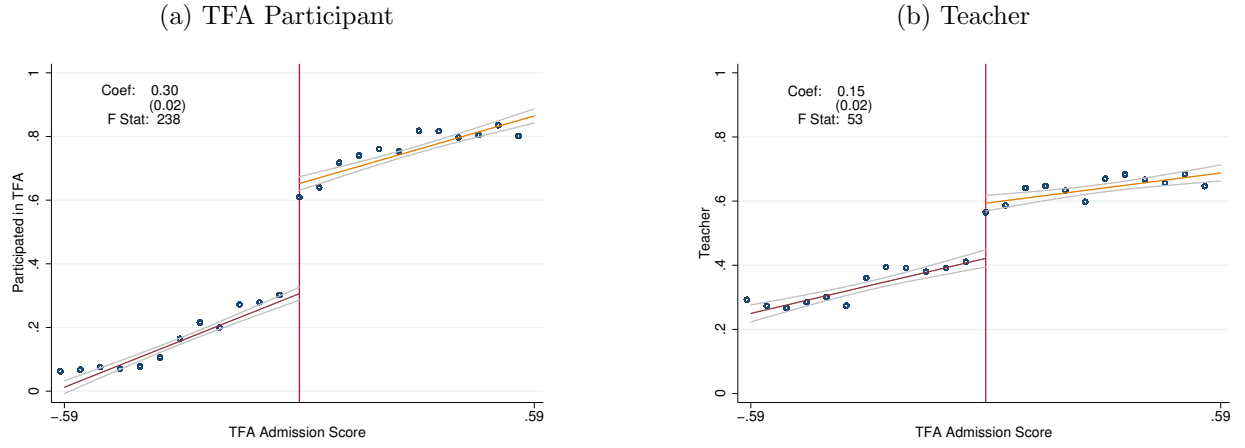
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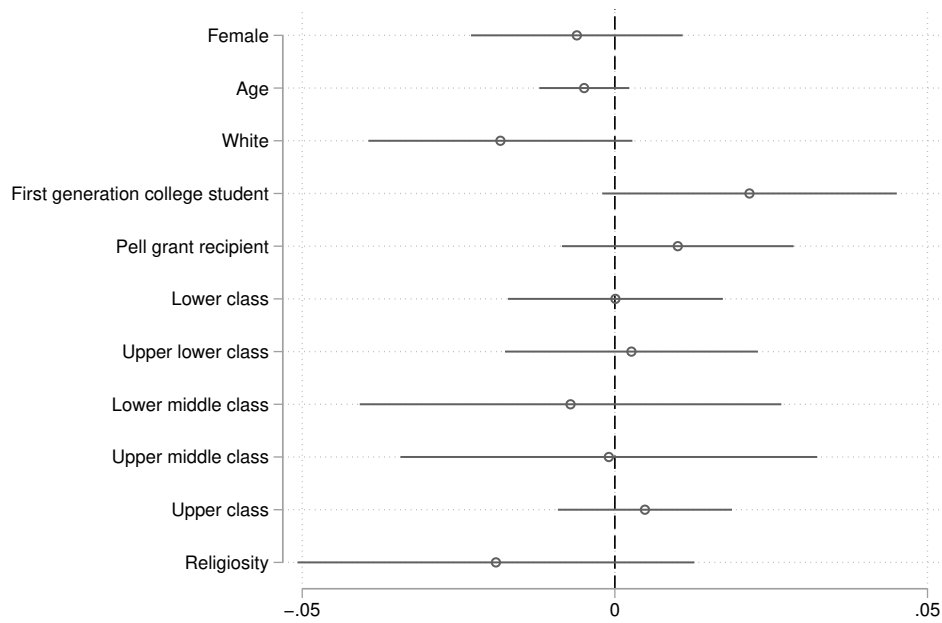
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Figure 1: First Stage Results



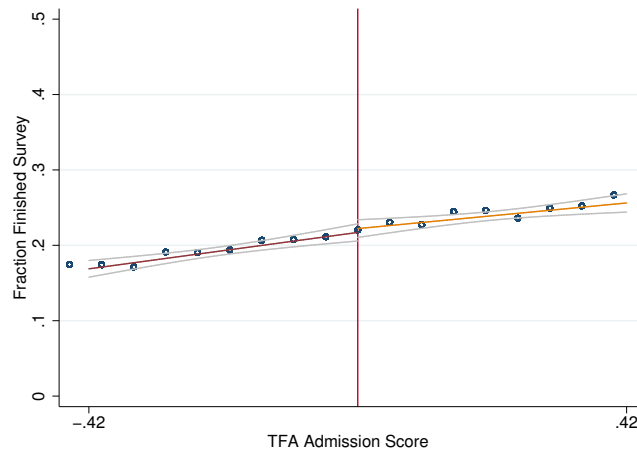
*Notes:* Figure A plots the fraction of individuals who, after applying to TFA, decided to participate in TFA (e.g. “Treatment 1”). Figure B plots the fraction of individuals who, after applying to TFA, decided to enter teaching (“Treatment 2”). For each of the two treatments, we plot actual and fitted values of the fraction of individuals “treated” by admission score. We re-centered the admission score distribution such that zero represents the cutoff score for each year. We then standardized admission scores by year. In each figure, the bin size is .05 and a 95% confidence interval is depicted.

Figure 2: Reduced Form Estimates of Pre-treatment Characteristics



*Notes:* This figure displays reduced form coefficients estimated with 95 percent confidence intervals surrounding point estimates.

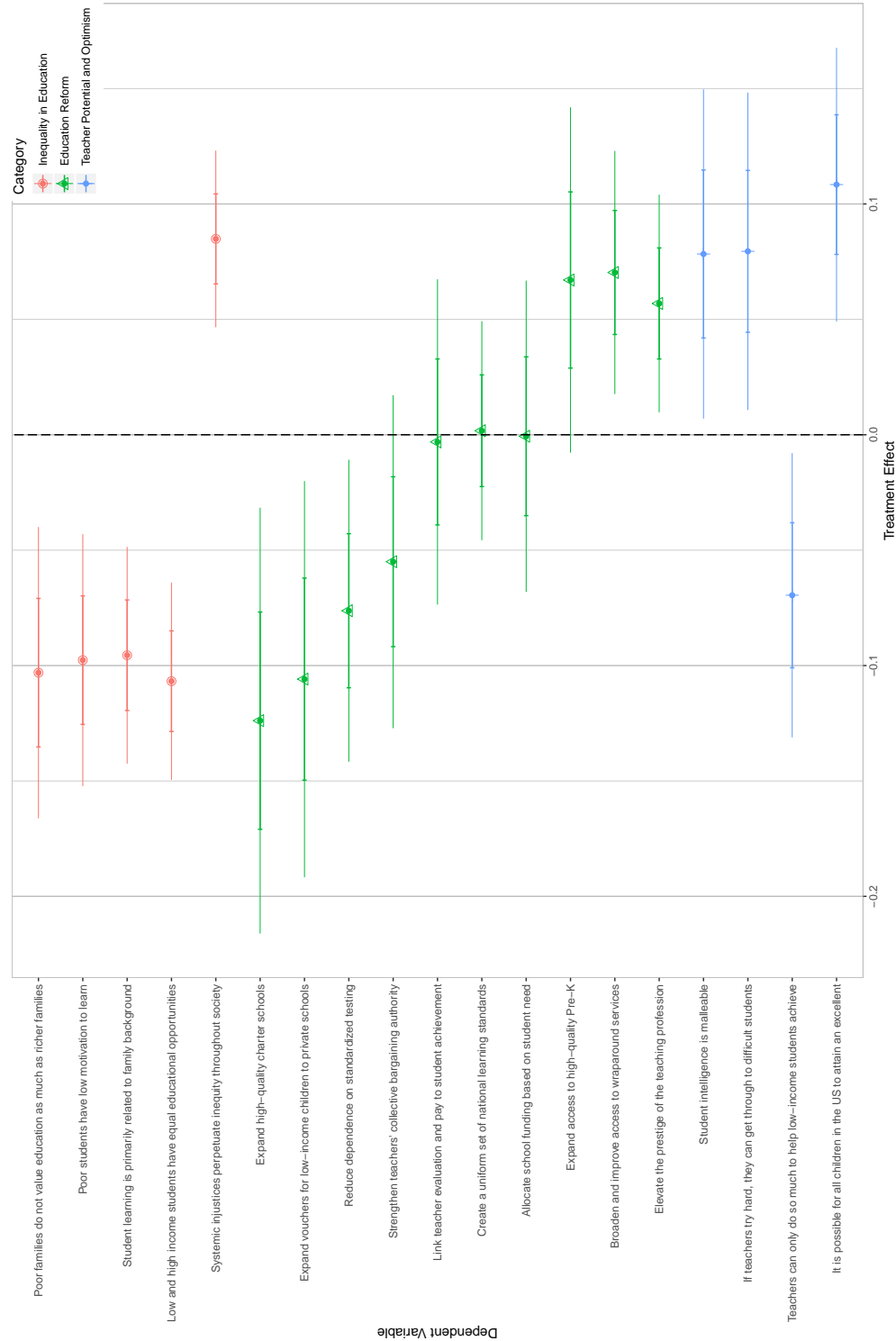
Figure 3: Response Rates



*Notes:* This figure plots survey response rates by admission score and includes a 95% confidence interval. We re-centered the admission score distribution such that zero represents the cutoff score for each year. We then standardized admission scores by year. The bin size is .05.



Figure 4: Summary of 2SLS Estimates



*Notes:* All specifications include cohort fixed effects. Standard errors are clustered at the selection score level. We calculate an optimal IK bandwidth for each outcome, and apply triangular kernel weights. The 95 percent confidence intervals surround point estimates; the thicker lines between the bars represent one standard error.

Table 1: Summary Statistics and Difference in Means

	(1)	(2)	(3)	(4)
	Overall mean	TFA mean	Non-TFA mean	Difference ( $\mu_2 - \mu_3$ )
<b>A. Sample characteristics</b>				
Female	0.72	0.73	0.72	0.01*
Black or Hispanic	0.18	0.16	0.19	-0.02***
White	0.70	0.72	0.68	0.04***
First Generation College Student	0.13	0.15	0.12	0.02***
Pell Grant Recipient	0.31	0.29	0.33	-0.04***
Lower Class	0.07	0.07	0.07	0.00
Upper Lower Class	0.08	0.08	0.08	0.00
Lower Middle Class	0.36	0.35	0.37	-0.02***
Upper Middle Class	0.45	0.46	0.45	0.01
Upper Class	0.04	0.04	0.03	0.01***
Religiosity	0.58	0.59	0.57	-0.02*
Age	29.2	28.5	30.9	-2.4***
<b>B. Survey outcomes</b>				
<i>Inequality in education</i>				
Poor families do not value education as much as richer families	0.30	0.25	0.34	-0.09***
Poor students have low motivation to learn	0.27	0.25	0.31	-0.06***
Student learning is primarily related to family background	0.28	0.23	0.32	-0.09***
Low and high income students have equal educational opportunities	0.09	0.08	0.11	-0.04***
Systemic injustices perpetuate inequity throughout society	0.82	0.86	0.78	0.08***
<i>Education reform</i>				
Expand high-quality charter schools	0.55	0.54	0.56	-0.02***
Expand vouchers for low-income children to private schools	0.50	0.49	0.55	-0.06***
Reduce dependence on standardized testing	0.72	0.70	0.75	-0.05***
Strengthen teachers' collective bargaining authority	0.51	0.51	0.54	-0.04***
Link teacher evaluation and pay to student achievement	0.36	0.38	0.35	0.04***
Create a uniform set of national learning standards	0.80	0.80	0.79	0.01***
Allocate school funding based on student need	0.76	0.79	0.75	0.03***
Expand access to high-quality Pre-K	0.82	0.86	0.78	0.08***
Broaden and improve access to wraparound services (e.g., nutrition, counseling)	0.85	0.87	0.83	0.04***
Elevate the prestige of the teaching profession	0.85	0.88	0.82	0.06***
<i>Teacher potential and optimism</i>				
Student intelligence is malleable	0.70	0.75	0.67	0.08***
If teachers try hard, they can get through to difficult students	0.60	0.64	0.58	0.06***
Teachers can only do so much to help low-income students achieve	0.24	0.20	0.27	-0.06***
It is possible for all children in the US to attain an excellent education	0.73	0.77	0.70	0.07***

*Notes:* This table reports summary statistics for demographic characteristics and outcome measures for all survey respondents (column 1), TFA participants only (column 2), and non-TFA participants only (column 3). Demographic characteristics with regards to gender, ethnicity, first-generation status, Pell Grant status, economic class while growing up, and whether one identifies with a religion are dichotomous measures, where 1 indicates having the noted characteristic. Age indicates the age of respondents at the time of the survey. Column (4) reports the results of a two sample t-test for the difference in means. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

Table 2: Main Results

Outcome	(1) Reduced form	(2) First stage	(3) 2SLS	(4) Obs
<b>Inequality in education</b>				
Poor families do not value education as much as richer families	-0.037*** (0.012)	0.360*** (0.019)	-0.103*** (0.032)	17,515
Poor students have low motivation to learn	-0.037*** (0.010)	0.380*** (0.019)	-0.097*** (0.028)	17,515
Student learning is primarily related to family background	-0.036*** (0.009)	0.372*** (0.018)	-0.095*** (0.024)	18,876
Low and high income students have equal educational opportunities	-0.036*** (0.007)	0.333*** (0.020)	-0.107*** (0.022)	18,939
Systemic injustices perpetuate inequity throughout society	0.034*** (0.008)	0.405*** (0.018)	0.085*** (0.020)	17,525
<b>Education reform</b>				
Expand high-quality charter schools	-0.039*** (0.015)	0.312*** (0.022)	-0.123*** (0.047)	18,237
Expand vouchers for low-income children to private schools	-0.034** (0.014)	0.325*** (0.021)	-0.106** (0.044)	18,248
Reduce dependence on standardized testing	-0.027** (0.012)	0.350*** (0.020)	-0.076** (0.033)	18,252
Strengthen teachers' collective bargaining authority	-0.019 (0.013)	0.349*** (0.020)	-0.055 (0.037)	18,227
Link teacher evaluation and pay to student achievement	-0.001 (0.013)	0.358*** (0.019)	-0.003 (0.036)	18,247
Create a uniform set of national learning standards	0.000 (0.009)	0.379*** (0.018)	0.002 (0.024)	18,540
Allocate school funding based on student need	-0.000 (0.011)	0.301*** (0.022)	-0.000 (0.034)	18,245
Expand access to high-quality Pre-K	0.021* (0.012)	0.312*** (0.022)	0.067* (0.038)	18,250
Broaden and improve access to wraparound services	0.023** (0.009)	0.334*** (0.021)	0.070*** (0.027)	18,253
Elevate the prestige of the teaching profession	0.020** (0.009)	0.350*** (0.020)	0.057** (0.024)	18,250
<b>Teacher potential and optimism</b>				
Student intelligence is malleable	0.025** (0.012)	0.322*** (0.022)	0.078** (0.036)	17,838
If teachers try hard, they can get through to difficult students	0.026** (0.012)	0.326*** (0.021)	0.079** (0.035)	18,939
Teachers can only do so much to help low-income students achieve	-0.021** (0.010)	0.308*** (0.022)	-0.070** (0.031)	18,878
It is possible for all children in the US to attain an excellent education	0.041*** (0.011)	0.379*** (0.019)	0.108*** (0.030)	17,490

*Notes:* This table reports reduced form, first stage, and two-stage least squares (2SLS) estimates. The 2SLS estimates instrument for TFA participation using an indicator for scoring above the admissions cutoff. All specifications include cohort fixed effects. Standard errors are clustered at the selection score level and are displayed in parentheses. We calculate an optimal IK bandwidth for each outcome, and apply triangular kernel weights. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

Table 3: Robustness of Results Across Alternative Modeling Specifications

Outcome	Estimate		
	(1)	(2)	(3)
	TOT	ITT	OLS
<b>Inequality in education</b>			
Poor families do not value education as much as richer families	-0.103*** (0.032)	-0.091*** (0.028)	-0.095*** (0.020)
Poor students have low motivation to learn	-0.098*** (0.028)	-0.086*** (0.024)	-0.044** (0.020)
Student learning is primarily related to family background	-0.095*** (0.024)	-0.084*** (0.021)	-0.111*** (0.016)
Low and high income students have equal educational opportunities	-0.107*** (0.022)	-0.094*** (0.019)	-0.030** (0.012)
Systemic injustices perpetuate inequity throughout society	0.085*** (0.020)	0.075*** (0.017)	0.068*** (0.018)
<b>Education reform</b>			
Expand high-quality charter schools	-0.123*** (0.047)	-0.110*** (0.041)	-0.031 (0.023)
Expand vouchers for low-income children to private schools	-0.106** (0.044)	-0.094** (0.039)	-0.088*** (0.026)
Expand access to high-quality Pre-K	0.067* (0.038)	0.059* (0.034)	0.081*** (0.017)
Reduce dependence on standardized testing	-0.076** (0.033)	-0.067** (0.029)	-0.081*** (0.019)
Strengthen teachers' collective bargaining authority	-0.055 (0.037)	-0.049 (0.032)	0.001 (0.025)
Link teacher evaluation and pay to student achievement	-0.003 (0.036)	-0.003 (0.032)	0.075*** (0.020)
Create a uniform set of national learning standards	0.002 (0.024)	0.002 (0.021)	0.018 (0.016)
Allocate school funding based on student need	-0.000 (0.034)	-0.001 (0.030)	0.034* (0.019)
Elevate the prestige of the teaching profession	0.057** (0.024)	0.050** (0.021)	0.049*** (0.016)
Broaden and improve access to wraparound services	0.070*** (0.027)	0.062** (0.024)	0.029** (0.012)
<b>Teacher potential and optimism</b>			
Student intelligence is malleable	0.078** (0.036)	0.069** (0.032)	0.149*** (0.017)
If teachers try hard, they can get through to difficult students	0.079** (0.035)	0.070** (0.031)	0.142*** (0.020)
Teachers can only do so much to help low-income students achieve	-0.070** (0.031)	-0.062** (0.028)	-0.091*** (0.012)
It is possible for all children in the US to attain an excellent education	0.108*** (0.030)	0.096*** (0.027)	0.123*** (0.021)

*Notes:* Column 1 reports our main 2SLS results (TOT), where we instrument for Teach For America participation using an indicator for scoring above the cutoff (see column 3 of Table 2). In column 2, we report ITT estimates, where the treatment is receiving an offer to participate in TFA. Column 3 reports results from a regression analysis of each outcome measure on matriculation conditional upon admission (1 = matriculated; 0 = declined admission offer) and demographic characteristics (age, gender, college GPA, undergraduate school selectivity, parental education, receipt of Pell Grant, socioeconomic status, and religiosity). All specifications include controls for cohort year. Standard errors are clustered at the selection score level and are in parentheses. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

Table 4: 2SLS Results Instrumenting for Teaching Experience

Outcome	(1) Reduced form	(2) 2SLS: TFA	(3) 2SLS: teacher	(4) Obs
<b>Inequality in education</b>				
Poor families do not value education as much as richer families	-0.037*** (0.012)	-0.103*** (0.032)	-0.168*** (0.043)	17,515
Poor students have low motivation to learn	-0.037*** (0.010)	-0.097*** (0.028)	-0.188*** (0.042)	17,515
Student learning is primarily related to family background	-0.036*** (0.009)	-0.095*** (0.024)	-0.167*** (0.043)	18,876
Low and high income students have equal educational opportunities	-0.036*** (0.007)	-0.107*** (0.022)	-0.187*** (0.043)	18,939
Systemic injustices perpetuate inequity throughout society	0.034*** (0.008)	0.085*** (0.020)	0.149*** (0.035)	17,525
<b>Education reform</b>				
Expand high-quality charter schools	-0.039*** (0.015)	-0.123*** (0.047)	-0.217** (0.085)	18,237
Expand vouchers for low-income children to private schools	-0.034** (0.014)	-0.106** (0.044)	-0.184** (0.077)	18,248
Reduce dependence on standardized testing	-0.027** (0.012)	-0.076** (0.033)	-0.132** (0.059)	18,252
Strengthen teachers' collective bargaining authority	-0.019 (0.013)	-0.055 (0.037)	-0.096 (0.065)	18,227
Link teacher evaluation and pay to student achievement	-0.001 (0.013)	-0.003 (0.036)	-0.005 (0.063)	18,247
Create a uniform set of national learning standards	0.000 (0.009)	0.002 (0.024)	0.003 (0.042)	18,540
Allocate school funding based on student need	-0.000 (0.011)	-0.000 (0.034)	-0.001 (0.060)	18,245
Expand access to high-quality Pre-K	0.021* (0.012)	0.067* (0.038)	0.117* (0.066)	18,250
Broaden and improve access to wraparound services	0.023** (0.009)	0.070*** (0.027)	0.121** (0.047)	18,253
Elevate the prestige of the teaching profession	0.020** (0.009)	0.057** (0.024)	0.098** (0.041)	18,250
<b>Teacher potential and optimism</b>				
Student intelligence is malleable	0.025** (0.012)	0.078** (0.036)	0.136** (0.064)	17,838
If teachers try hard, they can get through to difficult students	0.026** (0.012)	0.079** (0.035)	0.141** (0.062)	18,939
Teachers can only do so much to help low-income students achieve	-0.021** (0.010)	-0.070** (0.031)	-0.122** (0.055)	18,878
It is possible for all children in the US to attain an excellent education	0.041*** (0.011)	0.108*** (0.030)	0.188*** (0.053)	17,490

*Notes:* For ease of reference, columns 1 and 2 re-display the reduced form and 2SLS estimates from our preferred model where we use the TFA admissions cutoff to instrument for TFA participation. In column 3, we use the same TFA admissions cutoff, but instrument for teaching experience. All specifications include cohort fixed effects. Standard errors are clustered at the selection score level and are in parentheses. We calculate an optimal IK bandwidth for each outcome, and apply triangular kernel weights. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

## Online Appendix

*The Effect of Teaching in Underserved  
Schools on Beliefs About Education  
Inequality and Reform: Evidence from  
Teach For America*

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## A TFA’s Selection Process

TFA uses the following criteria to select applicants: academic achievement, leadership ability, critical thinking, growth mindset, perseverance, interpersonal and organizational skills, openness to feedback, respect for diversity, commitment to learning, and a belief in the potential of all children.<sup>1</sup> TFA screens for these qualities during three stages: an online application, a phone interview, and a daylong in-person interview.<sup>2</sup> This analysis focuses exclusively on those applicants who advanced to the final round of the admissions process, as these are the individuals who were most competitive for TFA, and received selection scores.

The selection score is a weighted average of an applicant’s sub-scores on each of the aforementioned admissions criteria. Weights are based upon TFA’s internal analyses estimating the relationship between applicant characteristics and later teacher performance. Neither applicants nor selectors are privy to the specific weighting scheme. While selection scores strongly influence admissions outcomes, the selection score is not an absolute determinant of admission: TFA admits (rejects) some individuals who score below (above) the cutoff in recognition of the fact that not all desirable applicant qualities can be adequately captured using a “one size fits all” rubric. However, as we will later show empirically, scoring above the admissions score cutoff significantly increases the probability an individual receives an offer to TFA.

Critical to this analysis, an applicant only receives one selection score at the conclusion of their in-person interview. That selection score is never adjusted, even if the applicant undergoes further review. There is very little incentive for selectors to artificially inflate candidates’ selection scores in order to sway admissions outcomes because i) it is an established feature of the selection process that applicants can be admitted (rejected) even if their selection score is below (above) the cutoff; ii) interviewers do not know what the cutoff threshold is; and iii) applicants never receive their selection scores. We conduct a number of tests of possible manipulation of selection scores (see the “identifying assumptions” section in the main text), and our empirical findings are entirely consistent with the institutional details shared here; we find no evidence of selection score

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<sup>1</sup>See TFA’s official guidelines on the “ideal Teach For America candidate” (Source: <https://www.teachforamerica.org/stories/the-ideal-teach-for-america-candidate> (accessed on May 30, 2019)).

<sup>2</sup>The application process for TFA is dynamic, and the selection process we describe reflects the process that was in place at the time of the study.



manipulation.

## B Sensitivity Analyses

Our main results are largely consistent across alternative modeling choices. Online Appendix Table D.2 shows our results are substantively similar across the optimal IK bandwidth, 1/2 this bandwidth, and twice this bandwidth, though we predictably lose some precision for estimates calculated using the smallest sample.

Online Appendix Table D.3 displays evidence that our results are not sensitive to our choice of outcome measurement. For this analysis, rather than employing a continuous outcome measure, we dichotomize each outcome measure. Except where otherwise noted in the table, outcomes take on a value of 1 if the participant responded “Strongly Agree” to a given statement, and 0 otherwise.<sup>3</sup> These estimates, which leverage variation in participant responses at the upper extreme, lead to findings that are consistent with the results presented above for 16 of 19 survey items. However, we do not observe an effect of scoring above TFA’s selection score cutoff on strong agreement that we should “reduce dependence on standardized testing” or “expand access to high-quality PreK.” Moreover, we observe only a marginally significant effect of scoring above the TFA cutoff on strong agreement that student intelligence is malleable. Thus, for these three outcomes, we conclude that any effect of scoring above (below) the cutoff on individuals’ views is not identified when we focus on participant responses at the upper extremes.

Finally, we examine the sensitivity of our outcomes to the inclusion of the 2008 applicant cohort, which we omitted in our preferred specification due to an anomaly in the 2008 admissions cycle (see Online Appendix Table D.4).<sup>4</sup> The results are substantively and statistically similar whether or not we include or exclude 2008. The only exceptions are that in including the 2008 cohort, we lose some precision (though maintain marginal significance) for two items regarding teacher potential, and gain precision for our estimate on teachers’ unions.

Finally, given that our outcome measures were collected using an online survey, we also consid-

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<sup>3</sup>To avoid misrepresenting the item stems presented on the survey, we did not reverse code our outcome measures. Thus, some outcomes take on a value of 1 if the participant responded “Strongly Disagree” to a given statement, and 0 otherwise. We specify the coding scheme for each outcome in the table.

<sup>4</sup>When we examine graphs of the effect of scoring above the admission cutoff on the probability of TFA participation (see Online Appendix Figure D.7), we do not detect a strong “first stage” for 2008.

ered one additional measurement issue. A potential complication on any survey is that respondents might satisfice (e.g., survey “straightlining”), and provide identical responses to a series of questions presented in a grid with the same answer choices. However, though we did arrange many of our education reform survey items in a grid form, we do not see any evidence of straightlining—participants simply selecting the same response for all survey items presented in a grid (Grezki, Meyer, & Schoen, 2014; Zhang & Conrad, 2014). Note that the overall mean values for each of the items are quite varied (see Table 1), and the TFA effect on the education reform questions in the grid vary substantially by item (for instance, see the estimates displayed in green in Figure 4).

## C Treatment Mechanisms

we leverage variation over time in the effect of the TFA cutoff on whether one participated in TFA (Online Appendix Figure D.7) and whether one taught (Online Appendix Figure D.8) to examine the following: Are changes in our outcome measures larger in years where the effect of scoring above the TFA cutoff on whether one teaches is the largest, or in the years where the effect of scoring above the TFA cutoff on being a TFA participant is the largest? The results of this exercise have the potential to suggest which scaling factor—TFA participation, which involves teaching in a low-income school plus TFA programming, or teaching in general (through TFA or an alternative program)—we should assign more weight.

To answer this question, we first estimate the effect of scoring just above the TFA cutoff on each of our 19 outcome measures separately for each of the seven application years from 2007 to 2013. The absolute value<sup>5</sup> of these 133 reduced form estimates serves as our outcome of interest,  $\delta_{Yst}$ , where  $s$  and  $t$  represent each survey item and year, respectively.<sup>6</sup> Next, we estimate the effect of scoring just above the cutoff on teaching for each year ( $\delta_{TEACH,t}$ ), and the effect of scoring just above the cutoff on TFA participation each year ( $\delta_{TFA,t}$ ). We then fit the following equation,

$$|\delta_{Yst}| = \beta_0 + \beta_1 \delta_{TEACH,t} + \beta_2 \delta_{TFA,t} + \lambda_s + \epsilon_{st} \quad (4)$$

including item-level fixed effects ( $\lambda_s$ ), and clustered standard errors by cohort year.

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<sup>5</sup>We take the absolute value to account for the fact that the reduced form estimates include both negative and positive values. To this end, the results of this analysis speak only to the strength of the change in individuals’ views, and not to the direction of the effect.

<sup>6</sup> $133 = 19$  (outcome measures) by  $7$  (application cohort years).

Table C.1 below summarizes the results of this OLS regression. Our estimates suggest that changes in individuals' education views tend to be largest in the years where the effect of the TFA cutoff on becoming an educator, which we refer to as the "teaching effect," are the strongest. However, we are unable to reject the null hypothesis that the coefficient on the teaching effect is statistically equivalent to the coefficient on the TFA effect. Thus, in examining why an offer to TFA causes a shift in individuals' education views, we maintain that acquiring teaching experience remains a strong candidate explanation. However, we cannot completely rule out the possibility that other non-teaching elements of the TFA treatment bundle may affect individuals' views as well.

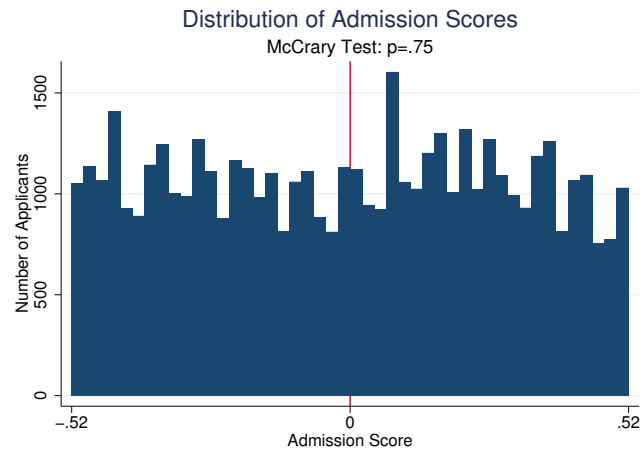
Table C.1: Mechanism Test

	(1)
	Magnitude of reduced form effects
TFA effect	0.046** (0.017)
Teaching effect	0.069** (0.020)
Constant	0.010 (0.005)
Observations	133

*Notes:* In this regression, the outcome is the absolute value of the reduced form estimate of the effect of scoring above TFA's selection cutoff for each item, by year. We run a single regression of this outcome on two key predictors. The first is the first stage estimate of the effect of scoring above the admission score cutoff on individual's probability of participating in TFA. The second is the first stage estimate of the effect of scoring above the admission score cutoff on individual's probability of teaching (TFA or otherwise). We include item-level fixed effects and cluster standard errors by year. Standard errors are in parentheses. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

## D Additional Tables and Figures

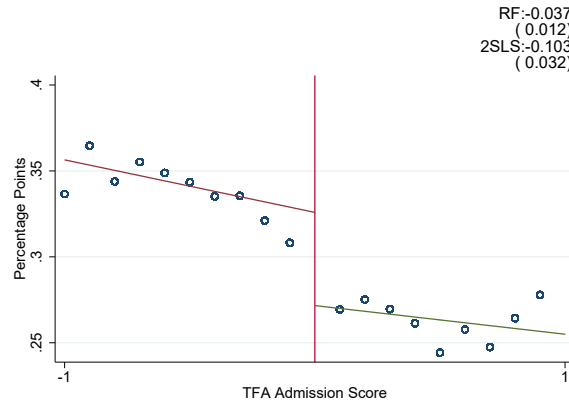
Figure D.1: Admission score distribution



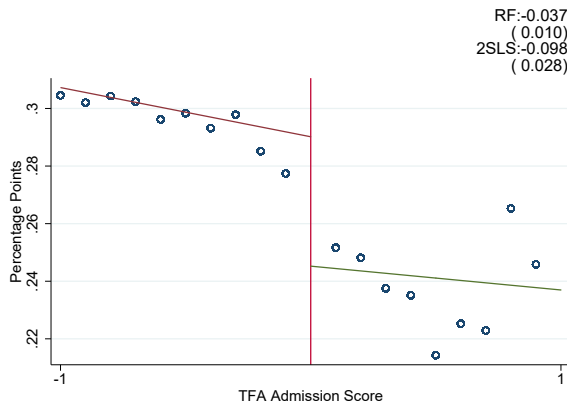
*Note:* This figure plots the distribution of applicant scores near the cutoff.

Figure D.2: Inequality in education

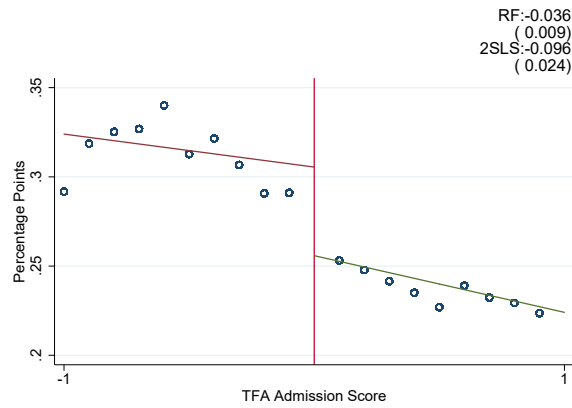
(a) Poor families do not value education



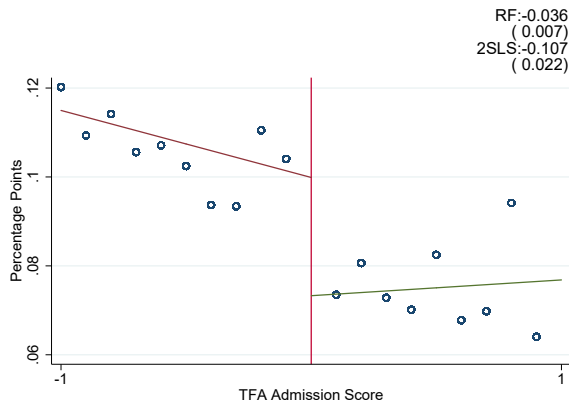
(b) Poor students have low motivation to learn



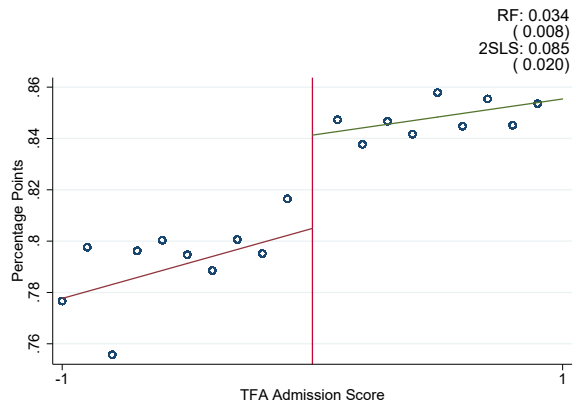
(c) Student learning is primarily related to family background



(d) Low and high income students have equal educational opportunities

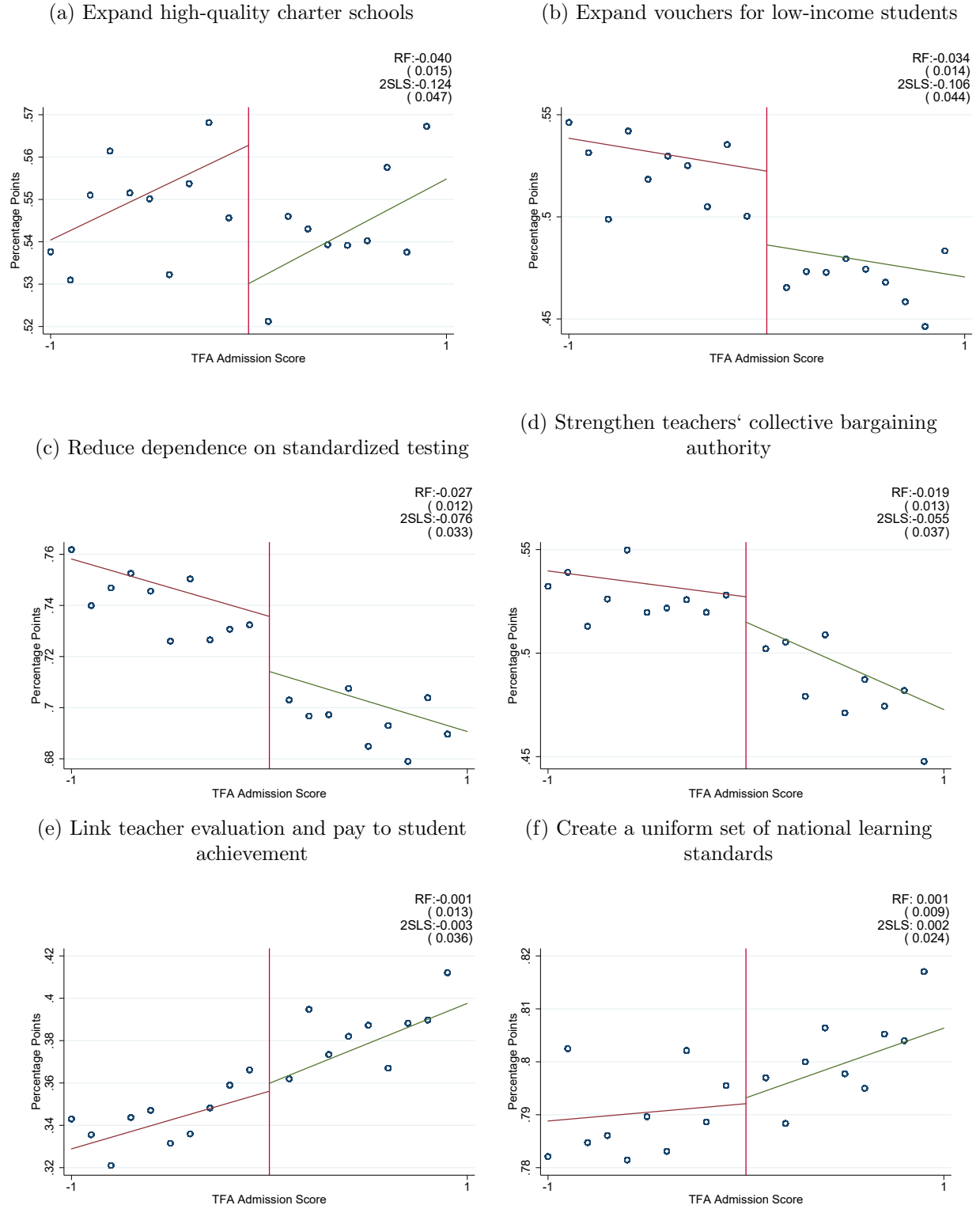


(e) Systemic injustices perpetuate inequality throughout society



*Notes:* These figures plot actual and fitted values for individuals who applied to TFA between 2007 and 2013, with the exception of the 2008 application cohort which we removed. For ease of visual comparisons across outcomes, we apply a uniform bandwidth of half a standard deviation to all outcomes. The bin size is .10. We report the reduced form (RF) estimates of the differences at the admissions threshold for each outcome, where standard errors are in parentheses.

Figure D.3: Education reform (part 1)



*Notes:* These figures plot actual and fitted values for individuals who applied to TFA between 2007 and 2013, with the exception of the 2008 application cohort which we removed. For ease of visual comparisons across outcomes, we apply a uniform bandwidth of half a standard deviation to all outcomes. The bin size is .10. We report the reduced form (RF) estimates of the differences at the admissions threshold for each outcome, where standard errors are in parentheses.

Figure D.4: Education reform (part 2)

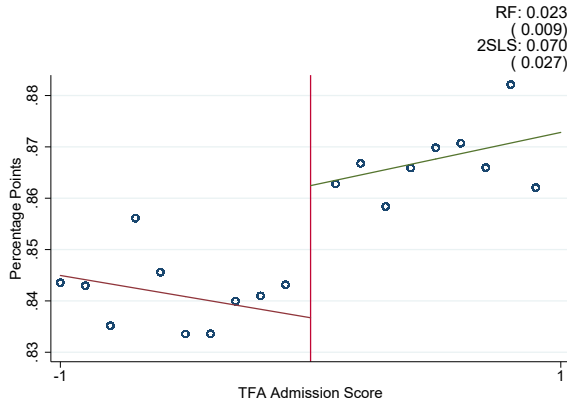
(a) Allocate school funding based on need



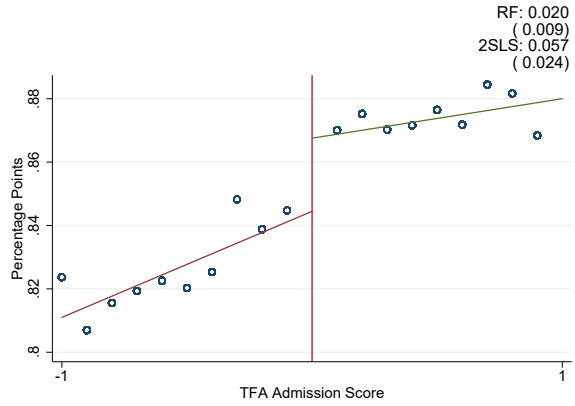
(b) Expand access to high-quality preK



(c) Broaden and improve access to wraparound services

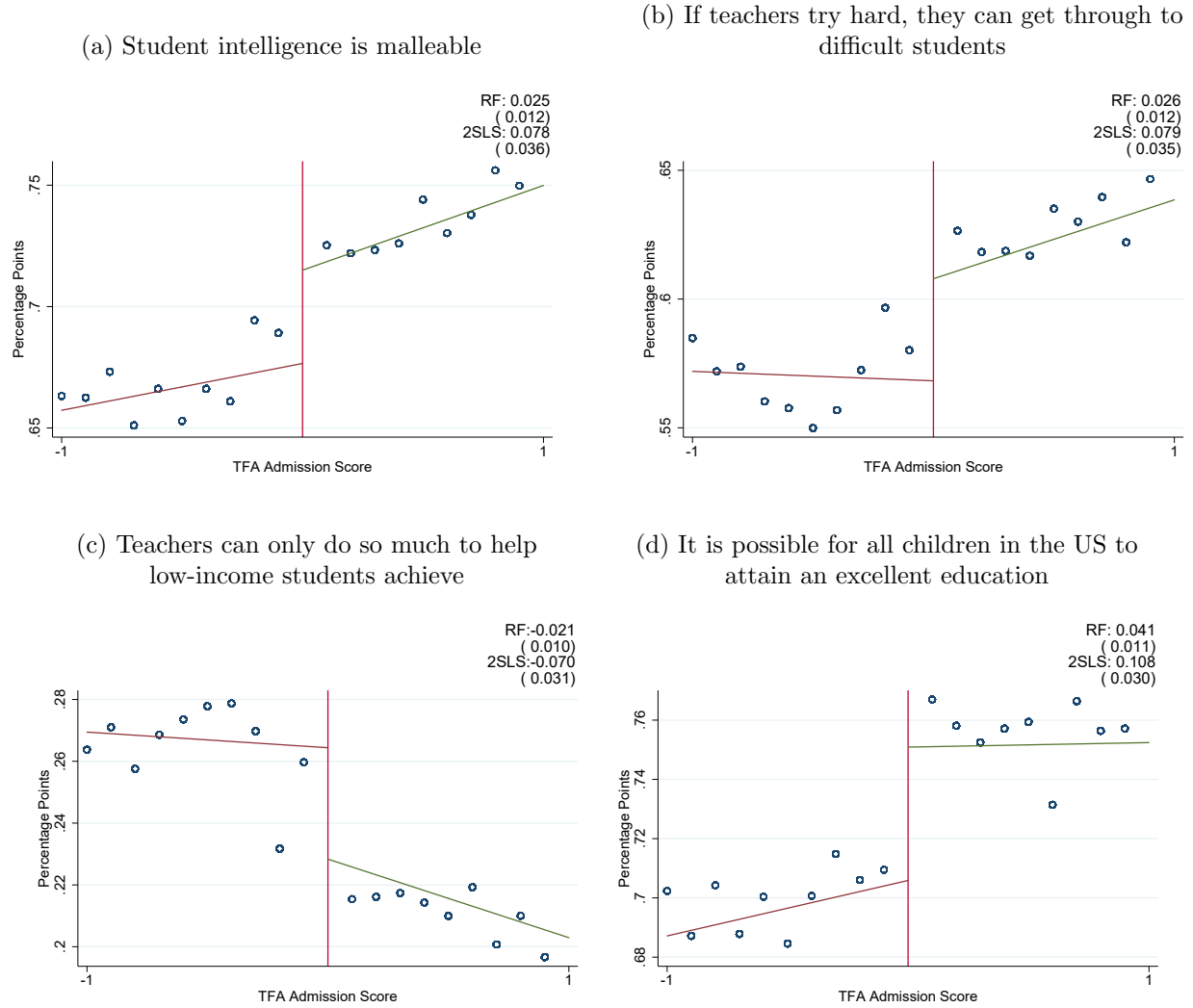


(d) Elevate the prestige of the teaching profession



*Notes:* These figures plot actual and fitted values for individuals who applied to TFA between 2007 and 2013, with the exception of the 2008 application cohort which we removed. For ease of visual comparisons across outcomes, we apply a uniform bandwidth of half a standard deviation to all outcomes. The bin size is .10. We report the reduced form (RF) estimates of the differences at the admissions threshold for each outcome, where standard errors are in parentheses.

Figure D.5: Teacher potential and optimism



*Notes:* These figures plot actual and fitted values for individuals who applied to TFA between 2007 and 2013, with the exception of the 2008 application cohort which we removed. For ease of visual comparisons across outcomes, we apply a uniform bandwidth of half a standard deviation to all outcomes. The bin size is .10. We report the reduced form (RF) estimates of the differences at the admissions threshold for each outcome, where standard errors are in parentheses.



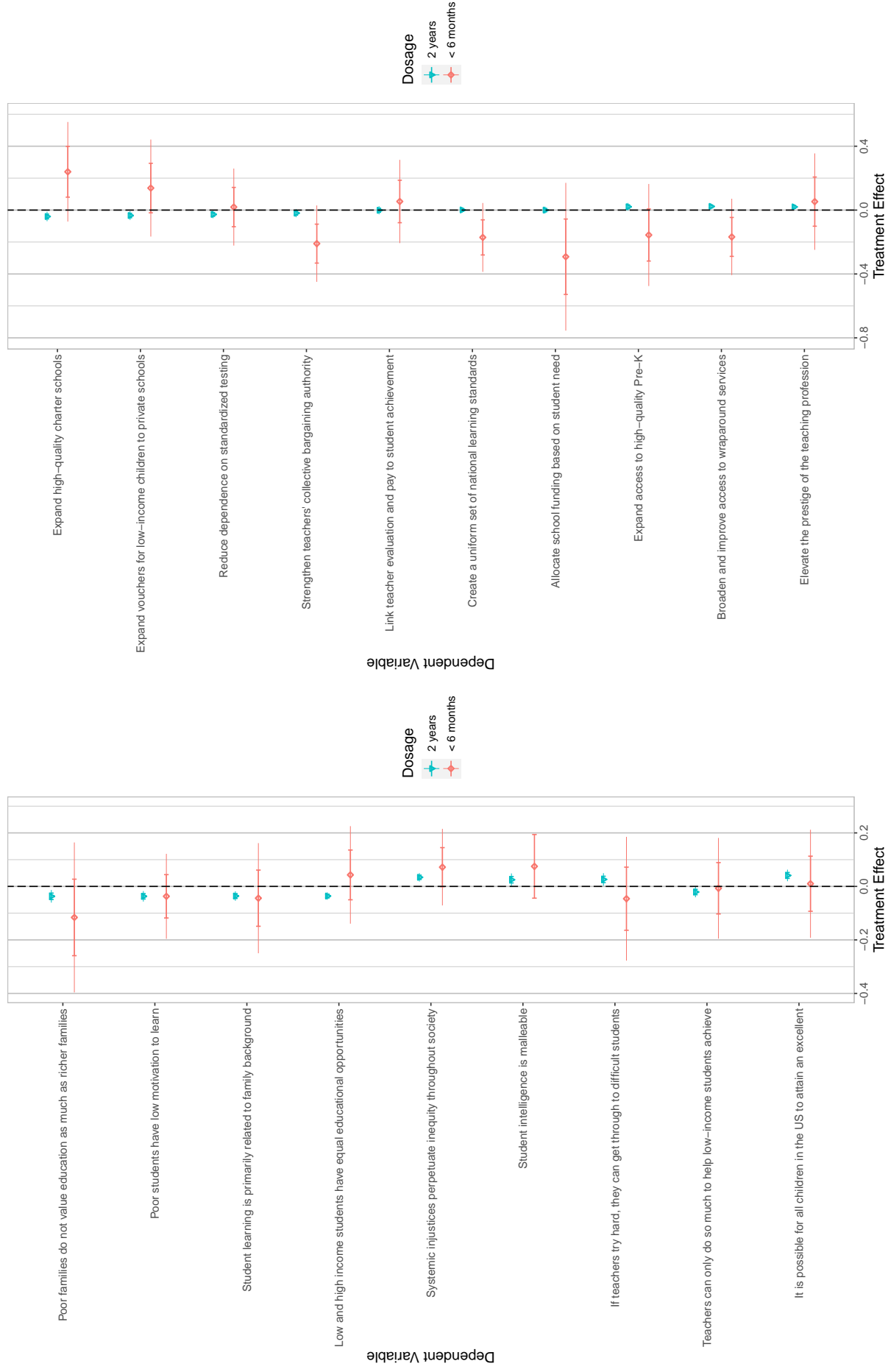
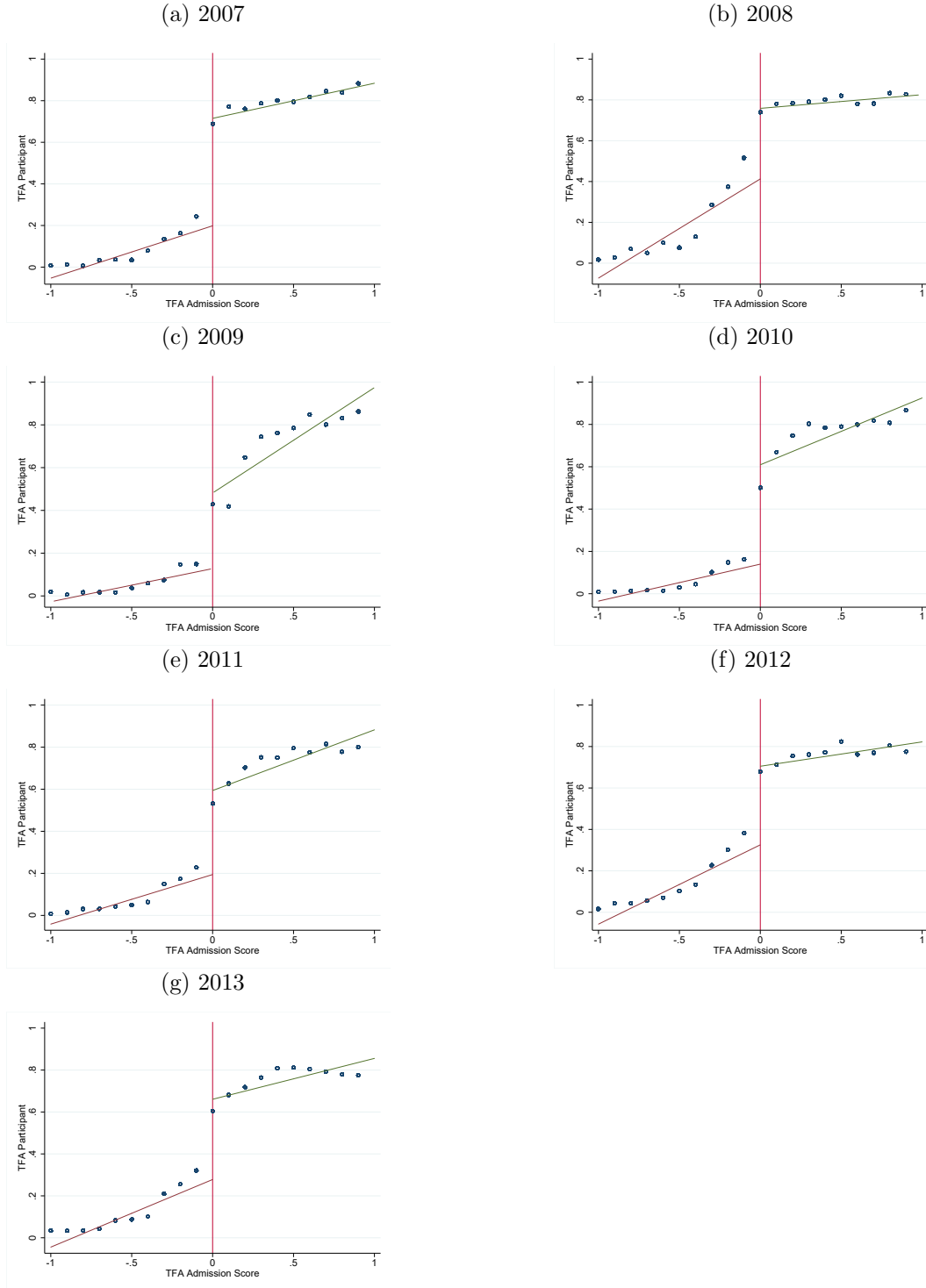


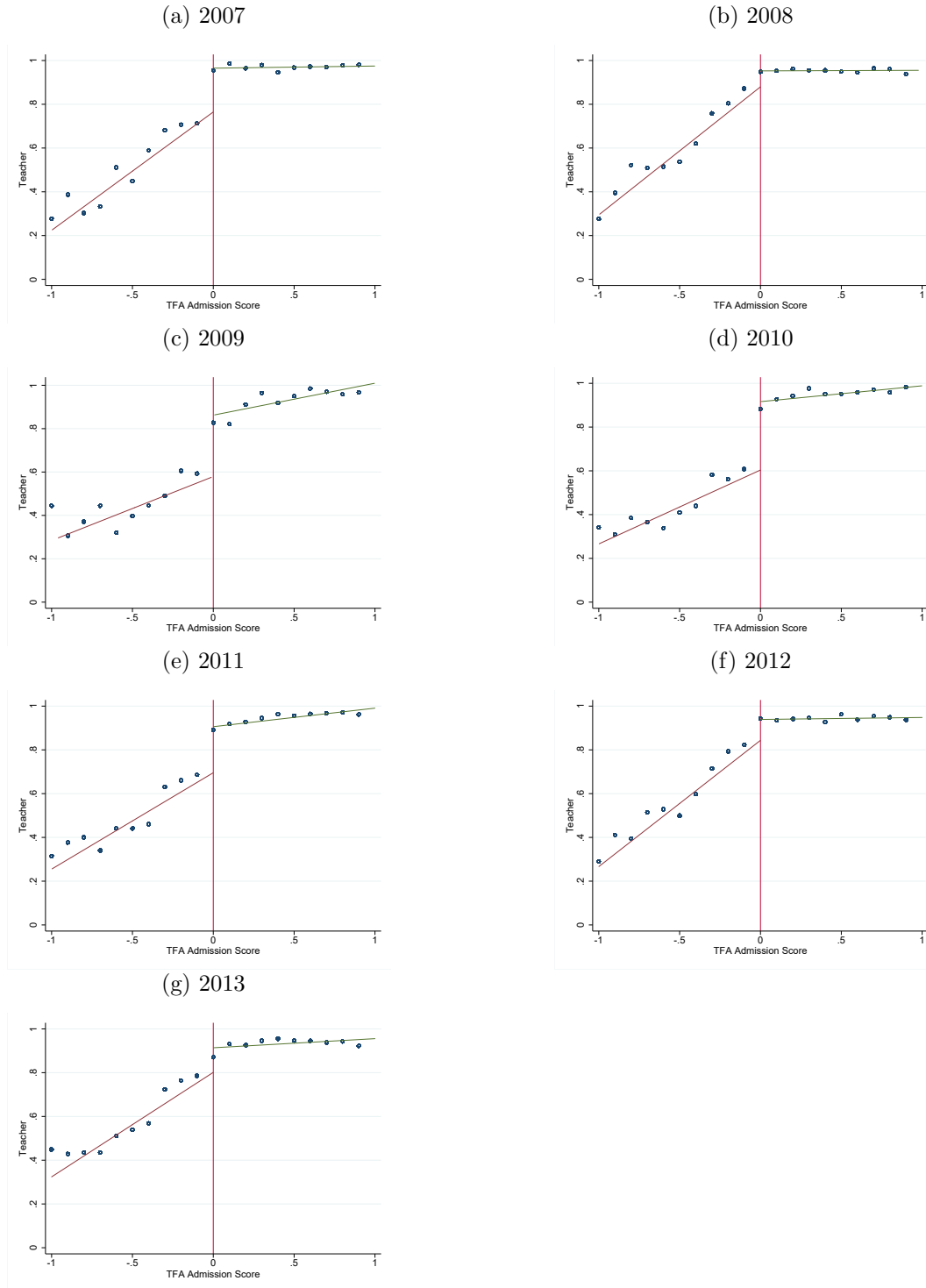
Figure D.6: Null effects for individuals with 6 months teaching experience

Figure D.7: Effect of scoring above cutoff on TFA participation, by application cohort



Notes: This figure plots TFA matriculation rates by admission score. We re-centered the admission score distribution such that zero represents the cutoff score for each year. We then standardized admission scores by year. The bin size is .05.

Figure D.8: Effect of scoring above cutoff on teaching, by application cohort



*Notes:* This figure plots the fraction of individuals who became full-time teachers (through TFA or otherwise) after applying to TFA, by admission score. We re-centered the admission score distribution such that zero represents the cutoff score for each year. We then standardized admission scores by year. The bin size is .05.

Table D.2: Reduced form effects for alternative bandwidths

Outcome	(1) Optimal BW form	(2) 1/2 BW stage	(3) 2*BW	(4) Obs
<b>Inequality in education</b>				
Poor families do not value education as much as richer families	-0.037*** (0.012)	-0.029* (0.016)	-0.052*** (0.009)	17,515
Poor students have low motivation to learn	-0.037*** (0.010)	-0.038** (0.015)	-0.042*** (0.008)	17,515
Student learning is primarily related to family background	-0.036*** (0.009)	-0.032*** (0.012)	-0.049*** (0.007)	18,876
Low and high income students have equal educational opportunities	-0.036*** (0.007)	-0.039*** (0.010)	-0.028*** (0.005)	18,939
Systemic injustices perpetuate inequity throughout society	0.034*** (0.008)	0.028** (0.011)	0.040*** (0.006)	17,525
<b>Education reform</b>				
Expand high-quality charter schools	-0.039*** (0.015)	-0.044** (0.021)	-0.031*** (0.011)	18,237
Expand vouchers for low-income children to private schools	-0.034** (0.014)	-0.029 (0.020)	-0.034*** (0.010)	18,248
Reduce dependence on standardized testing	-0.027** (0.012)	-0.034** (0.016)	-0.022** (0.009)	18,252
Strengthen teachers' collective bargaining authority	-0.019 (0.013)	-0.028 (0.018)	-0.010 (0.009)	18,227
Link teacher evaluation and pay to student achievement	-0.001 (0.013)	-0.005 (0.018)	0.010 (0.009)	18,247
Create a uniform set of national learning standards	0.001 (0.009)	-0.003 (0.013)	0.003 (0.007)	18,540
Allocate school funding based on student need	-0.000 (0.011)	-0.003 (0.015)	0.010 (0.008)	18,245
Expand access to high-quality Pre-K	0.021* (0.012)	0.034* (0.018)	0.028*** (0.009)	18,250
Broaden and improve access to wraparound services	0.023** (0.009)	0.021 (0.013)	0.025*** (0.007)	18,253
Elevate the prestige of the teaching profession	0.020** (0.009)	0.023* (0.012)	0.027*** (0.006)	18,250
<b>Teacher potential and optimism</b>				
Student intelligence is malleable	0.025** (0.012)	0.018 (0.017)	0.036*** (0.009)	17,838
If teachers try hard, they can get through to difficult students	0.026** (0.012)	0.031* (0.016)	0.035*** (0.009)	18,939
Teachers can only do so much to help low-income students achieve	-0.021** (0.010)	-0.033** (0.014)	-0.032*** (0.007)	18,878
It is possible for all children in the US to attain an excellent education	0.041 (0.011)	0.042*** (0.016)	0.043*** (0.009)	17,490

*Notes:* This table reports the 2SLS estimates for the optimal bandwidth, half that bandwidth, and twice that bandwidth. All specifications include cohort fixed effects. Standard errors are clustered at the admission score level and are in parentheses. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

Table D.3: Main results with outcome measures recoded as binary measures

Outcome	(1) Reduced form	(2) TFA participant	(3) Teacher	(4) N
<b>Inequality in education</b>				
Poor families do not value education as much as richer families (1= <i>strongly disagree</i> )	0.049** (0.020)	0.141** (0.059)	0.242** (0.102)	19,302
Poor students have low motivation to learn (1= <i>strongly disagree</i> )	0.064*** (0.016)	0.162*** (0.040)	0.285*** (0.069)	19,300
Student learning is primarily related to family background (1= <i>strongly disagree</i> )	0.049*** (0.018)	0.142*** (0.050)	0.249*** (0.089)	20,871
Low and high income students have equal educational opportunities (1= <i>strongly disagree</i> )	-0.009** (0.004)	-0.028** (0.013)	-0.050** (0.023)	20,871
Systemic injustices perpetuate inequity throughout society (1= <i>strongly agree</i> )	0.057*** (0.021)	0.163*** (0.059)	0.279*** (0.102)	19,312
<b>Education reform</b>				
Expand high-quality charter schools (1= <i>strongly agree</i> )	-0.039** (0.016)	-0.116** (0.048)	-0.201** (0.086)	20,109
Expand vouchers for low-income children to private schools (1= <i>strongly agree</i> )	-0.040*** (0.014)	-0.111*** (0.039)	-0.192*** (0.070)	20,117
Reduce dependence on standardized testing (1= <i>strongly agree</i> )	-0.001 (0.008)	-0.004 (0.021)	-0.151 (0.107)	20,123
Strengthen teachers' collective bargaining authority (1= <i>strongly disagree</i> )	0.023 (0.015)	0.070 (0.046)	0.121 (0.082)	20,095
Create a uniform set of national learning standards (1= <i>strongly disagree</i> )	0.018 (0.020)	0.050 (0.056)	0.087 (0.097)	20,095
Allocate school funding based on student need (1= <i>strongly agree</i> )	-0.018 (0.023)	-0.058 (0.074)	-0.101 (0.0130)	20,113
Link teacher evaluation and pay to student achievement (1= <i>strongly agree</i> )	-0.030 (0.021)	-0.087 (0.0611)	-0.007 (0.037)	20,118
Expand access to high-quality Pre-K (1= <i>strongly agree</i> )	0.014 (0.026)	0.047 (0.084)	0.081 (0.145)	20,122
Broaden and improve access to wraparound services (1= <i>strongly agree</i> )	0.049** (0.020)	0.140** (0.056)	0.242** (0.098)	20,124
Elevate the prestige of the teaching profession (1= <i>strongly agree</i> )	0.050** (0.010)	0.143** (0.055)	0.247*** (0.095)	20,122
<b>Teacher potential and optimism</b>				
Student intelligence is malleable (1= <i>strongly disagree</i> )	0.034* (0.019)	0.102* (0.057)	0.175* (0.100)	19,661
If teachers try hard, they can get through to difficult students (1= <i>strongly agree</i> )	0.043*** (0.015)	0.131*** (0.047)	0.232*** (0.083)	20,870
Teachers can only do so much to help low-income students achieve (1= <i>strongly disagree</i> )	0.070*** (0.019)	0.213*** (0.058)	0.374*** (0.105)	20,799
It is possible for all children in the US to attain an excellent education (1= <i>strongly agree</i> )	0.055** (0.022)	0.170** (0.068)	0.295** (0.119)	17,490

Notes: This table reports first stage and reduced form coefficients estimated using equation 2. All survey items have been recoded to binary outcomes as noted within the table. Standard errors are in parentheses. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

Table D.4: Main results (including the 2008 cohort)

Outcome	(1) Reduced form	(2) TFA participant	(3) Teacher	(4) N
<b>Inequality in education</b>				
Poor families do not value education as much as richer families	-0.028** (0.011)	-0.085** (0.034)	-0.144** (0.058)	19,302
Poor students have low motivation to learn	-0.034*** (0.001)	-0.093*** (0.027)	-0.160*** (0.047)	19,300
Student learning is primarily related to family background	-0.030*** (0.011)	-0.110*** (0.040)	-0.193*** (0.074)	20,797
Low and high income students have equal educational opportunities	-0.034*** (0.007)	-0.113*** (0.024)	-0.197*** (0.046)	20,871
Systemic injustices perpetuate inequity throughout society	0.025*** (0.009)	0.074*** (0.026)	0.125*** (0.045)	19,312
<b>Education reform</b>				
Expand high-quality charter schools	-0.026** (0.013)	-0.083** (0.041)	-0.141** (0.071)	20,109
Expand vouchers for low-income children to private schools	-0.028** (0.013)	-0.094** (0.046)	-0.162** (0.080)	20,117
Reduce dependence on standardized testing	-0.025** (0.010)	-0.072** (0.030)	-0.123** (0.052)	20,123
Strengthen teachers' collective bargaining authority	-0.025** (0.012)	-0.079** (0.038)	-0.134** (0.067)	20,095
Link teacher evaluation and pay to student achievement	0.001 (0.013)	0.004 (0.039)	0.007 (0.067)	20,118
Create a uniform set of national learning standards	-0.001 (0.009)	-0.002 (0.025)	-0.003 (0.044)	20,429
Allocate school funding based on student need	0.001 (0.010)	0.003 (0.033)	0.006 (0.058)	20,113
Expand access to high-quality Pre-K	0.021* (0.011)	0.073* (0.039)	0.128* (0.067)	20,122
Broaden and improve access to wraparound services	0.018** (0.008)	0.055** (0.024)	0.093** (0.041)	20,124
Elevate the prestige of the teaching profession	0.017** (0.008)	0.055** (0.026)	0.094** (0.045)	20,122
<b>Teacher potential and optimism</b>				
Student intelligence is malleable	0.025** (0.012)	0.089** (0.041)	0.153*** (0.072)	19,661
If teachers try hard, they can get through to difficult students	0.023* (0.012)	0.082* (0.042)	0.145** (0.075)	20,870
Teachers can only do so much to help low-income students achieve	-0.019* (0.011)	-0.071* (0.038)	-0.123* (0.065)	20,799
It is possible for all children in the US to attain an excellent education	0.043*** (0.010)	0.109** (0.025)	0.190*** (0.044)	19,268

*Notes:* This table reports reduced form estimates (column 1), 2SLS estimates where we instrument for TFA participation using the TFA admissions cutoff (column 2), and 2SLS estimates where we instrument for teaching using the same TFA admissions cutoff. All outcome measures are coded as binary where 1= Strong agreement with the statement, 0 otherwise (except whether otherwise noted in the table). Standard errors are clustered at the selection score level and are in parentheses. We calculate an optimal IK bandwidth for each outcome, and apply triangular kernel weights. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

## E Details on Study Question Wording and Coding Rules

Details of the data we received from Teach For America, as well as the original online survey administered between October 1, 2015 and March 31, 2016, are provided below. Exact question wording and information on our response recoding of question items that were recoded are provided.

### Baseline Characteristics

#### *Application Information*

1. *Application Year* - The cohort an applicant was applying for was provided. (Response Options: 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, and 2015)
2. *Admission Score* - Applicant's final admission score was provided. Only individuals who made it to the final round of the admission process received an admission score, and our target sample focused on individuals that made it to this final round only.
3. *Admission Cutoff Score* - Information on the cutoff score was provided for each application year. To combine cohorts, we standardized each year such that the cutoff is at 0, higher values indicate scoring better, and values can be interpreted as the number of standard deviations away from the cutoff the applicant was.
4. *Admission Decision* - Information on whether an applicant was admitted into TFA was provided (Response Options: 0 = No; 1 = Yes)
5. *Matriculation Decision* - Information on whether an admitted applicant matriculated into TFA was provided. (Response Options: 0 = No; 1 = Yes)
6. *Contact Information* - Up to two email addresses were provided for each applicant.
7. *Placement Region* - Information on which region matriculants were assigned to teach.<sup>7</sup>

#### *Demographic Characteristics*

1. *Age* - The applicant data provided by TFA contained information on applicant birth date information, which could be used to compute an applicant's age at the time of the survey. The survey also asked: "What year were you born?" Respondents indicated the year in which they were born, and this was recoded such that the variable indicates their age in years. For all analyses aside from descriptive analyses, the variable was coded to be between 0 and 1.
2. *Female* - The applicant data provided by TFA contained information on applicant gender. The survey also asked: "What is your gender?" (Response Options: 0 = Male; 1 = Female)
3. *Ethnicity* - The applicant data provided by TFA contained information on applicant race/ethnicity. The survey also asked: "What racial or ethnic group best describes you?" (Response Options: 1 = White; 2 = Black or African American, 3 = Hispanic or Latino; 4 = Native American; 5 = Asian; 6 = Native Hawaiian or Pacific Islander; 7 = Other (please specify:))
  - (a) *White* (Response Re-Coding: 0 = All Else; 1 = White)
  - (b) *Black* (Response Re-Coding: 0 = All Else; 1 = Black or African American)
  - (c) *Hispanic* (Response Re-Coding: 0 = All Else; 1 = Hispanic or Latino)
  - (d) *Asian* (Response-Coding: 0 = All Else; 1 = Asian)

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<sup>7</sup>The list of TFA regions are listed here: [www.teachforamerica.org/join-tfa/leading-classroom/what-where-youll-teach](http://www.teachforamerica.org/join-tfa/leading-classroom/what-where-youll-teach).

4. *Received Pell Grant* - The applicant data provided by TFA contained information on whether the applicant qualified to receive a Pell Grant (e.g., financial aid) in college. (Response Options: 0 = No; 1 = Yes)
5. *Social Class* - “When you were growing up, would you describe your family as belonging to the...?” (Response Options: 1 = Upper Class; 2 = Upper Middle Class; 3 = Lower Middle Class; 4 = Upper Lower Class; 5 = Lower Class)
  - (a) *Upper Class* - “Upper Class” (Response Re-Coding: 0 = All Else; 1 = Upper Class)
  - (b) *Upper Middle Class* (Response Re-Coding: 0 = All Else; 1 = Upper Middle Class)
  - (c) *Lower Middle Class* (Response Re-Coding: 0 = All Else; 1 = Lower Middle Class)
  - (d) *Upper Lower Class* (Response Re-Coding: 0 = All Else; 1 = Upper Lower Class)
  - (e) *Lower Class* (Response Re-Coding: 0 = All Else; 1 = Lower Class)
6. *Identify with Religion* - “What is your religious affiliation?” (Response Options: 1 = Roman Catholic; 2 = Protestant; 3 = Orthodox (Russian/Greek/etc.); 4 = Jewish; 5 = Muslim; 6 = Hindu; 7 = Buddhist; 8 = Agnostic; 9 = Atheist; 10 = Not Religious; 11 = Some Other Religion (please specify:))(Response Re-Coding: 0 = Agnostic, Atheist, or Not Religious; 1 = Any Denomination Selected or Given)

## Outcome Measures

### 1. Inequality in Education

- (a) *Students from poor communities often perform worse academically than other students in the US. How much do you think each of the following issues are contributors to the inequality in educational achievement in the US? (Response Options: 0 = Not a Contributor/Does not Occur; .25 = A Little Contributor; .5 = Moderate Contributor; .75 = Important Contributor; 1 = Main Contributor)*
  - i. Poor families do not value education as much as richer families
  - ii. Poor students have low motivation or will to learn
  - iii. Systemic injustices perpetuate inequity throughout society
- (b) *To what extent do you agree or disagree with the following statement? (Response Options: 0 = Strongly Agree; 0.25 = Agree; 0.5 = Neither Agree nor Disagree; 0.75 = Disagree; 1 = Strongly Disagree)*
  - i. In the US today, students from low income backgrounds have the same educational opportunities as students from high income backgrounds
  - ii. The amount a student can learn is primarily related to family background

### 2. Education Reform

- (a) *On a scale of low to high, how much focus should be placed on the following areas to help achieve educational equity? (Response Options: 0 = Low; 0.25; 0.5; 0.75; 1 = High)*
  - i. Expand high-quality public charter schools
  - ii. Facilitate access of low-income children to private schools (e.g., vouchers)
  - iii. Reduce dependence on standardized testing
  - iv. Strengthen teachers’ collective bargaining authority
  - v. Allocate school funding based on need
  - vi. Expand high-quality Pre-K options
  - vii. Broaden and improve access to wraparound services (e.g., counseling, nutrition)
  - viii. Link teacher evaluation and pay to student achievement
  - ix. Elevate the prestige of the teaching profession
- (b) *On a scale of 1 (low) to 5 (high), how much focus should be placed on the following area to help improve student learning? (Response Options: 0 = Low; 0.25; 0.5; 0.75; 1 = High)*



- i. Create a uniform set of national learning standards (e.g., Common Core)

3. Teacher Potential and Optimism

(a) *To what extent do you agree or disagree with the following statements?*

- i. You have a certain amount of intelligence, and you can't really do much to change it. (Response Options: 0 = Strongly Agree; 0.2 = Agree; 0.4 = Moderately Agree; 0.6 = Moderately Disagree; 0.8 = Disagree; 1 = Strongly Disagree)
- ii. In poor communities, there really is very little a teacher can do to ensure that most of his/her students achieve at a high level (Response Options: 0 = Strongly Agree; 0.25 = Agree; 0.5 = Neither Agree nor Disagree; 0.75 = Disagree; 1 = Strongly Disagree)
- iii. If teachers try really hard, they can get through to even the most difficult or unmotivated students. (Response Options: 0 = Strongly Agree; 0.25 = Agree; 0.5 = Neither Agree nor Disagree; 0.75 = Disagree; 1 = Strongly Disagree)
- iv. I believe it is possible for all children in the US to have the opportunity to attain an excellent education. (Response Options: 0 = Strongly Agree; 0.25 = Agree; 0.5 = Neither Agree nor Disagree; 0.75 = Disagree; 1 = Strongly Disagree)