

The Effect of Teaching on Educational Policy Preferences: A Regression Discontinuity Design from the Case of Enseña Chile¹

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Abstract

To what extent does working as a teacher affect individuals' beliefs about which educational policies work best? Drawing on a regression discontinuity design based on the probability of being selected to participate in Enseña Chile (ECH), a selective alternative teaching and leadership program in Chile, we find that classroom experience does affect individuals' opinions on public policies. Working as a teacher for a year or more resulted in decreased support for technical policies legislating resources or technical conditions, like classroom size, but it did not decrease the support for more complex policies related to human resources, like improving the quality of principals. This trend was observed in respondents across a range of political ideologies and current occupations, suggesting that the changes in policy opinions caused by working as a teacher are not a result of a change in self-interest or in ideology. Instead, knowledge that professionals gain from their classroom experience may have translated into preferring policies that better capture the complexities and priorities of the educational challenges they witness. These are the first estimates of the causal link between teaching and educational policy preferences. Additionally, about 80% of the Enseña Chile participants remain in an education related position, hence, their beliefs could, to some degree, influence the educational system.

JEL Codes: I21, I28, D91, H52

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1 Introduction

More than thirty-five years ago, the publication of *A Nation at Risk* spurred the discussion on how to improve educational equality, and the debate rages on. Teachers have the potential to contribute to this debate because they have practical knowledge and expertise that may not be available to policymakers. Insights gained from classroom experience comprise a valuable body of knowledge for policymakers to draw upon. However, teachers' opinions on policy may not reflect these insights because their opinions can also be motivated by self-interest or by pre-existing ideological commitments (Moe, 2011; Weeden & Kurzban, 2014; Cohen, 2003; Peterson, Henderson, and West, 2014). Being able to separate the insights derived from the experience of working in the classroom from those that exist prior to self-selection into teaching could help identify relevant information for policy design.

This paper identifies the extent to which working as a full-time teacher for one year or more affects individuals' preferences and attitudes about how to improve educational opportunities for low-income students, using a regression discontinuity design. Leveraging on the discontinuous probability of being selected to participate in a highly selective alternative teaching and leadership development program in Chile, called Enseña Chile (ECH), we use a fuzzy regression discontinuity design to analyze the effect of working as a full-time teacher for a year or more on education policy preferences among the five first cohorts of Enseña Chile applicants.

ECH selects professionals to teach in low-income schools for two years and train them in an accelerated and rigorous teaching program, in the hopes that they will improve students' learning outcomes- in a broad sense- while they teach in their two years of service, and that the experience of teaching will motivate them to become long-term champions of educational equity². To select its fellows, ECH assigns a score to each applicant and then accepts those applicants who score above a predetermined cut-off³.

The identification strategy rests on the assumption that applicants with scores that fall just below and just above the ECH cut-off score are similar, but received different admission decisions and therefore only differ as to whether they ultimately spent time teaching in

² The goal of these programs is broader, as they seek to create a movement of change agents that would engage in improving the opportunities of disadvantaged communities in their respective countries. They do this by recruiting, selecting, training, and supporting professionals who commit to teach at least two years in a school serving disadvantaged communities, in the first place, and, in the second place, by empowering a long term community of alumni who act as agents of long term change. ECH is a member of the Teach For All network (TFAll) with other organizations from more than 40 countries that also seek to create a movement of change agents in education following a similar model.

³ About two thirds of applicants to these programs have no teaching experience and hold non-Education degrees.

school classrooms. We collect the education policy preferences of all the applicants to ECH, including those who were not accepted into the program, through a web-based survey, several years after their application. Their pre-ECH similarity allows us to assume that any discontinuous variation in the policy preferences that applicants have years after their ECH application will reflect differences in their teaching experience.

To date, four studies have investigated the effect of ECH-like programs on their participants', three of which focus on a US and one on a UK program: Teach For America (TFA) and Teach First, respectively. Dobbie & Fryer (2015) is the only that measures the causal impact of the program on participants of TFA and probes its effect on general political preferences, using a regression discontinuity design. Though they find that participating in TFA impacts fellows' careers and their expectations about students' potential, the authors find no impact on the fellows' ideologies and general policy preferences. This research builds on Dobbie & Fryer (2015) study, but differs by focusing only on changes within educational policy preferences.

We find that, contrary to the common assumption that adults' policy preferences are resistant to change (Sears, 1975), classroom experience does change professionals' education policy opinions. With teaching experience, individuals show a decrease in the support for technical policies legislating objective conditions, like classroom size, but they retain their support for policies that implement solutions related to the human capacity of the system (also called "adaptive" solutions by Heifetz, 1994), like bettering the quality of principals.

Generally speaking, individuals' policy preferences are resistant to change (Klapper 1960, Sears 1975, Krosnick et al, 2010), and this stubbornness is even more pronounced in the case of concrete technical solutions. Individuals tend to value technical solutions because of the natural proclivity of humans for decreasing uncertainty and finding concrete answers (Heifetz and Laurie, 1997). In addition, technical policies such as decreasing classroom size and increasing school resources are usually supported by teachers (Moe, 2011), and, therefore, one could expect teaching experience to correlate with the magnitude of preferences for those policies. Thus, the counterintuitive findings about the effects of classroom experience that we present here highlight the importance of identifying what portion of their support for a policy comes from information from the field, as well as the importance of advancing our understanding of policy attitude formation in education.

Furthermore, we observe that individuals with classroom experience who are no longer teaching demonstrate the same policy preference pattern, suggesting that these preferences are not merely self-interested. We also observe that professionals from both liberal and conservative family backgrounds show decreased preference for technical solutions, suggesting that this trend in experienced opinions is independent of pre-teaching ideology.

Experience in the classroom may have given them access to knowledge on what works and what is most needed to improve educational opportunities of low income students. This knowledge may help explain why they lessen their support for reducing classroom size or increasing external social services and why they maintain or increase, instead, their preferences for policies that more adequately reflect the complexity of the challenges of the education system.

An exception to this line of policy preferences is the opinion ECH applicants reported about improving teacher quality. Individuals with teaching experience seem to evaluate “increasing teacher quality” as less effective than do non-teachers. However, despite this relative decrease, this policy remained the highest rated policy among both groups.

The findings of this paper contribute to the growing literature on education policy opinion formation and change. It explores policy preferences in a new setting (Chile), brings evidence on the impact of professional experience on attitude formation, and investigates a group of professionals (teachers) in new ways. There is little evidence documenting experience impacting policy attitudes, particularly less evidence on how teachers form their policy attitudes. Most of the available studies suggest that the impact of experience is almost non-existent when accounting for more important predictors such as political ideology or party identification (Egan & Mullin, 2012; Lau and Heldman, 2009; Sears and Funk, 1991). Thus, this paper strengthens our understanding of what is learned from having first-hand experience in the classroom.

The formation and change of ECH participants’ policy opinions is particularly relevant because their chances to occupy leadership positions where they can influence the education system are high. For example, after completing the program, more than 10% of the alumni have worked in a policy relevant position, like the national Department of Education, until 2016. About 30% were still in a k-12 teaching position. In addition, they created 24 social startups in five years. In total, 80% of alumni of the program were still working in an education related position at the time of the survey. Thus, the alumni’s opinions on how to improve educational opportunities will likely influence the educational system in the long term. Even if the participants weren’t going to occupy leadership positions, their changes in policy preferences may impact policy makers who pay attention to public opinion (Burstein, 2003).

Taken together, these results are relevant to understand how teaching experience can change the understanding and beliefs of teachers, leaders, and the general public on what is more needed and more efficient to increase opportunities of students from low-income backgrounds, and how this could shape the education system.

The paper is organized as follows: we begin in Section 2 by reviewing the mechanisms for attitude change. Section 3 discusses the education policies that are analyzed and how they are organized as technical or adaptive solutions (following the Heifetz framework). In Section 4, we introduce the questions underlying this research, and briefly review what other researchers have found in the process of evaluating the impact of programs similar to ECH. Section 5 presents an overview of Chile, ECH and its selection process. Section 6 describes the survey we distributed, the recruitment process for the study, and the demographic of the final sample. Section 7 details the analytical strategy. Section 8 documents my findings, and Section 9 ends with the discussion and conclusion.

2 Mechanisms for changing policy preferences during the teaching experience

Policy preferences are generally stable for the duration of adulthood (Krosnick et al, 2010). In this section, we describe the most salient causes of change to individuals' policy opinions and discuss whether they generally apply to college graduates⁴ who have just begun to teach. These key mechanisms are change in self-interest, change in the affection to a group, change in political ideology, and change in knowledge. Other typically predictive demographic characteristics are unaffected by classroom experience, so they will not be discussed here.

2.1 Shift in self-interest

We might expect self-interest to motivate an individual's public policy preferences. If this were the case, an individual may change policy preferences when his or her conditions change. In particular, becoming a teacher could lead policy attitudes to change because they align to a new set of needs or interests as a teacher, instead of representing an insight of what works better in the classroom (for example, a teacher may support a salary increase independent of how effective she thinks it is for her students, Moe, 2015).

Researchers generally do not consider individuals' self-interest, defined as "the pursuit of immediate material benefits for oneself" (Krosnick, Visser and Harder, 2010, p.1307), as a relevant predictor of policy preferences, unless policies have unusually *large, salient*, and *certain* impact on individuals' private interests, such as cigarette taxes on smokers (see Krosnick et al, 2010, and Sears and Funk, 1991, for reviews). This exception ostensibly applies to teachers' relationship to education policy, since many policies have large, salient, and certain impacts on teachers' lives. For example, public policies may affect teachers' wages, working conditions, job security, and job resources. In fact, Moe (2011, 2013, 2015)

⁴ Typical college graduation age is 24 years old in Chile. Traditional programs last 6 years.

claims that teachers' policy preferences are strongly motivated by self-interest. Moe argues that teachers generally support policies that benefit them personally regardless of the impact those policies could have on low-income students' opportunities. In particular, Moe furnishes the examples of policies that reduce class size and protect teachers from being fired (2015).

In sum, while self-interest may not play a key role in individuals' opinion of policies that have no salient effects on their immediate well-being, it may indeed play a key role in teachers' opinions about education policy. However, having teaching experience may affect policy for other reasons beyond being merely motivated by self-interest as a teacher. We will describe below other channels through which this change may occur. In addition, in order to identify non-self-interested change in policy preferences caused by working as a teacher, this study will compare whether changes in the subgroup of erstwhile teachers who are no longer teaching and who never attained degrees in education differ from the changes in the subgroup for whom policies may affect them more saliently.

2.2 Shift in group affection

While political scientists assert that self-interest is not a significant determinant of policy preference, they agree in that *group* interest, by contrast, is (Krosnick et al, 2010). An individual could be motivated to advance the interests of a group depending on his or her affective relationship to the group (Brady and Sniderman, 1985). Advancing the interest of a group could be just another mode of self-interest (Weeden & Kurzban, 2014), or instead, as Haidt (2012) sees it, a form of self-sacrifice.

We choose to consider group affection independently of self-interest because affection to a group can influence individual opinions through channels other than self or group-interest: namely, by serving as a reference and by framing the political landscape for individual members (Krosnick et al, 2010, Brady and Snyderman, 1985). In this sense, an individual could shift his or her policy preferences to align to those of a group he or she values, independently of the benefit or result of the policy. This is more likely to occur when the individual has low information about an issue and no time or no interest to invest in finding information about it. The opinions of a valued group are used as a reference or shortcut for the individual's opinion (Hall, Varca & Fisher, 1986).

Newcomb (1943) documented the canonical example of a social group that served as a political reference group. He followed initially conservative young women as they pursued a bachelor's degree at Bennington College. He observed their policy preferences and ideologies shift towards those of their new reference group (i.e., professors and older students). The students ultimately became strong liberals and remained strong liberals after graduation and for the rest of their lives (Newcomb, Koenig, Flacks, & Warwick, 1967).

This first suggestion of the weighty impact of a group on policy opinions was later confirmed by experimental studies (Hall, Varca, & Fisher, 1986; Cohen, 2003).

Like Newcomb's students, individuals who begin to teach can develop affective relationships with groups that may not have been in their lives before. These groups are students and fellow teachers. New teachers who develop a positive affection or identification with teachers may change their policy preferences in two ways: (1) by increasing support for policies that benefit teachers (even when they no longer work as teachers) or (2) by aligning their policy preferences with those held by teachers because of socialization with teachers and increased value in their opinions.

It would present a problem for policy-makers who consult with experienced teachers to learn that the influence of the student group on teachers is less salient than is that of the peer teacher group. However, we have no way to test if individuals shift preferences to promote policies that benefit teachers more than their students. Yet, we can observe if they increase the value they give to teachers' policy opinions. If we observe an increase in the value towards teachers' opinion after having experience in the classroom, we could not rule out whether the shift in policy preferences was influenced by a change in the affection to teachers.

2.3 Shift in political ideology

Among all possible groups that an individual could have as reference, political and ideological groups comprise a particularly influential one. In fact, political identification is one of the most important predictors of individuals' policy preferences (Krosnick et al, 2010). Several pieces of experimental evidence suggest that individuals consistently evaluate policies following cues from their party of choice and from individuals of similar ideological leanings (Cohen, 2003; Hall et al., 1986; Krosnick, Visser, & Harder, 2010; Polikoff, Hardaway, Marsh, & Plank, 2016; Howell, Peterson & West, 2009). Political ideology as an implicit group has been found to be more powerful than other groups in predicting political preferences (Ladd & Wilson, 1983). Furthermore, political cues can outweigh the implications of objective information; even after individuals receive knowledge that corrects misinformation about an issue, their original opinion may not change if the new information contradicts the one of their political or ideological identification (Hochschild, 2001; Hoschild and Einstein, 2015 for a review; Clinton and Grisson, 2012; Nyhan & Reifler, 2016).

Some argue that the tight correlation between ideology and policy preference is unsurprising given that individuals identify with the ideological system that best represents their policy preferences to begin with (Weeden & Kurzban, 2014; Carsey & Layman, 2006). However, in the majority of cases, political identity may have given rise to specific

policy preferences instead of the other way around. There is strong evidence that ideological and party identification typically occurs early in life, while most policy conundrums are encountered much later. In fact, parental political ideology is the strongest predictor of an individual's personal ideology (Jennings and Niemi, 1978, Campbell, Converse, Miller and Stokes, 1960), which suggests that party identification occurs largely through family socialization. Other researchers who study twins claim an even earlier establishment of political ideology: they suggest that ideological proclivities may indeed be genetically predetermined (Smith et al, 2012, Fowler, Baker and Dawes, 2008). Regardless of how exactly ideological identification initially occurs, it appears to occur early, to remain stable throughout adulthood⁵ (Bartels, 2000), and to powerfully influence policy attitudes later on (Krosnik et al, 2010). In summary, it is generally difficult to convince individuals to dissent from the common opinion of their political and ideological groups.

The importance of political identification on individuals' policy preferences suggests that a change in policy preferences following classroom experience should result from a change in ideology. We hypothesize, however, that classroom experience does not typically change ideological identification. Instead, we hypothesize that, despite the strong ties between ideology and policy preference, classroom experience impacts what individuals believe will benefit students regardless of their political ideology; affecting opinions of liberal and conservative groups alike without changing their fundamental political identities. These changes in policy opinion may be driven instead by changes in non-ideological beliefs, particularly, by acquiring knowledge from the field that they did not have access to before or that they had not paid attention to until they experienced it first-hand.

2.4 Shift in knowledge

Citizens who gain teaching experience may change their opinions on policy solely because of the insights they gained over the course of that experience, in which case their policy preferences would reflect information about how schools work or what students need for learning.

⁵ Newcomb's (1943) study on the Bennington College students and other studies showing that party identification can be shaped during college years (Ghitza & Gelman, 2014), also called "the impressionable years", does not contradict that this identification remains stable for the rest of adulthood. In particular, applicants to the ECH program have passed the key stages of political ideology identification at the time of the application to the program. Applicants must have completed college to apply and the duration of college programs in Chile covers two more years than in the US. There is still, however, a debate on whether data showing that older voters tend to identify more as Republicans is evidence of party identification evolving during adulthood or is, instead, reflecting a generational change (Ghitza & Gelman, 2014)

Individuals who teach may abandon their initial positions on what will improve educational opportunities if the insights they gain from the teaching experience are too costly to acquire, inaccessible, or outside of the classroom (at least for them). Moreover, individuals who teach may revise their opinions based on information concerning education that is universally accessible (e.g., through books, research, or public testimonies) but which they had nevertheless ignored or disbelieved because they hadn't experienced the documented conditions first-hand.

There is evidence to suggest that access to information may lead individuals to change their opinions on education policy (Howell, Peterson & West, 2009), but it appears far more common for citizens to reject information that challenges their standing beliefs (Hoschild & Einstein, 2015). Researchers have found that citizens generally resist changing their opinion. When confronted with undesirable information, individuals tend not only to maintain their original position, but indeed tend to report *increased* certainty about their original formulation—a phenomenon that researchers have called “the backfire effect” (Nyhan & Reifler, 2010).

Knowledge gained through experience, however, can be more difficult to resist (Olsen, 2016). First-hand experience with rising temperatures, for example, has led citizens to support environmentally friendly initiatives (Owen et al. 2012). Thus, it is possible that, even when an individual has already been exposed to accurate information, getting that knowledge first hand through working for one year or more as a full-time teacher might motivate that individual to revise her education policy preferences.

Of particular importance to education policymakers are those insights gained about whether it is possible at all for schools to increase opportunities for low-income students. Some education experts foster a discourse of low school efficacy. They contend that individual schools and teachers cannot personally help to ensure opportunities for students from low-income communities unless poverty more broadly is addressed first. These schools of thought propose solutions that focus less on schools and more on out-of-school conditions—for example, they would favor focusing on improving social services over improving the quality of principals (Ravitch, 2013; Rothstein, 2008).⁶

On-the-ground classroom experience, and especially experience in classrooms that serve low-income communities, may shed light on whether schools are indeed capable of improving the opportunities for students under extant conditions. There are two salient possibilities. Individuals may find that teaching at schools that serve low-income

⁶ The “Broader, Bolder Approach” is one of the initiative calling for attention on issues external to schools—starting from preschool to dentists, however, they also maintain a focus on within-school issues, demanding solutions to attract better teachers and leadership (Noguera, 2011). Thus, this is not an example of the groups described above.

communities is hopelessly challenging, and they may therefore focus on promoting policies that ameliorate broad social conditions rather than on policies that work within the purview of the school system. On the other hand, if individual teachers discover that they are personally capable of positively impacting their students regardless of current social conditions, they may promote policies that help other teachers to do the same.

The split described above would logically index the increase or decrease of teachers' perceived self-efficacy. "Perceived self-efficacy" refers to the beliefs people harbor about their own capacity to achieve designated levels of performance (Bandura, 1994). Bandura has shown that beliefs about self-efficacy influence coping behaviors, perseverance, and even information processing. Individuals with increased perceived self-efficacy may be inclined to value policies that foster human involvement in the educational system, since believing that they are personally capable of improving the educational opportunities of students could lead them to believe that others like them are as well.

We hypothesize that individuals who gain first-hand experience in the classroom will display greater perceived self-efficacy as teachers than professionals who did not have teaching experience. This self-efficacy could reflect first-hand knowledge of what teachers in the classroom are presently capable of achieving. However, it is also possible that a difference in self-efficacy is due to a decrease in self-efficacy by those applicants who haven't had an opportunity to teach. Low self-efficacy, then, may only reflect the objective fact that an individual has not been able to have an occupation that can influence education. This study does not identify where differences in self-efficacy come from.

Finally, individuals' policy preferences may reflect any concrete knowledge gathered through the experience of teaching. Changes in policy preferences not motivated by any of the channels described earlier are very likely to represent knowledge acquired from the teaching experience.

3 Categorization of Educational Policies

For the purposes of this study, we categorize policies as solutions intended to remedy either simple or complex problems. we call these policies *technical* and *adaptive* respectively in accordance with the concepts developed by Heifetz in his research on "adaptive leadership" (Heifetz, 1994).

Heifetz (1994) initially proposed the classification of solutions as either adaptive or technical in the context of his research on leadership and adaptation to difficult problems. Heifetz terms "technical solutions" those solutions that are clearly delimited and measurable; technical solutions are usually designed and/or provided by an authority.

These solutions address concrete, finite problems. “Adaptive solutions,” by contrast, take as their end-goal the development of human capacity and leadership; the elucidation of a communal vision; and/or the evolution of values, beliefs, or habits. Heifetz defines adaptive solutions as the only solutions capable of addressing complex, systematic problems. Adaptive solutions rely on the empowerment of individuals at various points in the educational system; all of whom must be equipped to “learn their way into solutions” (Heifetz and Laurie, 1997, p. 124).

An example of Heifetz’s adaptive approach is the development of what Stone, Henig, Jones, and Pierannunzi (2001) refer to as “civic capacity” in a school district: the coalition of social and political actors in an urban community that are required to improve their local educational system. These authors propose that without civic capacity, it is not possible to improve a local educational system. This strategy calls for a focus on leadership from teachers and families, as opposed to technical solutions such as decreasing classroom size or securing more funding.

Heifetz’s framework is useful in evaluating potential avenues for improving education. Increasing the educational opportunities of disadvantaged children can be perceived as an *adaptive* rather than a *technical* challenge, and therefore as one that requires *adaptive* solutions. However, individuals tend to favor technical solutions because humans are naturally disposed to seek concrete answers and to decrease uncertainty (Heifetz and Laurie 1997). Heifetz argues that in order for stakeholders to embrace uncertainty and depart from technical solutions they must have a transformative experience. Transformative experiences, such as teaching in an under-resourced school, can develop a deeper understanding of the complexity of educational inequity. Moreover, they may allow new teachers to discover what individuals are capable of achieving under current social conditions and within extant institutions. In this way, professionals who gain first-hand experience in the classroom and who experience some measure of success with their students may become aware of the limits of technical solutions and may come to value adaptive solutions instead.

This study will examine whether individuals’ education policy preferences tend to shift toward technical or adaptive solutions after teaching for at least one year. Although by no means comprehensive, the following group of policies represents a good balance of technical and adaptive solutions, each of which has arguable potential to benefit the education system and each of which has proven popular among the general public:

- Reduce classroom size
- Improve infrastructure
- Increase school funding
- Improve social services to the poor (health, nutrition, etc)

- Improve teacher quality
- Improve principal quality
- Focus efforts on encouraging teachers, principals, and parents to believe in their students' potential
- Empower parents to give support and demand better education for their children
- Promote integration of students from lower and higher economic backgrounds in schools
- Facilitate the replacement of ineffective teachers

Most of these policies have been proven at least somewhat effective at improving educational outcomes in developing countries (see McEwan, 2015; Glewwe & Muralidharan, 2015), and they have all been proposed as solutions by a diverse array of stakeholders in the education system in both Chile and the US.

Seven of the ten strategies on this list were drawn from a Teach For America (TFA) study (TFA, 2005), a partner of the Teach For All network. In its study, TFA offered a list of 15 strategies from which respondents selected the five they felt to be most crucial in closing the education achievement gap across socioeconomic lines. We included the half most popular strategies on TFA's list (the seven first). The three most commonly selected strategies in the TFA study concerned the quality of staff: "higher quality teachers," "increased common belief in the potential of students in low-income communities," and "higher quality principals." Behind those four in popularity were "decreasing classroom size," a policy historically demanded by teachers in Chile and the US alike; "improvement of social services," a proposal that suggests that the education system requires external conditions to be ameliorated in order to improve (Rothstein, 2008; Ravitch, 2013); and "increasing funding," a typical concern that the general public in the US has mentioned as the most pressing problem in education for several years (Bushaw & Lopez, 2012). In addition, the TFA list of potential strategies included "empower parents to demand a better education for their children," a solution that has received increased media attention in recent years and which aims to strengthen the civic capacity of the education system (Stone et.al, 2001).⁷

In addition to this long list of initiatives proven popular by the TFA study, we chose to include strategies that had been discussed over the course of the previous year in the Chilean media: "decreasing socioeconomic segregation in schools" and "facilitating the replacement of ineffective teachers." Finally, we included "improving school

⁷ Many initiatives aligned with this intention have been developed in recent years (see York & Loeb, 2014; Parents College in LA is a landmark initiative, and many education advocacy groups representing parents are doing similar work).

infrastructure” because it is a technical strategy commonly proposed in developing countries.

4 Impact of Enseña Chile-like programs

To date, four studies have investigated the effect of ECH-like programs (those partner organizations from the Teach For All network) on their participants. Three of these studies focus on the US and one on the UK, and only one study examines changes in attitudes about education policy specifically, though it doesn't provide causal evidence.

The most recent study analyzes the UK program, Teach First. Allen, Parameshwaran and Nye (2016) examine the effect on career tracks of Teach First’s Leadership Development Programme by comparing participants that choose to remain teaching in state-funded schools after the two-year teaching program with participants of full-time Post Graduate Certificate in Education (PGCE) programs at Higher Education Institutions. The study uses a fuzzy matching technique on background characteristics. Main findings of this study are that Teach First teachers were more likely to progress to leadership positions in schools and to teach in schools serving low income communities compared to teachers from other training routes. The study does not address the effects of the program on participant’s policy preferences.

The first endeavor to explore the policy preferences of Teach For All members came out of an exploratory study led by Teach for America (2005). The authors of the study surveyed TFA fellows from three different cohorts and observed that subjects’ belief in the importance of certain strategies for closing the achievement gap differed depending on the time the fellow had spent in the teaching program. Fellows’ investment in increasing funding for schools lessened in more experienced cohorts, whereas their emphasis on improving the quality of principals increased. The TFA study, however, did not claim that these comparative differences between cohorts were due to the respondents’ experiences in the classroom. The trends may have been indexing skewed participant attrition and/or variable response rates, both conditions that render the various cohorts’ respondents dissimilar. Moreover, the authors did not discount the possibility that these changes in opinion were altogether unrelated to teaching, since they had no control group of non-teachers. The current study tests whether the changes in policy preference observed in the TFA exploratory study are indeed the result of classroom experience.

McAdam & Brandt (2009) investigated the level of civic engagement of TFA alumni by comparing it to that of two other groups: those who dropped out of the program and those who were selected for TFA but rejected the offer. The authors report that TFA alumni were more likely than the control groups to be involved with the education sector but were less

likely to be involved in general civic activities such as participating in political campaigns or in sport leagues.

The study conducted by Dobbie & Fryer (2015) is the only study to date that measures the causal impact of the program on participants and probes its effect on political preferences. The authors investigate participants' beliefs using a regression discontinuity design. Their findings confirm McAdam & Brandt's (2009) findings that participants were more likely than their peers to be involved in the education sector after completing their tenure with TFA. Participants also showed increased academic expectations of racial minorities and, relatedly, decreased implicit racism. Dobbie and Fryer also explored TFA's effect on participants' general political beliefs (such as ideological identification and their support for spending on specific social policies). They found that TFA had no significant impact on these general political beliefs, supporting the findings cited earlier, that individuals' underlying political beliefs are difficult to change.

Neither Dobbie and Fryer nor McAdam and Brandt measured whether participants' opinions on education policies changed as a result of their time in the classroom. Participants' opinions on education policies could be more prone to change than are their general political beliefs because of the specificity of the teachers' professional experience. Hence, it is worth evaluating the impact of the program on participants' opinion around education policy.

The current study builds on the work done by Dobbie and Fryer but departs from it in two key ways. First, like Dobbie and Fryer, we assess the impact of working as a full-time teacher for a year or more, using a regression discontinuity design. However, we do so in an area that has never been explored but which is a key aspect of social change: namely, attitudes about education policies. To the best of my knowledge, this is the first paper to study the effect of working as a full-time teacher on beliefs about education policy. As we discuss below, my findings have broad implications for our understanding of what shapes education policy preferences and can also help inform strategies for achieving consensus on policy issues. Second, unlike Dobbie and Fryer, we study the effects drawing on information from ECH, a program that hasn't yet been studied.

Though individual policy preferences are difficult to change, if they do they are likely to be triggered by changes in self-interest, group identification, ideology, and/or knowledge about how to improve opportunities of low income students. In light of these mechanisms, this study addresses the following questions:

1. Does working as a full-time teacher, for a year or more, impact individuals' policy preferences regarding quality and equity in education? If so, how are those policy preferences impacted? Will individuals tend to favor technical or adaptive policies?

2. What are potential mechanisms behind the changes in policy preference?
 - a. *Self-interest*: Are impacts on policy preferences observable among individuals with no potential conflict of interest resulting from personal involvement with education (such as those without degrees in education and those who no longer teach)?
 - b. *Group affection*: Are changes in policy preferences potentially due to changes in the affection for teachers? For example, do individuals value other teachers' opinions more after having classroom experience?
 - c. *Political ideology*: Is a change in ideology a plausible explanation for shifts in policy preferences? In particular, do individuals' political identifications change as a result of their experience in the classroom as full-time teachers? Does ideology continue to affect an individual's preferences for adaptive vs. technical policies after the individual has gained classroom experience?
 - d. *Knowledge*: Is there evidence of differences in knowledge between those with and without classroom experience? For example, do individuals with classroom experience hold greater self-efficacy? In other words, do evolutions in personal beliefs about their capacity to make change in education help explain shifts in policy preferences?

Chile is an interesting case study because it is in the midst of vibrant debate about educational policy. This study examines the effect of teaching on policy opinions in a population that is already saturated with information about education and in which diverse policies intended to reform the educational system are under constant discussion. In addition, the Chilean context is of interest because, as is the case with the programs of the Teach For All network in over 40 additional countries, ECH in Chile is fairly new and has the potential to considerably influence the education debate and the policy decisions that result from it, so research of this kind has the potential to be especially valuable.

5 Overview of Enseña Chile

5.1 Chile

This section offers a brief introduction to the Chilean education system, the political landscape of education reform at the time the survey, and trends in Chilean teachers' opinions on certain reform strategies.

The education system in Chile is the highest scoring in all of Latin America, as revealed by the TERCE 2013 and PISA 2015. However, it performed poorly compared to OECD countries and was also shown empirically to suffer from the most inequity (OECD 2013):

Chileans from the lowest socioeconomic quintile performed two and a half school years below their peers from the highest socioeconomic quintile. The school system's funding is also comparatively poor; although Chile has increased its investment in education in recent years, funding levels for education are still below the US and the OECD average (World Bank, 2012). Despite the system's shortcomings, Chile's public school system has low dropout rates, and virtually all children have access to a school, even those living in remote rural areas.

Since 2011, Chile has been hit with a number of education demands from the public, and the public outcry has triggered various education reforms. In 2014, the discussion centered on legislation aimed at decreasing socioeconomic segregation in schools, legislation that 48% of the general public at the time disapproved (Adimark 2016). In 2015, two additional policy reforms were discussed: one to provide tuition-free higher education, and the other to reform teaching contracts.⁸

The latter of these initiatives proposed a new structure for funding teachers' salaries that would readjust the weighting of teacher evaluations and experience. It also proposed to increase the selectivity of education schools where aspiring teachers are trained and earn their teaching certificates. The teacher's union, for its part, demanded smaller classroom sizes. These reforms were passed into law in the midst of the current study's data collection process.

An unprecedented survey of a nationally representative sample of Chilean teachers in December 2015 (Voces Docentes 2015)—that is, a survey collected just before the teacher reform was passed by Congress—offers a window into Chilean teachers' opinions about education reform. The survey results revealed that teachers' opinions are highly diverse. For example, about a third of Chilean teachers supported the use of teaching evaluations to determine salary, and another third opposed it. When asked which one issue the government ought to prioritize given increased education funding, respondents were evenly split between the three offered choices: decreasing the maximum classroom size (presently 45 students), decreasing the teaching time required of full-time contract-holders (presently 40 hours), and increasing teachers' salaries.

In contrast to the position of the teachers' union in Chile, the findings of Voces Docentes show no clear trend on teachers' preferences in Chile. Still, it is not possible to identify if any of these preferences is a result of the knowledge gathered from the classroom experience, or other sources.

⁸ In Chile, teaching contracts are negotiated directly with the national government.

5.2 Enseña Chile

Enseña Chile (ECH) is an independent not-for-profit Chilean organization founded by Chilean social entrepreneurs out of a grass-roots initiative which shares a common vision, mission and unifying principals with other partners of the Teach For All network. In their own word “Teach For All is a global network of 45 independent, locally led and governed partner organizations and a global organization that works to accelerate the progress of the network”⁹. All network partners, like ECH, “recruit and develop promising future leaders to teach in their nations’ high-need schools and communities and to work with others, inside and outside of education, to ensure all children are able to fulfill their potential.”

ECH is relatively new and it is a competitive program. As of 2016, the year of the present study, seven cohorts had begun teaching under the auspices of ECH. Since its first year in 2008, annual admittance rates have ranged between five and ten percent. The first cohort was composed of 29 fellows selected from a pool of around 700 applicants (See Table 1). In 2015, ECH selected about 120 fellows from a pool of over 2,000 applicants. ECH concentrates recruitment efforts on science and engineering majors; however, applicants hail from a wide range of disciplines, including education. Approximately a third of applicants have education degrees (i.e., teaching certificates). Between 12 and 17% of teachers in each cohort have education degrees.

[Table 1 about here]

ECH Selection Process

ECH adapted its selection process from Teach for America’s 2007 selection process, which is described in Dobbie and Fryer (2015). Since its inception, ECH has adjusted its selection criteria based on ongoing internal research, in order to determine which and how to measure applicants’ qualities involved in the selection and how to weigh them, in turn to select the applicants that better reflect abilities a teacher should have. Figure 1 shows the stages of the selection process between 2008 and 2014. During the first three stages, participants are scored on several dimensions of their application. The score is updated at each stage. At the final stage, the Interview Day, applicants are assigned a final selection score.

[Figure 1 about here]

For the purpose of this study, we will describe the stage of the selection process that assigns the final selection score to the applicants and determines whether to issue an invitation to join ECH or not: The Interview Day. Based on online applications similar to those required

⁹ <https://teachforall.org/en/about/what-we-do>

by graduate studies in the US, ECH selects the applicants who are invited to complete a series of in-person activities during what is known as Interview Day. There, applicants deliver a sample teaching lesson, lead a group discussion, undergo a cognitive test, and give a personal interview. Applicants are randomly assigned to “reviewers” who rate them on various competencies during each activity and submit their scores online via private software. The final selection score is calculated by assembling a weighted average of each competency score, which are, in turn, based on in-person performance and scores from previous stages of the application process if available. The weights accorded to each application component are developed using the experience of TFA and ECH (details in Dobbie and Fryer, 2015), and they are kept secret in an effort to prevent applicants from gaming the system. The final score is used to rank candidates.

ECH selects all candidates whose selection score is above a certain threshold. The threshold is determined previously every year. The selection software tells the reviewer whether or not to admit the applicant to the program, depending on whether the score is above or below the threshold. The reviewer, however, may propose a revision of an applicant’s admission decision at a “selection check” meeting. ECH staff in the selection check meeting review each case individually and make a final decision about whether or not to admit the candidate in question. In average, about 17% of applicants below the cutoff score are invited to join ECH each year.

After ECH sends the offers of admissions to all selected applicants, they accept or reject the offer at any point. About 65% of invited applicants start teaching on the first day of the academic year, in March, each year. The invitation of applicants below the cutoff score and the possibility of applicants rejecting offers of admission adds fuzziness to the probability of participating in ECH given by the interview selection score at the cutoff score.

Training and Placement

All participants who accept the offer to join ECH start an online training in November, followed by a four-week summer institute in January. The institute has evolved over the years based on ECH’s experiences and the influence of peer organizations in the Teach For All network. The institute is the first opportunity for fellows to practice teaching with a full class of students and includes courses on teaching practice, classroom culture, learning theory, literacy development, and leadership (Dobbie and Fryer, 2015).

Placement, in most cases, occurs during the summer (January and February). Applicants submit their location preferences and most of the time they are met. Selection scores are not used for placement decisions. Instead, school principals interview their assigned fellow before accepting them. Most ECH fellows teach at the high school level, due to legal restrictions in other levels. ECH selects schools from a list of schools or district applicants

(schools and districts apply online for an ECH fellow) on the condition that they met certain socioeconomic composition and commitment criteria.

School districts are in charge of hiring ECH fellows as teachers. The fellows receive the same treatment and salaries as other first year teachers and become full time employees of the school. ECH recommends that fellows sign contracts for 30 teaching-hours per week, though fellows are free to make any mutually agreeable arrangement with their employer and some are hired to teach 40 teaching-hours per week.

6 Data and Sample

The study draws on administrative data from ECH to gather final selection scores and the ECH admissions decision, on which the regression discontinuity design is based. Also from the application process, there is information available on pre-treatment covariates of applicants –including applicant’s contact information, gender, undergraduate institution and major, university admissions test score (PSU), college GPA, whether the applicant was a TA during college, and whether the applicant participated in a student club–, and evaluations on the teaching efficacy of fellows.

In addition, a web-based survey was conducted to collect information on the outcomes of interest, mainly ECH applicants’ preferences on certain educational policies, relevant background characteristics, and possible mediators.

6.1 Survey

The survey was built by drawing items from Voces Docentes (2015), TALIS, the World Values Survey, Education Next, CEP (2014), PDK Gallup, TNTP, and Dobbie and Fryer (2015), and TFA (2005).

The survey was field-tested by Teach First New Zealand and by applicants who did not reach the final application stage of ECH. Other pilot tests were distributed to students in Stanford’s STEP program and to Mechanical Turk. We also solicited individual feedback from both teachers and non-teachers from the US, Perú, and Chile. The complete survey collected data on ECH applicants’ demographics, mindset, beliefs about education, teaching practices, employment, entrepreneurship experience, political beliefs, civic engagement, and beliefs about race. Not all items included in the survey were mobilized to answer this paper’s research questions. The items that proved pertinent to this specific study are listed in Appendix 3C.

6.2 Measures on policy preferences

The most important of this study’s findings are derived from the survey item that asked respondents to rate the ten education policies discussed on section 3: (1) Reduce classroom

size; (2) Improve infrastructure; (3) Increase school funding; (4) Improve social services to the poor (health, nutrition, etc); (5) Improve teacher quality; (6) Improve principal quality; (7) Focus efforts on encouraging teachers, principals, and parents to believe in their students' potential; (8) Empower parents to give support and demand better education for their children; (9) Promote integration of students from lower and higher economic backgrounds in schools; and (10) Facilitate the replacement of ineffective teachers.

ECH applicants were asked to rate the effectiveness of these policies intended to increase the educational opportunities of low-income students in their country. Policies were presented in randomized order to each respondent, and the complete list appeared all at once on the same page. Respondents rated each policy by selecting a score between -100 (extremely ineffective) and +100 (extremely effective) by moving a slider between the two extremes. This response was re-scaled to a score between -1 and 1.

One point of concern when comparing the responses to the survey across different groups is that they may respond with different reference frames in mind. This difference is of concern in this case if it takes place differently above and below the selection cutoff score. More specifically, they may change their reference frame due to their classroom experience (Duckworth and Yeager, 2015), which could distort the comparison of self-reported outcomes between the two groups. For example, it could be that ECH applicants with classroom experience increase their standards for what they understand as “extremely effective” and “extremely ineffective” compare to individuals with no classroom experience. If this happened, then a policy that each group finds equally effective would be positioned in different places of the (-100, 100) continuum. We addressed this concern by using a *relative* measure of policy preferences and by comparing those results to absolute measures of preference in all of this study's analyses. we calculated the relative preference score of each policy by subtracting the average rate an individual assigned to the 10 policies from the rate he assigned to each policy. The ten relative measures range from -2 to 2, have a mean of 0, and their average SD is of 0.3.

Adaptive Policy Preference Index

The Adaptive Policy Preference Index (APP index) aims to summarize trends in respondents' policy preferences. The index is a weighted average of policy preferences; favoring a highly technical solution, for example, will skew a individual's overall preference score more toward technical solutions than would favoring a *somewhat* technical solution. To determine the weights assigned to each policy measure, seventy American MTURK users who had no relation to this study- were asked to rate how “adaptive” or “technical” they thought each of the ten policies were. The resultant weights are illustrated in Figure 2, and are the same for each individual in the sample. Details concerning the process of determining those weights are available in Appendix 3D.

Two APP indices were determined for each respondent: one using the respondent's absolute policy preference scores and the other using her relative policy scores. We report both indices in all following analyses. The scores of each index were standardized across respondents to have mean of 0 and standard deviation of 1.

[Figure 2 about here]

Self-efficacy

We follow Bandura's (2006) method for constructing a self-efficacy scale. We measured the level of perceived self-efficacy in education by gathering responses to the items "I can increase opportunities of low income communities," and "I can make a positive impact in education." These items prompted individual to use a slider to measure how much they agreed with the statement; outcomes ranged from 0 to 100. The item was rescaled to range from 0 to 1. Both rescaled items were averaged (Alpha= .85).

These and other items in the survey are listed in Appendix 3C. Other items are used to explore other potential mechanisms influencing policy preference and to describe the opinions and current occupation of respondents. Answers are reported in the Results section.

6.3 Respondents Sample

The sample for this study includes all ECH applicants who reached the final stage of the ECH application process (i.e., Interview Day) and were assigned a final score. Therefore, it includes both admits and non-admits of all first five application cohorts since ECH opened, i.e. cohorts 2009 to 2013.¹⁰ The applicants who had joined ECH, had already completed the 2-year commitment and been one year out of ECH or more when answering the survey in 2016. The survey was sent via e-mail in January 2016 and responses were collected over the course of the next six months.

The average survey response rate per cohort included in the analysis was of 53%¹¹, varying from 47% to 59%; the main reason for a non-response was a lack of current contact information of the earlier cohorts. The response rate was 65% among ECH alumni and

¹⁰ I refer to cohorts by the year in which selected applicants started teaching, ie. applicants who apply in 2008 to ECH belong to the 2009 cohort, because the selected applicants started teaching in March 2009. While I administered the survey to applicants of cohorts 2009 to 2015, I only use responses from the first 5 cohorts in the study for two reasons: 1) only the first five cohorts had graduated from the program for at least a year and 2) the conditions for implementing a regression discontinuity design are not optimal in the last two cohorts (2014 and 2015), as explained in the methods section. However, I repeated the analysis including these other two cohorts and conclusions of the study are maintained.

¹¹ Non included cohorts reached 64 and 66%, because these are the youngest cohorts, the ones with less outdated contact information.

50% among non-admits.¹² Response rates are higher for alumni than non-alumni in part because ECH has kept alumni's contact information up to date. Figure 3 shows the balance of the response rate among the pooled sample. We examine the differences in the survey response sample around the selection cutoff in the methods section. We find no evidence of selective survey response that could invalidate the results, but this may have implications for generalizing the results.

[Figure 3 about here]

As in all studies involving web-based surveys, the response rate is a matter of concern. However, the response rate of this study is not low compared to other survey studies on ECH-like programs participants: Dobbie and Fryer's (2015) similar study received a response rate of 31% (40% TFA alumni and 27% non-admits), and McAdam and Brandt (2009) reached an overall response rate of 41%. My response rate is above 50%. A response rate above 30% is considered successful for web-based surveys.

Our analytical sample consists of all applicants from the first five cohorts (2009-2013) in ECH who responded to the primary outcome on the survey, i.e. 509 respondents. By "applicants" we refer to only those who reached the last selection stage, i.e. the Interview Day, and who were assigned a final selection score, i.e. 977 applicants. Since the program ECH is small, in particular the earliest cohorts- some of which had fewer than 30 participants- we present all analysis aggregated for all cohorts, and include cohort fixed effects in my specifications.

6.4 Descriptive Statistics

Information in this section is presented by group: "Teacher" or "Non-teacher". The "Teacher" group is comprised of ECH applicants who have worked as full-time teachers for at least one full year. All other individuals of the sampler are represented in the "Non-teacher" group. we'll refer in this section as "teachers" and "non-teachers" to the members of each corresponding group.

Table 2 shows the summary statistics for the respondents, by group. Respondents with one or more years of experience as teachers are more likely to have Education degrees, have lower levels of father education, and better college GPA. Appendix Table A1 presents summary statistics comparing the analytical sample to the full population of applicants. Survey respondents had higher levels of PSU scores than non-respondents and there is a lower proportion of respondents from cohort 2010.

¹² When running an analysis with the first 50% of alumni who responded the survey, to have a comparable proportion of alumni and non-admits in the sample, the results of this paper don't change.

[Table 2 about here]

Table 3 presents the raw averages of responses to the relevant survey items, by group. The “Teacher” group is comprised of all ECH applicants who have worked as full-time teachers for at least one full year. All other applicants are represented in the “Non-teacher” group. The outcomes listed correspond to several dimensions explored by the survey. Information presented in Table 3 allows us to observe raw differences between groups and also to compare trends within groups.

[Table 3 about here]

This study’s main outcomes are drawn from the ten education policy ratings. The first policies listed on the table (those classified as technical in section 3) have lower rates of approval among teachers than among non-teachers while the last policies on the list (those classified as adaptive) show the opposite pattern. The exception to this general trend is the policy mandating lowering the maximum class size, which was prioritized more by teachers than by non-teachers. Nonetheless, the policies most favored within each group are those that focus on the quality of teachers and principals and on setting high expectations.

The current occupation of individuals in both groups is variable. Unsurprisingly, there are very few individuals with education degrees or teaching certificates in the non-teacher group, whereas about a quarter of the teacher group has a degree in education and 63% has or is working towards a teaching certificate. At the time of the survey, most “teachers” were not working as teachers full-time, but three quarters of the teacher group’s individuals were working in the education sector. In the non-teacher group, no individual was working as a full-time teacher and only one quarter worked in the education sector. Lastly, about a quarter of the teachers pioneered social startups, most of them after applying to ECH; a significantly higher proportion of teachers than non-teachers were social entrepreneurs.

There were no significant differences between the two groups’ ideologies. Both groups tended to favor liberal ideologies.

Teachers and non-teachers assigned high value to considering the opinions of teachers. On the survey, applicants were asked to rate from 0 to 100 the level of interest they had in knowing the opinion of diverse teachers. Both groups assigned the highest value to teachers working in low-income communities; low-income community teachers were trailed by teachers recognized for teaching excellence and then by leaders of the teachers’ union.

The two groups did differ significantly in perceived self-efficacy. Individuals in the teaching group reported significantly higher perceived self-efficacy in education than the

control group of non-teachers. They perceived themselves to be making an individual impact in the field of education and in low-income communities.

Overall, the described disparities between the teachers and non-teachers found in several of the items in Table 3 are not necessarily caused by teaching experience. They may have existed before applicants applied to ECH. In the next section we analyze the causal impacts of teaching experience by reporting on the differences between teaching and non-teaching individuals who fell just barely on one side or the other of the cutoff score of ECH selection.

7 Analytical Strategy

Simply comparing individuals with one or more teaching experience to those with little or no teaching experience will not allow for causal claims about the effect of teaching experience on respondents. Doing so would yield biased results, because in first place, admitted and not admitted applicants to ECH may have had different beliefs and values before they applied to the program that could determine whether they would be selected as well as their policy preferences. Same concern applies to applicants who ended up teaching by their own means, regardless of ECH selection.

This problem is addressed by adopting a research design that leverages discontinuity in the ECH selection. By limiting the comparison groups to those applicants just above and just below the cut-off score for admission to the program, it is possible to assume that the two groups are similar in both observable and unobservable ways (Lee and Lemieux, 2010).

We use the following specification:

$$Y_{ic} = \alpha I(S_{ic} > 0) + f_c(S_{ic}) + c_c + \varepsilon_i \quad (1)$$

where Y_{ic} is the outcome of interest for respondent i from cohort c ; c_c is a cohort fixed effect, and ε_i is a mean-zero random error term. S_{ic} is the selection score centered on the cohort cutoff score and standardized within cohort to have mean 0 and SD=1; we refer to this standardized score as the forcing variable. α identifies the increase or decrease in the outcome Y for applicants rated above the cutoff score. $f_c(S_{ic})$ represents the effect associated with the forcing variable, which may be different for each cohort c . In the preferred specification, we assume $f_c(S_{ic})$ as linear, to be fixed among cohorts, with slopes varying on either side of the cutoff score. We allow each slope to vary between cohorts in some specifications, given that the forcing variable is defined differently from year to year. Lee and Card (2008) recommend addressing discreteness in the forcing variable by clustering standard errors by forcing variable score; however, in the current sample, the forcing variable has enough decimals that almost no applicants share the exact same selection

score, and so there is no threat of discreteness creating overmatched comparisons. Additionally, despite potential interaction between members of the same cohort, we will not cluster errors by cohort, given that it is not recommended to cluster errors in models where the size of the biggest cluster is bigger than the 5% of the total population (Rogers, 1993). Therefore, we use White robust standard errors only.

In cases where a cutoff score is not available (i.e. cohort 2009), we infer the cutoff score using the data of the corresponding cohort. As Dobbie and Fryer (2015) did, we estimate the optimal discontinuity point using a technique to identify structural breaks in time series data (Card, Mas, and Rothstein 2008). This effort is only needed for the first cohort.

7.1 Conditions for internal validity

We now check whether the conditions for ensuring internal validity of the regression discontinuity analysis are in place. In order for this design to provide unbiased impact estimates, the literature has discussed the following conditions as necessary to be met (Bloom, 2012, Schochet, Cook, Deke, Imbens, Lockwood, Porter, Smith, 2010).

In the first place, the selection score must not be influenced by the treatment. This condition is met, since the score assignment occurs before the treatment starts. The second condition is to ensure that the cutoff score is determined independently of the forcing variable (Bloom, 2012). This condition is met, since the cutoff score is determined before applicants are assigned a selection score.

In the third place, the forcing variable ought to have been generated ignorably randomly around the cutoff. This would ensure that the respondents around the cutoff score are not systematically different depending on the side of the cutoff score they are on. We test for violations of this condition in three ways. First, we ensure that there has not been manipulation on the assignment of the selection score by looking at the distribution of applicants across the selection score. Second, we ensure that there are no observable differences between the applicants right above and right below the cutoff score. Third, we test whether there is differential response around the cutoff score. We continue by describing each of these analyses and concluding that there is no evidence of respondents being different around the cutoff.

First, we ensure there is no manipulation of scores. One major threat to the regression discontinuity approach in this context is that ECH raters may assign a score to purposely locate an applicant under or over the cutoff score. The incentive for doing this is low. First, applicants' final score depends on the Interview-day score but also on previous scores assigned by other raters in earlier selection stages. In addition, ECH raters have the option to accept (reject) an applicant even when the applicant's score turns out to be below (above) the cutoff point. As explained earlier, when the rater's opinion is not aligned with the final

score of his or her applicant, the case is discussed in a “Selection Check meeting” with other ECH raters where they decide whether to approve the applicant or not. Twenty-seven percent of the invited applicants fall below the cutoff score and were selected to the program thanks to this mechanism.¹³

In fact, we find no evidence suggesting a systematic manipulation of scores around the threshold. Figure 4 allows for a visual examination of the data showing the distribution of applicants across the forcing variable.¹⁴ We also ran a McCrary (2008) test to estimate whether there is a discontinuity in the distribution of the centered selection score at the cutoff score. This test fails to reject that the density of scores is the same immediately above and below the cutoff point, for each cohort (p -value=0.141). The same is true for each cohort individually.¹⁵ Individual distributions can be observed in appendix Figure A1

[Figure 4 about here]

We also evaluate the presence of score manipulation by testing for covariate balance: we test whether average observable pre-treatment characteristics of applicants are the same on both sides of the threshold, to ensure that these characteristics are not discontinuous at the cut score. In Figure 5, we plot actual and fitted values of applicants’ characteristics from a local linear regression using cohort fixed effects interacted with the indicator for being above the cutoff, using triangular kernel weights or using a bandwidth close to the cutoff score. Here the optimal bandwidth, following Imbens and Kalyanaraman (2009), is around 0.5 points above and below the cutoff score. We plot pre-treatment characteristics available from individuals’ applications to ECH. Table A2 expands the analysis using different bandwidths. Figure 5 and estimates from Table A2 show that applicants close to the cutoff score do not differ, supporting the idea that there are no discontinuities at the cutoff score.

Finally, internal validity of this research design requires that survey respondents next to the cutoff score do not differ systematically. Sources of difference among groups above and below the cutoff score may come from, for example, selective response to the online survey caused by the ECH membership. One would worry that this would create a

¹³ I do not include applicants of 6th and 7th cohorts in the main analysis because I have evidence that starting the 2013 process, committee members were able to overwrite a score of an applicant that was discussed at the Selection Check meeting. This mechanism may provide a more accurate score to some applicants, but it constitutes a threat to an RD design given that only a non-random sample of applicants gets revised based on unobservable characteristics. However, I show that including these cohorts in the analysis does not change the conclusions of the study (see Appendix Tables A7 to A10).

¹⁴ The selection score has been standardized within each cohort and centered at the corresponding cutoff score. The final forcing variable is calculated to the 0.000001 and 0.00001 decimal place in 2009 to 2011 and 2012 to 2013 cohorts, respectively.

¹⁵ The McCrary test fails to reject discontinuity by cohort as well. The McCrary discontinuity estimate and standard errors by cohorts are: cohort 2009: -.139 (.574), t-value: -.242. Cohort 2010: .323 (.369), t-value: .875. Cohort 2011: -.019 (.349), t-value: -.054. Cohort 2012: .413 (.257), t-value: 1.607. Cohort 2013: .29 (.29), t-value: 1.00.

discontinuous difference at the cutoff score not caused by the treatment, but instead due to other differences in the compared groups. Following Dobbie and Fryer (2015), we evaluate this possibility in two ways. First, We test whether there are balanced survey response rates at the cutoff score. We find no evidence of response rate changing at the cutoff score (as shown earlier in Figure 3). Second, we test whether the observable characteristics of survey respondents differ at the cutoff score. If there are no discontinuities, we can assume that respondents at the selection threshold are similar. Indeed, we find no evidence of the type of difference in the groups that would invalidate the impact estimation.

Figure 6 shows balance checks on pre-treatment characteristics, within the group of survey respondents only. For this we use pre-treatment characteristics available from individuals' applications to ECH and gathered through survey responses. In addition, we plot variables related to the survey response, such as use of mobile device to complete the survey (instead of a PC) and survey response date, to highlight any potential difference between respondents above and below the cutoff score. Table A2 presents the estimated coefficients of a discontinuity in the cutoff score among respondents for diverse specifications and bandwidths.

Among 76 models that tested balance on 18 covariates, we find statistically significant imbalances in six of the models. The percentage of respondents who are female appear significantly higher right above the cutoff score in one of the specifications. The percentages of respondents whose father completed high school and who participated in a student club during college are significantly lower right above the cutoff score. Ideology appears significantly different at cutoff score when looked at the smallest bandwidth, but the difference is close zero in all other specifications. There are no differences in reported mother's education level (for high-school completion rates and college completion rates), GPA at college, majoring in education, working as a teacher assistant, gender, native ethnicity, mixed ethnicity, nor use of mobile device to answer the survey. In general, respondents right above the cutoff score show a mild tendency for having lower academic level than the respondents below the selection threshold, but this difference is not significant.

[Figure 6 about here]

Though most of the balance coefficients are insignificant, it may be due to lack of statistical power instead of to an absence of true differences among groups. This could be a cause of concern. We test whether these results reflect true imbalances that would invalidate the regression discontinuity impact estimate by estimating a composite variable, an "outcome index", and studying its balance across the cutoff score. The index is a weighted average of all the covariates in the model, where the weights indicate the extent to which the covariate predicts the outcome among respondents. We create this index by regressing the

summary outcome variable (the *APP index*) by the baseline covariates and then we predict the outcome. The predicted score is the outcome index.

Figure 7 shows the respondents' outcome index plotted against the forcing variable. There is no evidence of imbalance on the outcome index across the cutoff score (the estimated jump at the cutoff score using the optimal bandwidth is -0.070 (0.076), p -value= 0.359). The corresponding estimates with diverse specifications and bandwidths are shown in Table A3. Thus, among those near the cutoff, we conclude there are no observable differences across it.

[Figure 7 about here]

A final condition that must be met for estimating impact through a regression discontinuity design is that the functional form of the model must represent the relationship of the outcome variable and the forcing variable. In the absence of treatment, this function should be continuous and should be correctly specified. In order to ensure this, one would inspect the data by visualizing it graphically and observing the actual functional form of the relationship between forcing variable and outcome. We will show whether this condition holds on a case by case basis, visually.

7.2 First Stage

A final consideration for an RD design is to determine whether the discontinuity is “sharp” or “fuzzy” (cf. Lee & Lemieux, 2010). As mentioned earlier, the ECH selection process has fuzziness built in when applicants who fall below the cutoff score are revised and invited into the program. In addition, not all invited applicants accept the offer. Likewise, among those who finally start teaching in March, there is still a number who quit teaching before completing one year. In addition, there are applicants who did not receive an invitation who decide to take a teaching job by their own means (and who are considered as treated). Finding a job in public schools without having an education degree is difficult, but 18% of applicants in the applicants' sample hold an education degree and, thus, are highly likely to secure teaching positions by their own means¹⁶. In fact, among survey respondents who were not admitted to ECH, 7.8% report to having taught full time after the application year and 20% who report having taught full time any year. Thus, if one is interested in whether being above the cutoff score increases the probability of having full time teaching experience for more than one year, the discontinuity is certainly fuzzy. Figure A4 in the Appendix presents the distribution of applicants across the selection score who taught through ECH and those who did it by other means.

¹⁶ In Chile, most education degrees are awarded by Education Schools and graduates automatically receive a teaching certificate.

Figure 8 shows two graphs to illustrate the impact of being above the cutoff score on the probability of being invited to ECH and the probability of having any full time teaching experience for at least a year. The first graph indicates the proportion of survey respondents who received an invitation to join ECH by selection score centered at cutoff score. The second corresponds to the proportion of respondents who have ever taught more than one year as a full time teacher. All graphs show actual and fitted values through a local linear regression with and without triangular kernel weights. These graphs show a significant discontinuity at the cutoff score. There is an increase of more than 20 percentage points in the probability of having one year or more full time teaching experience for respondents just above the cutoff score, significant at the 5% level (actual estimates in Table A4).

[Figure 8 about here]

8 Results

8.1 Effects by Policies

Figure 9 allows for a visual examination of the trends in absolute preference for each individual education policy. The figures illustrate actual and fitted values of the policy rates. Linear fits are shown in the graph over the optimal bandwidth (solid line), which in this sample is around $|S_i| < 0.7$, or using triangular kernel weights (dashed red line). The figure reports estimates derived from a local linear regression using cohort fixed effect and robust standard errors over the optimal bandwidth (RF, top row) and using triangular kernel weights on the full sample (TK, bottom row). Estimates using additional bandwidths and controlling for applicant characteristics are presented in Table A5 in the Appendix.

[Figure 9 about here]

Figure 9 shows that respondents falling near the cutoff score who had worked as full-time ECH teachers generally demonstrate decreased preference for technical policies (i.e., the first four policies) and increased or constant preference for adaptive policies (i.e., last four policies). The biggest disparity between respondents at the cutoff score who had taught and those who hadn't seems to lie in strategies such as decreasing class size, improving school infrastructure, and increasing social services. By contrast, adaptive policies such as ensuring less socioeconomic segregation in schools; increasing the quality of principals; focusing on heightening teachers', principals' and parents' expectations of students; and empowering parents to advocate better for their children's education show some increased favorability, though those increases are mostly insignificant.

The exception among favorability trends regarding adaptive policies is the preference for increasing teacher quality, which actually decreases among teachers with full-time

experience. However, this policy ranks the highest overall among both control and treatment groups on both sides of the selection cut-off. All applicants to ECH seem to have deep faith in teachers' influence even before they apply to the program. This faith diminishes somewhat for applicants who gained experience in the classroom, but increasing the quality of teachers remains the most popular policy .

As a robustness check, we repeat these analyses with respect to the relative ratings. Analysis of the relative ratings confirms that respondents' support for technical policies declines and their support for adaptive policies increases or persists once they have gained teaching experience. It is particularly notable that relative preference for increasing the quality of principals and decreasing socioeconomic segregation in schools is significantly higher among applicants above the cutoff score (i.e., teachers) than it is among the lower scorers. Table A5 and Table A6 in the Appendix demonstrates the same results using diverse bandwidths and specifications, and also using different cohort samples.

8.2 Adaptive Policy Preference Index

We analyze the aggregated measure of all policies (the APP index described earlier) to determine whether there is indeed a trend among experienced teachers of prioritizing adaptive over technical policies. Figure 10 allows for a visual examination of the effect of being above the cutoff score on the APP Index. The figure illustrates actual and fitted values of the APP index for survey respondents from the cohorts of 2009 to 2013. The graph includes a linear fit within the optimal bandwidth ($|Si| < 0.7$) in solid line and using triangular kernel weights in dashed red line. The figure reports estimates derived from a local linear regression using fixed effect cohort analysis and robust standard errors over the optimal bandwidth (top row) and using triangular kernel weights on the full sample (bottom row).

[Figure 10 about here]

Respondents above the cutoff score evince markedly different (and presumably evolved) educational policy preferences; their APP Index increases by more than .5 standard deviations (s.e. 0.210, p -value=0.015). Details regarding estimates for additional bandwidths and estimates taking into account additional specifications (e.g., controlling for respondents' characteristics) are available in Table 4. Results are robust for the bandwidth selection and specification. The corresponding two-stage least squares estimates show that the APP Index difference is of 1.8 standard deviations (s.e. 0.911, p -value 0.048). Those with at least one year of teaching experience gained for the sole reason of being above the selection cutoff score show higher preference for non-technical policies.

[Table 4 about here]

8.3 Robustness checks and falsification test

Table 4 shows that the results indicating a shift along the APP Index are robust to the bandwidth and specification; it also notes that results remain the same whether the index is calculated from absolute or relative policy ratings. In addition, we test whether the results hold if other cohorts are included in the sample. Table A7 in the Appendix shows that results remain robust when cohorts 2014 and 2015 (those cohorts in their first and second year of their commitment) are incorporated into the analytical sample.¹⁷

we ran a falsification test by centering the forcing variable at points other than the official cutoff application score; at these points of demarcation, there is no apparent reason to find significant differences between respondents who fall on one side or the other. Table 5 shows that at two different forcing variable scores (0.5 and -0.5) there are no significant differences in the Adaptive Policy Preference Index when calculated with either absolute or relative ratings. This result remains robust after controlling for a host of observables. Coefficients are generally small or bounce between negative and positive values with no clear trend. Tables A8a and A8b show the same analysis performed after other cohorts are incorporated into the analytical sample; the results remain unchanged.

[Table 5 about here]

In conclusion, there are no signs of discontinuity in the APP Index at points other than at the official application cutoff score.

8.4 Exploration of Mechanisms

In order to answer the research questions regarding the mechanisms behind changes in teachers' policy preferences, we explore four potential explanations. The following analysis does not definitively show that any of these mechanisms did or did not directly cause the trend, but considering explanations does point up certain potential relationships and help us to discard alternatives.

8.4.1 Self-interest

To explore whether there is evidence on the change on policy preferences being motivated by individuals' self-interest, we explore the research question 2-a: *Are impacts on policy preferences observable even among individuals with no potential conflict of interest resulting from personal involvement in education?*

we explore this question by studying whether the subsample of respondents who were not working as teachers at the time of survey-taking (81% of the sample) and who had no

¹⁷ Table A3 confirms that these samples are balanced at the threshold.

education degree (84% of the sample) are characterized by the same trends in APP Index as were those respondents with clear vested interests in education policy.

we first explore whether there are significant differences between individuals who were teaching and those who were not at the time of the survey. One concern is that working as a teacher at the time of the survey would be endogenous to the treatment, since the decision to remain a teacher after completing two years with ECH could be affected by the quality of one's teaching experience. However, as Figure 11 shows, there are no differences, at the selection threshold, in the proportion of respondents who were teaching at time of the survey.

[Figure 11 about here]

Thus, we can explore differences between teachers and non-teachers if we assume that those working as a teacher today are the same who would have worked as a teacher if they were located at the other side of the ECH selection cutoff score. Under this assumption, Table 6 panel A shows the difference in APP Index across the cutoff score between the group of respondents who were actively teaching at time of the survey and those who weren't. we find no significant differences in the APP Index between current teachers and ex-teachers at the cutoff score. If anything, current teachers exhibit a less dramatic version of the trend toward preferring adaptive solutions.

[Table 6 about here]

In addition, we explore whether there are different trends in opinion for individuals who were formally trained as teachers (and therefore hold a degree in education) as opposed to those who were not, independent from their current occupation. Again, Table 6 shows that most trends in opinion change among individuals with degrees in education are not significantly different from trends showed by those with no degree in education. Graduates of education programs tend to have less marked or comparable evolutions of opinion. This finding should be applied with caution, however, as there were only 79 respondents who had degrees in education among those who reached the last selection stage in ECH.

Appendix 4 includes the complete analysis for the subgroup of applicants who did not have degrees in education at the time of application. we show that this sample of applicants have balanced pre-covariates across the threshold and sufficient first-stage contrast (Table A9). The analysis of changes in policy preference for respondents who scored close to the application cutoff shows the same pattern of results as was found in the full sample.

8.4.2 Shift in group affection

In order to explore whether changes in policy preference were related to changes in respondents' increased affection for or identification with teachers, we explore the question 2-b: *Do individuals value teachers' opinions more after acquiring classroom experience?*

A survey item asked respondents to indicate how interested they would be to hear the opinion of certain types of teachers. Figure 12 shows the results for each type of teacher: a teacher working in a low-income community, a teacher who has been recognized for excellence, and a teachers' union leader. Individuals above the cutoff score show higher interest in listening to the opinion of each of these teacher types. The two largest increases were found in respondents' interest in opinions of teacher union leaders and teachers who have been recognized for their effectiveness.

[Figure 12 about here]

The increase in the value individuals give to teachers' opinion prevents me from rejecting the possibility that any of the shifts in policy preferences observed in this study are influenced by the opinions of other teachers. However, this line of argument seems counterintuitive and suggests that there are still other mechanisms at play given the decreased preference for policies typically supported by teacher unions (such as reducing classroom size)¹⁸.

8.4.3 Shift in political ideology

In order to explore whether the shift in policy preferences produced by the classroom experience is a product of a change in the political ideology of individuals, we explore question 2-c: *Do individuals' political identification change as a result of their experience in the classroom as full-time teachers?*

we study whether respondents' political ideology evolved as a result of their teaching experience. As shown in Figure 13, we found no significant differences between the reported ideology of respondents above and below the cutoff score. This result aligns with previous research that finds ideology and party identification to be fairly stable (Jennings & Niemi, 1978; Campbell et. al, 1960). we are not able to reject the hypothesis that teaching experience has no impact on the political ideology of individuals, suggesting that individuals' shift in preference toward certain educational policies occurred without a change in their overall ideological commitments.

¹⁸ Shown earlier in Table A5

we explore heterogeneity of the results across political ideologies. we use family ideology¹⁹ as a proxy for individuals' ideological identities because individual's reported ideology is very skewed (80% of the sample self-classified as liberal). Instead, reported family ideology has higher variation and can better represent the underlying ideology of an individual because family ideology appears to be one of the best predictors of both individuals' ideology and policy preferences in the long run (Jennings & Niemi, 1978). Nevertheless, the conclusions taken from running the analysis using individual ideology instead are the same.

In Table 6, we present changes in respondents' policy opinions moderated by their families' ideological identity. we find that changes in the APP Index for individuals from liberal families and from conservative families are indistinguishable. Moreover, both liberal and conservative families' offspring significantly decrease their preference for one or more of the policies deemed technical by this study when running the analysis by subgroup.

This analysis suggests that teaching experience can influence policy positions regardless of political ideology, even despite the powerful influence political ideology has been proven to have on individuals' policy positions (Cohen, 2003). Furthermore, both liberal- and conservative-family respondents shift their policy preferences in the same direction, which suggests that on-the-ground teaching experience affected them in similar ways.

[Figure 13 about here]

8.4.4 Shift in knowledge

Individuals with classroom experience are likely to gather knowledge about how schools work and how students learn. Particularly important, they may see first-hand what solutions or policies can have greater results, if any. This knowledge may influence individuals' opinions of what is best to implement in education. However, we have no information that could help explore whether this mechanism is occurring. As a proxy, instead, we can analyze the extent to which individuals believe that it is possible to improve the educational opportunities of children today despite the myriad of obstacles to do so. In other words, we explore the impact of teaching on perceived self-efficacy in education, i.e.: *Do individuals with classroom experience show higher perceived self-efficacy?*

we measure whether the perceived self-efficacy of individuals above the cutoff score differs from the one of individuals below it. Those who feel they can affect their students' education today may have more faith in the potential of teachers and principals to improve the quality of the nation's education system. Figure 14 shows that respondents above the

¹⁹ As shown earlier in Table A2, family ideology is balanced at the threshold. Table A9 in the appendix shows balance on the outcome index across the threshold for each of these subgroups.

cutoff score have higher levels of perceived self-efficacy—they are more likely to agree with sentences like “I am effectively contributing to improving educational opportunities” and “I can make an impact in the field of education.” This finding is aligned with the hypothesis that higher trust in one’s own capacity to make change today is related to preference for adaptive policies.

However, while we can observe a difference in self-efficacy across the threshold, it is not possible to identify whether this difference is due to an increase among those with teaching experience or a decrease among those without it. It could even be possible that both groups decreased their self-efficacy, but that those without the opportunity to teach decreased it more. Thus, this analysis does not allow us to say that teaching experience increases perceived self-efficacy, but that at least it did not decrease it as much as it could have decreased without the opportunity to teach.

[Figure 14 about here]

9 Discussion and Conclusion

The paper is the first to examine the extent to which working as a full-time teacher for at least one year affects individuals’ beliefs about what should be done to improve educational opportunities for low-income students. Using a regression discontinuity design and a web-based survey, we compared the education policy preferences of two groups of applicants to ECH, an alternative teaching and leadership program in Chile: one group that fell just above the application cutoff score and the other that fell just short. These two groups, while ostensibly similar at the time of the application, differed with regard to the likelihood of their having worked one or more year as a full-time teacher; this probability increased by twenty percentage points for those above the threshold. Thus, it is tenable to assume that differences in opinion between these two groups, measured three or more years after the application process, are, at least in part, a consequence of this difference in teaching experience.

The results of this study suggest that working as a full-time teacher for at least one year decreased one’s preference for technical over adaptive policies, or, in other words, individuals decreased their faith in simple “silver-bullet” like solutions. Interestingly, these changes occur without changes to individuals’ stated political ideology. The changes observed in respondents’ policy preferences do not appear to be motivated by self-interest either, since the changes were observable in populations that were no longer teaching and in populations without education degrees. This finding is consistent with the literature on policy preferences, which has not found self-interest to be a main motivation for voters’ policy preferences.

The most probable explanation for this shift in policy preferences observed in professionals who gain teaching experience is that they gather valuable knowledge, such as what is more effective to support students, that informs them about what policies to support. Professionals with teaching experience show a greater level of perceived self-efficacy for education than those professionals without experience. In addition, the teaching experience helped increase the value that professionals report to have for the opinion of teachers. It is possible that the perceived self-efficacy together with the increased value placed on teachers, motivate individuals to put more faith in adaptive policies.

On the other hand, it is not possible to discount the possibility that the shift in policy preferences showed by professionals who gain teaching experience is caused by the influence of other teachers' opinions. Professionals who teach showed increased interest in hearing a wide spectrum of teachers' opinions, including those of union leaders and award winner teachers. However, these same individuals do not seem to increase support for policies typically supported by teachers, such as reducing classroom size. Thus, the extent to which teachers influenced participants opinion beyond the influence of other knowledge gathered from the teacher experience, remains unanswered. If, after working as teachers, ECH applicants come to value teachers more than students, then it is still possible that they would favor policies that specifically benefit teachers over those that increase opportunities of the students. We have not yet devised a mechanism for testing whether that is the case.

One limitation of this study is the difficulty of generalizing its results to other populations. Fuzzy RD estimates identify the effect of the treatment on populations that behave as if the ECH selection score were the sole predictor of their pedagogical destiny. we can predict the impact of teaching, that is to say, of those who comply with their assignment to treatment: those who do in fact go on to teach if they fall just above the cutoff score and those who never teach if they fall below the cutoff. Thus, my estimate of the effect of teaching on policy preferences may not necessarily generalize to the population of *never-takers*: those who, even though they fall above the cutoff and are admitted to ECH, decide not to teach. More importantly, the findings may not be generalizable to the population that goes on to teach regardless of their selection score, i.e., the *always-takers*, which in this case correspond to various types: those who would be selected and join ECH even when falling under the cutoff score, and those would go into teaching by way of some other means. This is a particularly important point to consider when attempting to generalize the results of this study to individuals with teaching certificates (i.e., those with undergraduate or graduate degrees in education at time of application to ECH). These individuals are very likely to teach regardless of the results of the ECH selection process, and thus can be considered *always-takers*. The results of this study may not apply to this particular group.

Furthermore, there may be differences between the individuals who teach through ECH from those who join teaching by their own means. These two groups may have differences in background, training, and professional expectations that may lead to different responses to classroom experience. For example, ECH participants might pay attention to different types of information or could identify with different reference groups; both possibilities would affect their policy opinions. If ECH participants' experience of teaching is unique, it would be difficult to generalize findings about their preferences to other populations, such as traditionally trained teachers.

Moreover, the classroom experiences of ECH participants are restricted to schools serving low-income populations; Chile's teachers as a whole would have more diverse experiences with respect to the socioeconomic backgrounds of students and communities. This unique restriction on ECH participants is another reason one should be cautious when applying findings about ECH participants to other populations.

Finally, ECH participants are not only joining a school—they are also joining an organization (ECH) with its own culture and community. This membership might impact participants' reference group, knowledge, and beliefs, which could, in turn, have influenced the positions on educational policy of those who joined. While this study cannot separate the impact of the ECH culture from the impact of the classroom experience on policy preferences, this does not preclude from considering the estimates presented in the study as the impact of working as a teacher, since the culture developed at ECH may be comparable to that of teaching communities at some low-income schools.

Future studies should focus on whether contextual differences, such as the particular development stage of a country's education system, lead citizens to prioritize certain policies over others. It may be that voters more strongly prioritize technical solutions, like infrastructure and funding, in less developed countries where basic needs of educational access are not yet solved.

Overall, the results of this study speak to the importance of understanding what is learned by teaching in the classroom and how this learning impacts what citizens believe to be the best path for education policy. This paper strengthens our understanding of the policy opinions of key education stakeholders and provides an account of those policies that are most highly valued by gaining classroom experience. Particularly, understanding the influence of teaching on ECH participants' opinion is particularly relevant because of their chances to occupy leadership positions where they may later influence the whole educational system—considering that about 80% of participants remain involved in education years after the program. Additionally, this study's findings contribute to the growing literature on education policy formation and change.

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Tables

Table 1: Applicants by application stage and year

Stage	Cohort*					Total
	2009	2010	2011	2012	2013	
Total Applicants	715	1074	1250	1385	1491	5915
Applicants at Interview Day**	93	188	181	305	197	964
Selected to join ECH	41	71	73	142	94	421
Accepted invitation	32	60	62	119	69	346
Started Teaching (any year)***	31	43	50	91	61	278
Alumni***	22	27	39	74	51	213

Note: (*) Cohort year corresponds to the year that an applicant would start teaching if accepted to the program. This means that he or she participated in the selection process during the previous year. (**) Applicants at Interview Day counts those who applied for the first time and received a selection score in the Interview Day. (***) Selected applicants from one application process may have delayed their start year or, if rejected, could have re-applied in a future year and joined the program later. They are counted as *Started Teaching* and *Alumni* in the cohort of their first application.

Table 2: Summary Statistics for Pre Treatment covariates among survey respondents

Variables	Non Teachers			Teachers			Diff
	count	mean	sd	count	mean	sd	
Female	254	0.555		255	0.612		
PSU score (std)	194	0.118	1.003	176	0.146	0.984	
Education Major	254	0.035		255	0.275		***
Teaching Assistant	254	0.622		253	0.644		
Student Club Participation	254	0.772		254	0.835		*
College GPA under 5.5	162	0.432		179	0.307		**
College GPA over 6.0	162	0.185		179	0.291		**
Family ideology	249	-0.033	0.557	252	-0.026	0.567	
From Metrop. Region	252	0.512		255	0.553		
Mother Highschool	252	0.857		255	0.820		
Mother College	252	0.516		255	0.490		
Father Highschool	251	0.880		251	0.821		*
Father College	251	0.629		251	0.538		**
White	246	0.398		251	0.394		
Native ascent	246	0.028		251	0.036		
Mixed ethnicity	246	0.581		251	0.582		
Answered using Mobile Device	254	0.295		255	0.298		
Date Started Survey	254	23.15	23.10	255	20.157	23.06	
N=	254			255			

Notes: Sample consists on all applicants for cohorts 2009 to 2013 who have answered the survey and have a value on the adaptive index. “Non teachers” refer to the sample of respondents with no teaching experience or less than a year of teaching experience. “Teachers” refer to those with 1 or more years of teaching experience. Parents education and family ideology are reported by the respondent, post treatment. PSU and GPA not available in early cohorts. Significance of t-test on the difference between Teachers and Non Teachers values are reported in Diff column: * p<0.10, ** p<0.05, ***p<0.01

Table 3: Raw means on survey elements by group

	Non teachers			Teachers (at least one year)			
	count	mean	sd	count	mean	sd	Diff
APP Index using Absolute Rates	254	-0.10	0.96	255	0.11	1.04	**
APP Index using Relative Rates	254	-0.11	0.97	255	0.22	1.00	***
Education Policies							
Decrease Class Size	254	0.59	0.35	255	0.66	0.36	**
Improve Infrastructure	254	0.52	0.30	255	0.46	0.35	**
Increase Funding	254	0.64	0.31	255	0.60	0.32	
Facilitate Replacing Ineffective Teachers	254	0.56	0.38	255	0.50	0.44	
Increase social services	254	0.60	0.33	255	0.58	0.32	
Less Segregation	254	0.53	0.42	255	0.61	0.39	**
Better Principals	254	0.67	0.29	255	0.79	0.27	***
Better Teachers	254	0.84	0.21	255	0.85	0.23	
Increase Expectations for Students	254	0.69	0.31	255	0.77	0.27	***
Empower Parents	254	0.61	0.34	255	0.69	0.29	***
Teacher policies							
Facilitate Replacing Ineffective Teachers	254	0.56	0.38	255	0.50	0.44	***
Increase selectivity of Education Schools	252	-0.17	0.62	255	0.00	0.74	**
Tie salaries with teacher evaluations	251	0.44	0.45	254	0.33	0.51	
Current occupations							
Has Education degree	254	0.04		255	0.27		***
Has Teaching Certificate	253	0.19		254	0.63		***
Teaching full time today	254	0.00		255	0.36		***
Works in K-12	239	0.05		246	0.44		***
Works in Education	239	0.21		246	0.75		***
Works in any social service	239	0.40		246	0.81		***
Engaged in education	252	0.40		254	0.77		***
Weekly volunteering	181	0.21		209	0.34		***
Has social startup	253	0.18		253	0.25		*
Startup after application	234	0.09		236	0.17		***
Ideology (individual)	245	-0.30	0.42	250	-0.34	0.45	

Continues...

Table 3 cont'd: Raw means on survey elements by group

	Non-teachers			Teachers (at least one year)			
	count	mean	sd	count	mean	sd	Diff
Value for teachers							
values teacher low income school	254	83.15	20.57	255	84.94	19.56	
values an excellent teacher	254	76.97	23.50	255	80.98	21.92	**
values a teacher union leader	254	45.98	31.43	255	50.08	31.60	
values an expert or researcher	254	71.46	24.25	255	71.84	24.91	
Self-efficacy in education	254	0.58	0.24	255	0.79	0.18	
Self-efficacy in general change	254	0.66	0.19	255	0.80	0.15	
I am contributing effectively in ed.	253	3.30	1.06	255	4.18	0.93	***
Defend others	250	73.94	21.56	255	78.26	20.28	**
I can influence community	250	62.26	25.52	255	67.37	24.10	**
I can impact low income comm.	250	61.04	27.64	255	73.25	24.30	***
I can impact education	249	59.24	29.16	255	78.31	20.82	***
I will sacrifice for others	253	4.06	0.91	255	4.32	0.78	
N=	254			255			

Notes: Sample consists on all applicants for cohorts 2009 to 2013 who have answered the survey and have a value on the adaptive index. Non-teachers group includes everyone with less than one year of full time teacher experience. Significance of ttest on the difference between Teachers and Non Teachers values are reported in Diff column: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: RD estimate of the effect of teaching experience on Adaptive Policy Preference Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Linear	Linear	Linear	Linear	Kernel	Linear	Linear	Linear	Linear	Kernel
	Full Sample	S <= 1	S <=0.5	S <=0.25	Triangular	Full Sample	S <=1	S <=0.5	S <=0.25	Triangular
	No Controls					With Controls				
Outcome	Adaptive Policy Preference Index									
Absolute APP Index										
Coeff. from Reduced Form	.342**	.532***	.638***	.912***	.595***	.376**	.585***	.805***	.801**	.669***
	(.145)	(.179)	(.235)	(.303)	(.192)	(.147)	(.183)	(.241)	(.357)	(.19)
Coeff. from 2SLS	1.304**	2.275**	2.162**	2.145**	2.252**	1.36**	2.516**	3.087**	3.655	2.806**
	(.625)	(1.116)	(1.05)	(.889)	(.999)	(.581)	(1.147)	(1.479)	(3.046)	(1.215)
Relative APP Index										
Coeff. from Reduced Form	.356**	.552***	.687***	.870***	.574***	.385***	.592***	.798***	.670*	.597***
	(.14)	(.175)	(.23)	(.314)	(.187)	(.141)	(.183)	(.233)	(.362)	(.184)
Coeff. from 2SLS	1.359**	2.362**	2.329**	2.046**	2.171**	1.384**	2.539**	3.062**	3.041	2.507**
	(.602)	(1.11)	(1.084)	(.864)	(.959)	(.554)	(1.13)	(1.448)	(2.485)	(1.108)
Controls						yes	yes	yes	yes	yes
N=	509	349	212	113	349	509	349	212	113	349

Note: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at cutoff score, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the threshold. The coefficient presented is the estimated jump at the corresponding tested score.

Columns (6)-(10) include controls listed in Table 2, with simple imputation. Columns (5) and (10) use triangular kernel weights.

Sample corresponds to all respondents from cohorts 2009-2013 who rated all 10 key education policies (ie. those who have a value on the APP index). Robust Standard error in parenthesis. * p<0.10, ** p<0.05, ***p<0.01

Table 5: RD Falsification Check. Change in Adaptive Policy Index at False Cutoff Score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
	Full Sample	S <= 1	S <=0.5	S <=0.25	Full Sample	S <=1	S <=0.5	S <=0.25
	No Controls				With Controls			
Index	Adaptive Policy Preference Index							
A) Cutoff score at -0.5								
Absolute	-.086	-.195	-.135	-.402	-.088	-.238 (.209)	-.121	-.156
	(.146)	(.203)	(.307)	(.527)	(.148)	)	(.319)	(.557)
Relative	.014	-.091	.155	.013	.037	-.136 (.207)	.144	.458
	(.145)	(.198)	(.291)	(.509)	(.148)	)	(.321)	(.538)
N=	509	347	181	97	509	347	181	97
B) Cutoff score at +0.5								
Absolute	.127	-.03	.358	-.277	.15	.004 (.255)	.367	-.424
	(.201)	(.251)	(.346)	(.496)	(.209)	)	(.37)	(.547)
Relative	.193	.13	.495	-.182	.22	.16 (.244)	.47	-.304
	(.193)	(.238)	(.331)	(.495)	(.201)	)	(.353)	(.528)
N=	509	286	168	79	509	286	168	79

Note: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at false cutoff score of -0.5 and +0.5 respectively, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. Columns (5) – (8) controls for variables listed in Table 2, with simple imputation. The coefficient presented is the estimated jump at the corresponding tested score, standard errors in parenthesis. All coefficients are not significant at the 90% level. Sample corresponds to all respondents who rated all 10 key ed. policies (included on the APP index).

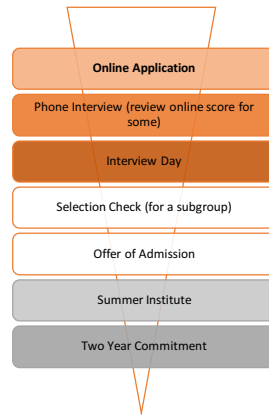
Table 6: Change in APP Index. RD Estimate with Subgroup Interactions

Subgroup	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	Linear		Triangular		Linear		Triangular		Linear		Triangular		Linear		Triangular	
	S ≤0.5		Kernel		S ≤0.5		Kernel		S ≤0.5		Kernel		S ≤0.5		Kernel	
	No controls				With controls				No controls				With controls			
	Absolute Adaptive PP Index								Relative Adaptive PP Index							
A) Interaction with <i>Has Education Degree</i>																
Above cutoff score (z)	0.678***	0.650***	0.812***	0.691***	0.736***	0.630***	0.842***	0.648***								
	(0.246)	(0.202)	(0.257)	(0.202)	(0.240)	(0.197)	(0.243)	(0.193)								
z x Teaching FT Today	-0.074	-0.115	-0.024	-0.047	-0.174	-0.190	-0.255	-0.271								
	(0.274)	(0.225)	(0.305)	(0.234)	(0.279)	(0.229)	(0.286)	(0.232)								
B) Interaction with <i>Teacher Full Time Today</i>																
Above cutoff score (z)	0.704***	0.674***	0.817***	0.718***	0.773***	0.668***	0.844***	0.673***								
	(0.242)	(0.198)	(0.248)	(0.199)	(0.239)	(0.195)	(0.238)	(0.192)								
z x Education degree	-0.168	-0.413	-0.094	-0.402	-0.423	-0.589**	-0.393	-0.626**								
	(0.334)	(0.304)	(0.327)	(0.308)	(0.311)	(0.278)	(0.337)	(0.292)								
C) Interaction with <i>Liberal Family</i>																
Above cutoff score (z)	0.655**	0.503**	0.772***	0.572**	0.812***	0.590***	0.836***	0.592***								
	(0.279)	(0.234)	(0.291)	(0.229)	(0.256)	(0.212)	(0.273)	(0.218)								
z x Liberal family	0.045	0.184	0.131	0.201	-0.116	0.015	0.027	0.059								
	(0.253)	(0.225)	(0.255)	(0.222)	(0.239)	(0.211)	(0.248)	(0.216)								
Other controls			yes	yes			yes	yes								
N	206	343	206	343	206	343	206	343								

Note: Each panel in this table reports coefficients at cutoff score and its interaction with the corresponding subgroup estimated by independent local linear regressions. All regressions control for a local linear trend in the interview score interacted with an indicator variable for scoring above the cutoff score. The sample includes all applicants for cohorts 2009 to 2013 who have a value for the adaptive policy preference index. Columns (1), (3), (5), (7) restrain the estimation to the optimal bandwidth only. Columns (2), (4), (6), (8) use the full sample with triangular kernel weights. Robust standard errors in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01

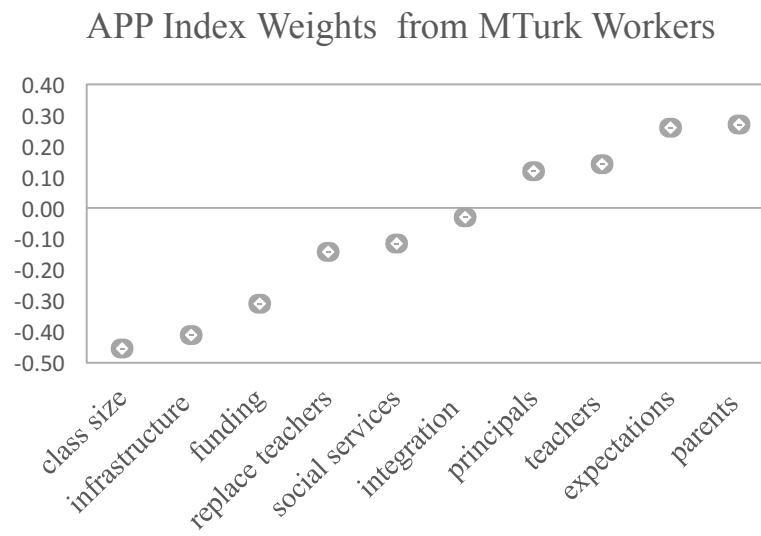
Figures

Figure 1. Selection pipeline in ECH



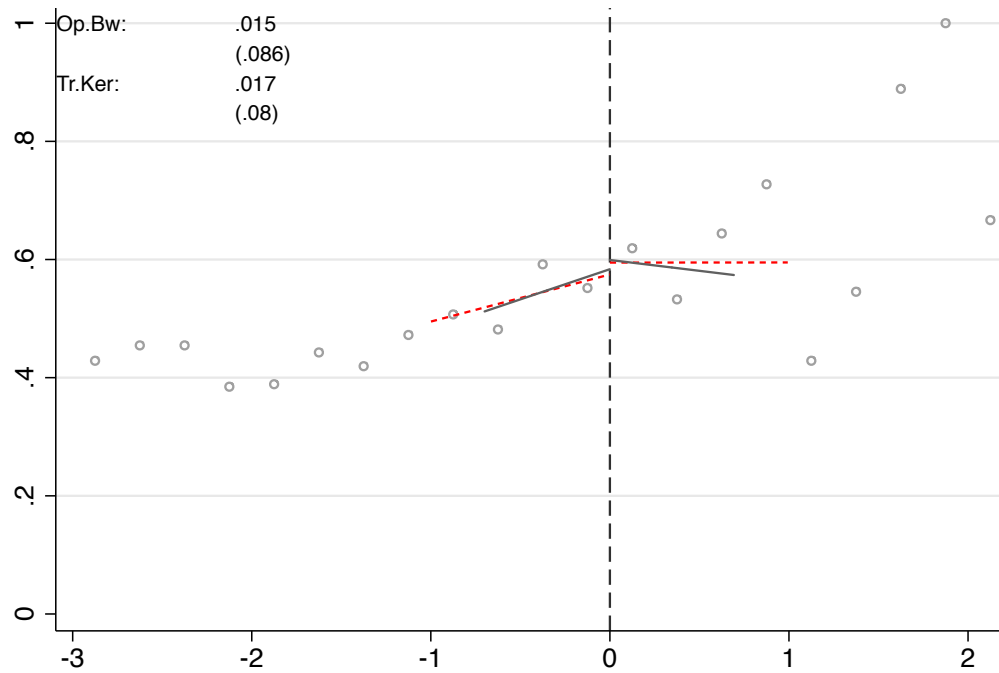
Note. Applicants are evaluated based on a selection score and a cutoff score in the orange stages. White stages include meetings to discuss outstanding cases. The offer of admission can be accepted or rejected by each applicant. The gray stages are part of the program. The organization did not implement all stages of this figure in each year's selection process (for example, phone interview did not exist for early cohorts). Each year there may be one, two, or three waves of applications and selection process, but the cutoff score and selection score formula is the same within a selection year.

Figure 2. APP index weights: Mean values reported by MTURK raters.



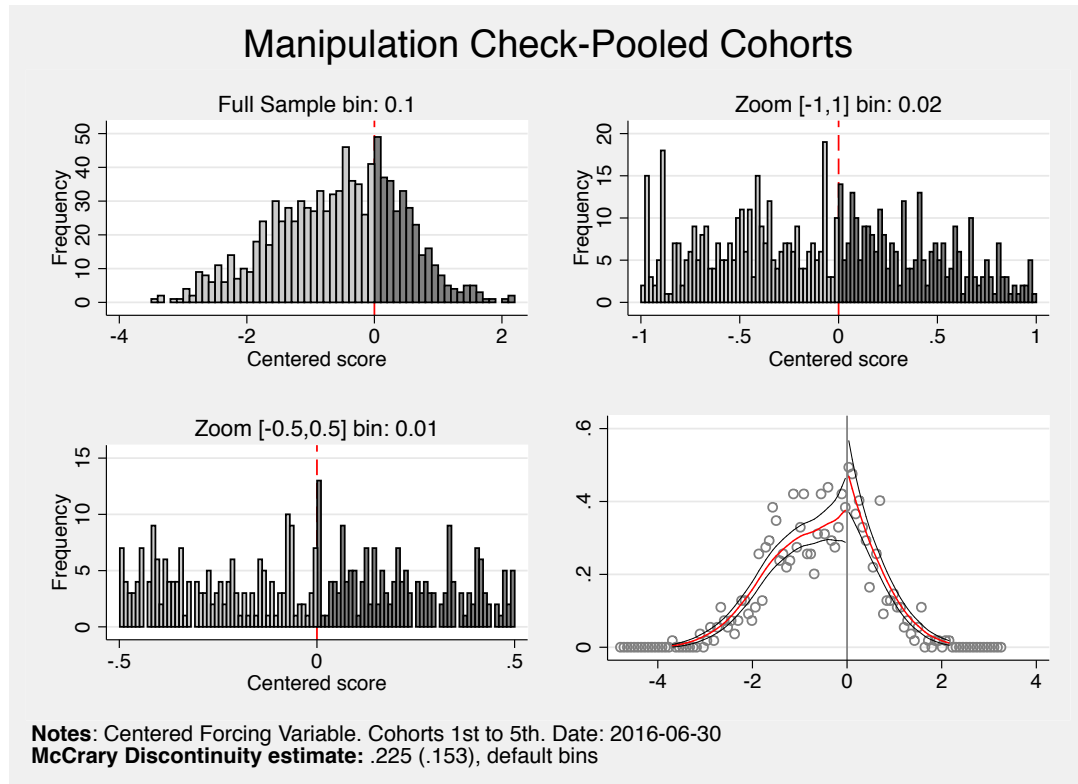
Notes. This Figure shows the values that are used as weights for each policy preference to calculate the APP index of a respondent. Details in Appendix 3D.

Figure 3. Survey Response Rate



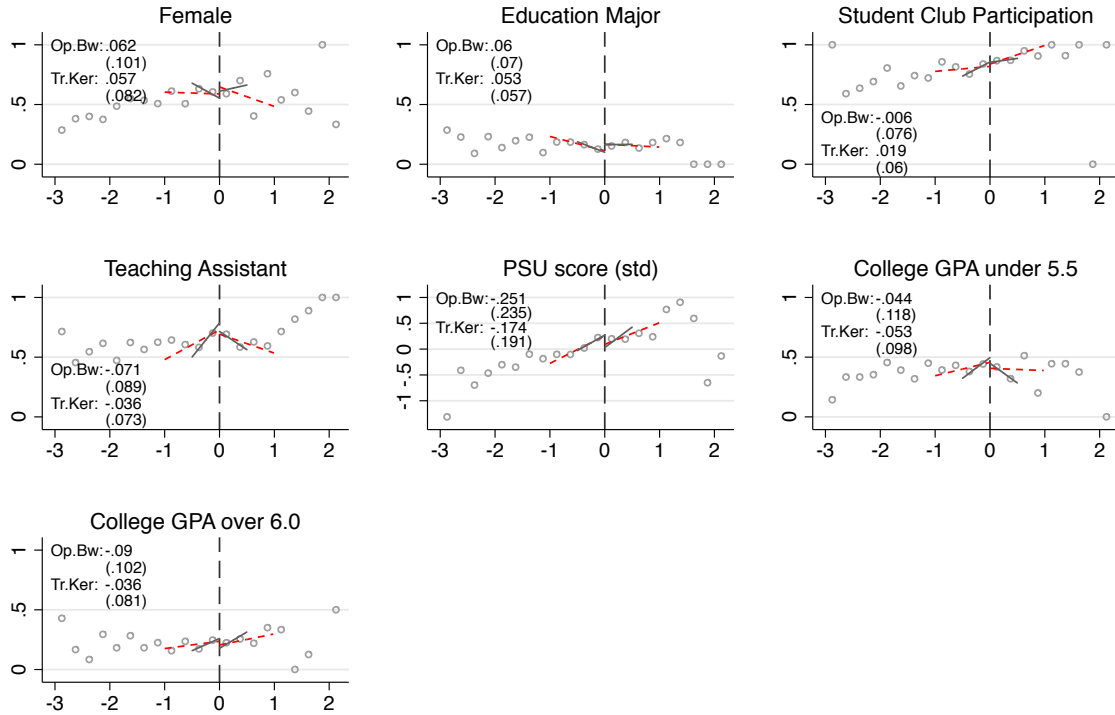
Note. Actual and fitted values showing the response rate among applicants from cohorts 2009 to 2013. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth ($|S_i| < 0.7$). The linear fit in dash line uses triangular kernel weights. The estimated coefficients of the jump on survey response rate at cutoff score in each model with cohort fixed effects is presented in the top left area of the graph. “Op.Bw.” presents the estimate using the optimal bandwidth: 0.015 (0.086), $p=0.860$; “Tr.Ker.” presents the estimate using triangular kernel weights: 0.01 (0.079), $p=0.872$

Figure 4. Distribution of Applicants and McCrary Test



Note. Distribution of applicants over selection score centered at cutoff score All pooled cohorts (2009-2013).

Figure 5. Balance Check on Covariates All Applicants.

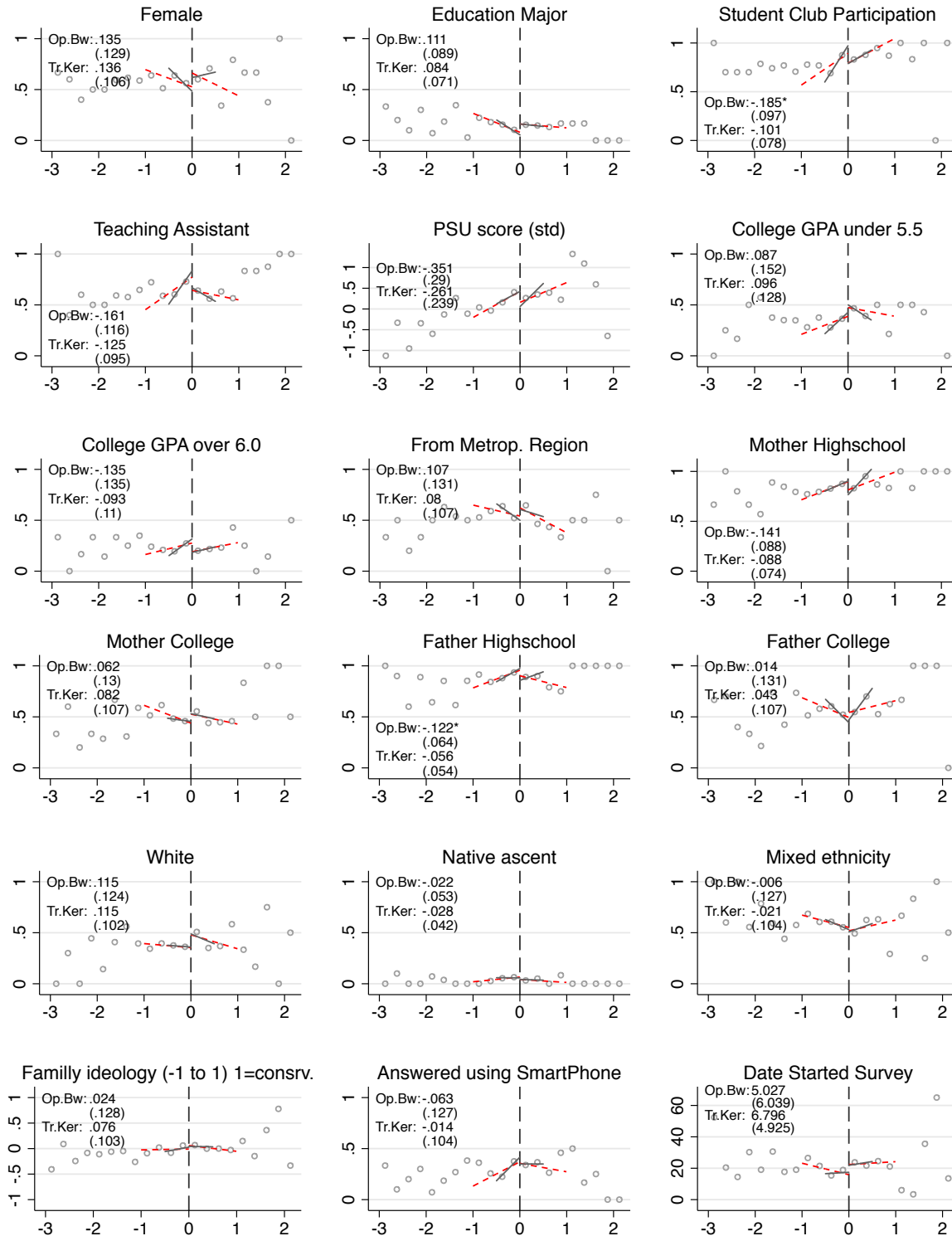


axis: Selection score centered at cutoff score

Note. Actual and fitted values for all applicants of cohorts 2009 to 2013. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of the corresponding covariate on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “Op.Bw.” presents the estimate using the optimal bandwidth; “Tr.Ker.” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

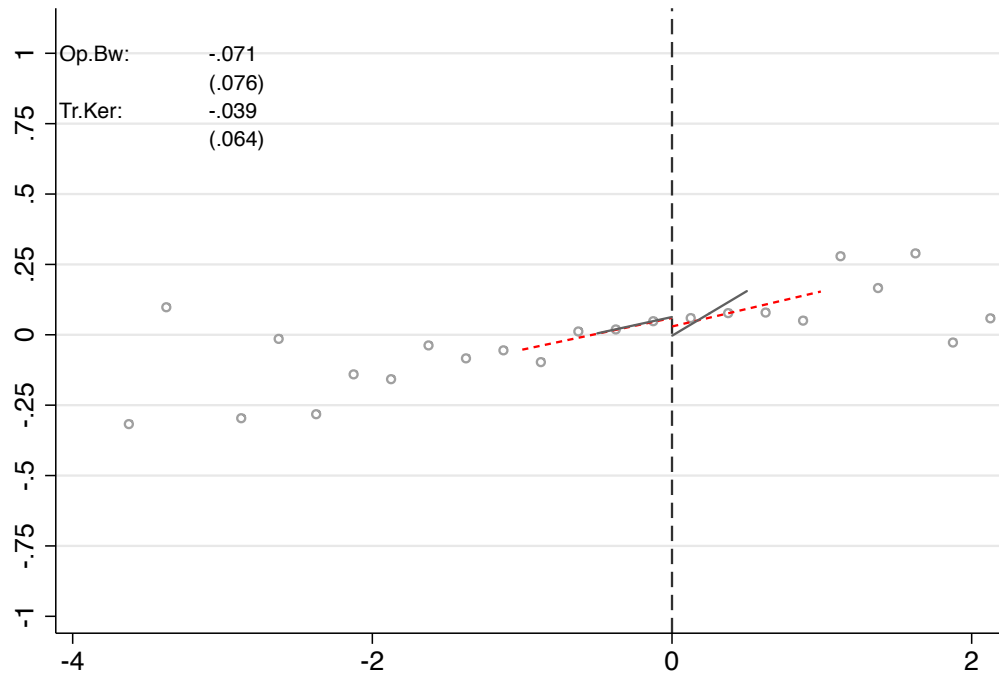
Figure 6. Balance on Covariates. Survey Respondents



Note. Figure 6 present balance on respondents' covariates. X axis corresponds to the selection score centered at cutoff score of each year. Actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are

plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights. Coefficients reported in the image are the result of a local regression of the corresponding covariate on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “Op.Bw.” presents the estimate using the optimal bandwidth; “Tr.Ker.” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

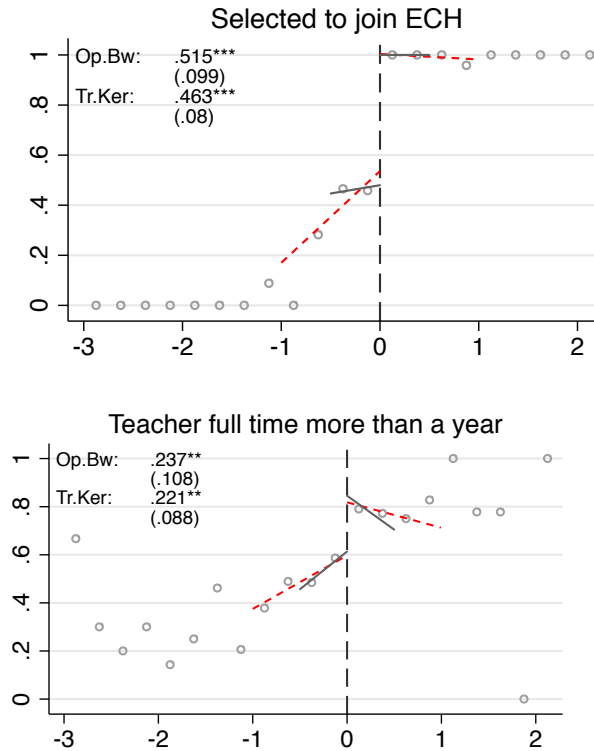
Figure 7: Balance on outcome indices on survey sample



Note. Actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of the Outcome Index on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “Op.Bw.” presents the estimate using the optimal bandwidth; “Tr.Ker.” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Outcome index mean: 0.008 (.337). Min: -.996, Max: 1.008.

Figure 8: First Stage Results for Survey Respondents

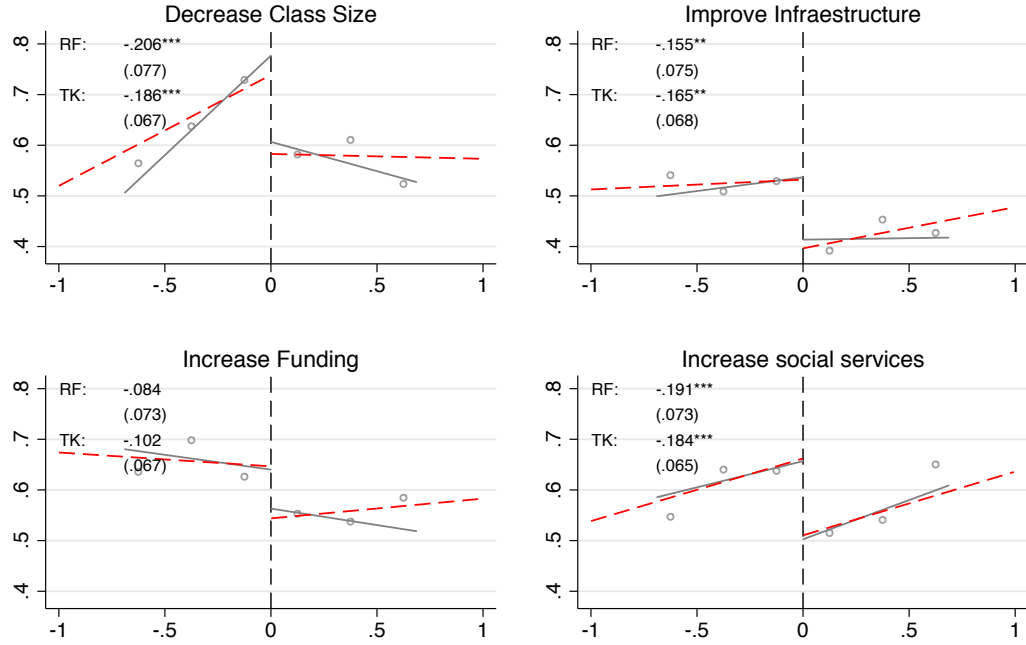


Notes. Actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

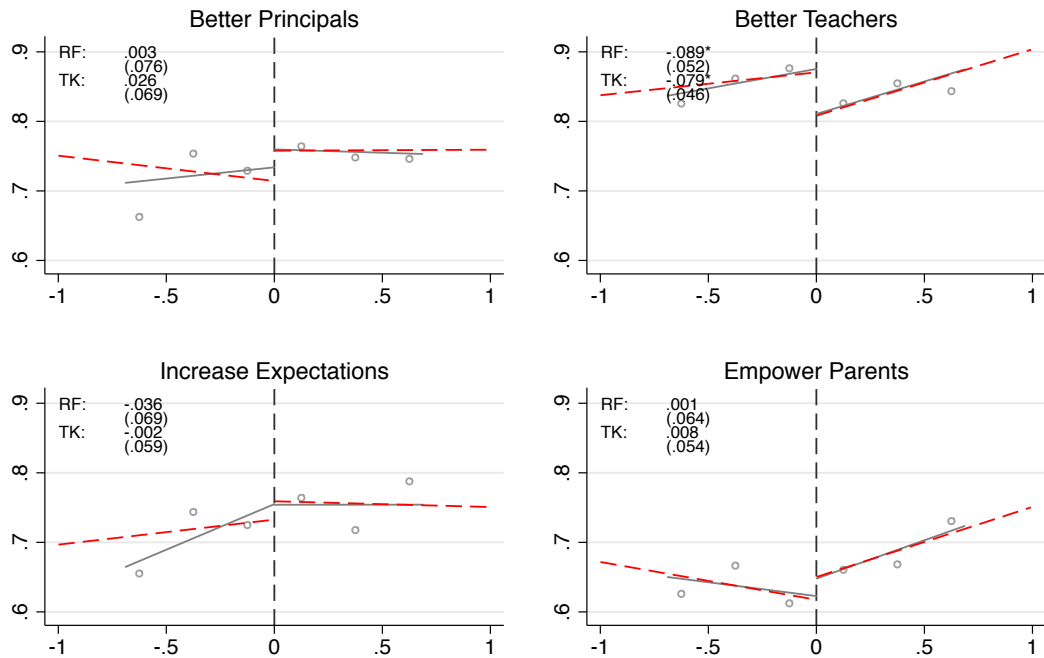
Coefficients reported in the image are the result of a local regression of the corresponding variable (Being selected and working as a teacher for more than one year, respectively) on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “Op.Bw.” presents the estimate using the optimal bandwidth; “Tr.Ker.” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 9: Shift in Policy Preferences (Absolute Rate)

A: Technical Policies

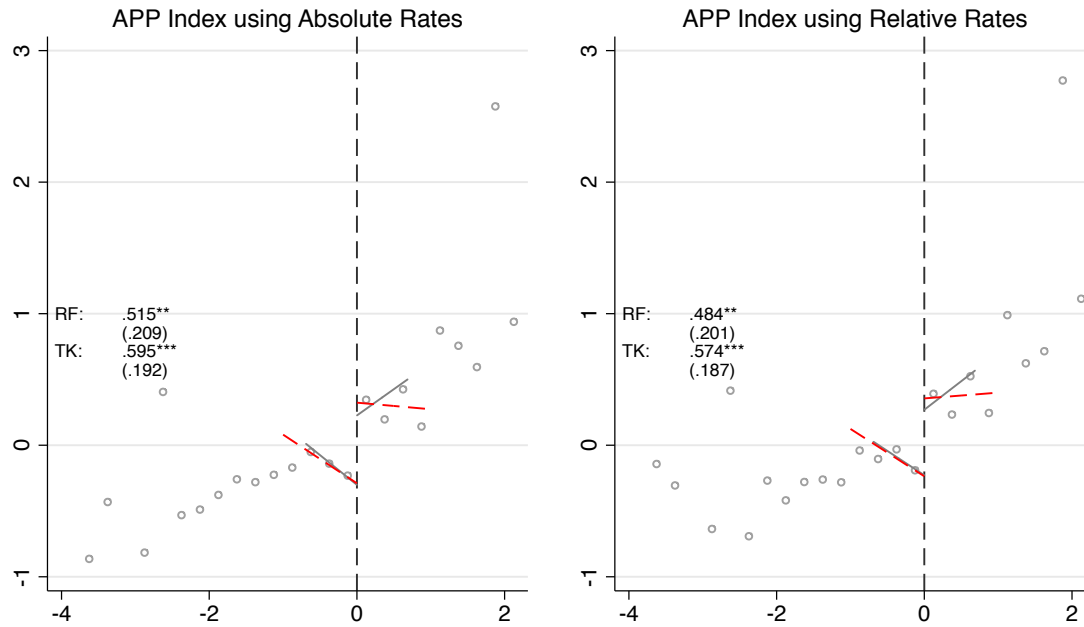


B: Adaptive Policies



Notes. Each figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights. Coefficients reported in the image are the result of a local regression of the corresponding policy on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth $|S_i| < 0.7$; “TK” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

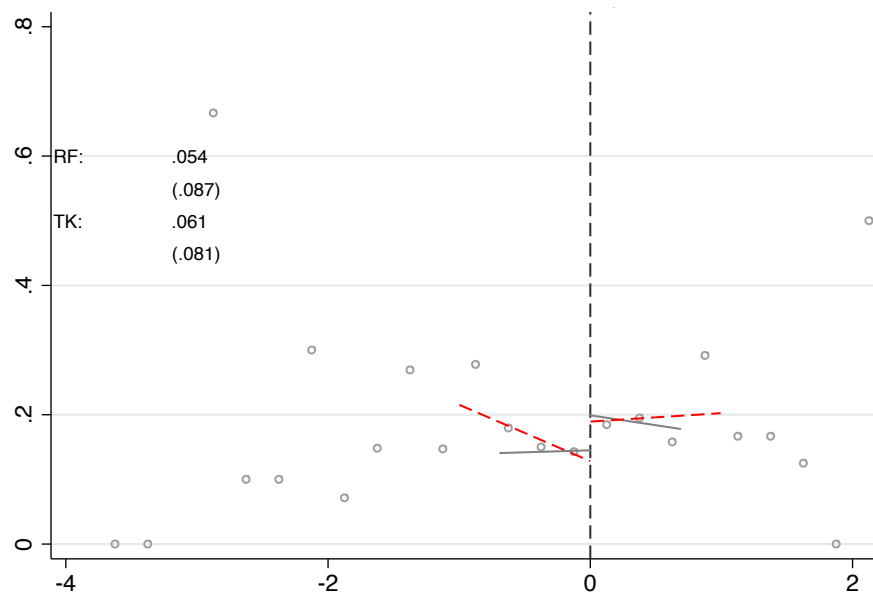
Figure 10. Shift in APP Index



Notes. Each figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of the corresponding APP index (absolute or relative, respectively) on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth of $|S_i| < 0.7$ for this sample; “TK.” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

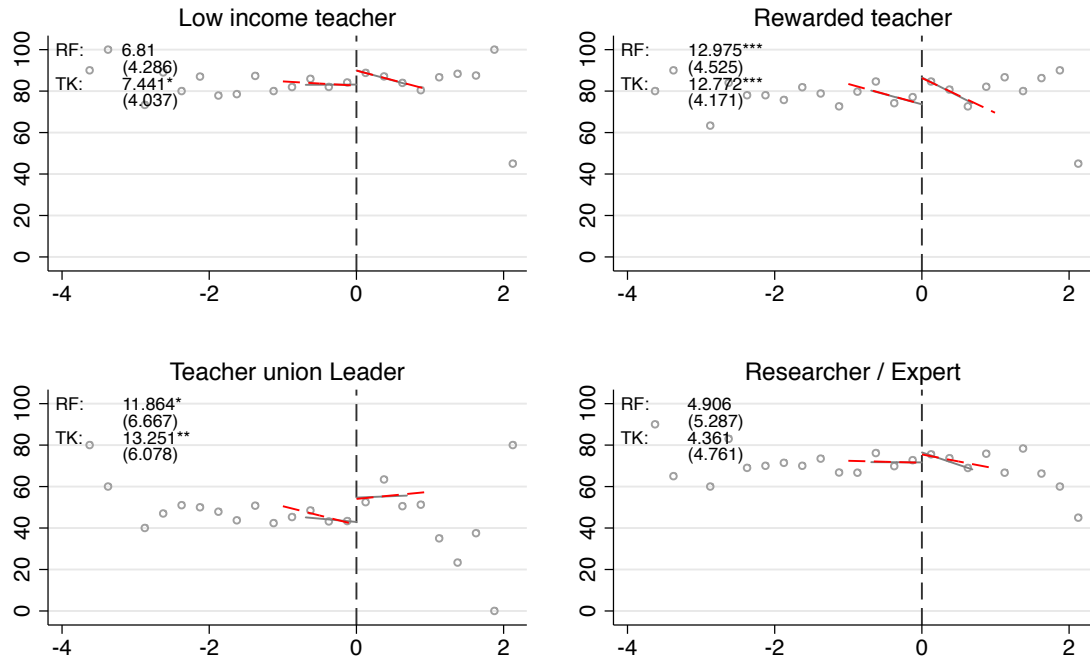
Figure 11. Change on Rate of Respondents Teaching Full Time at Time of Survey



Notes. Figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of being teaching at time of survey on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth of $|S_i| < 0.7$ for this sample; “TK” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

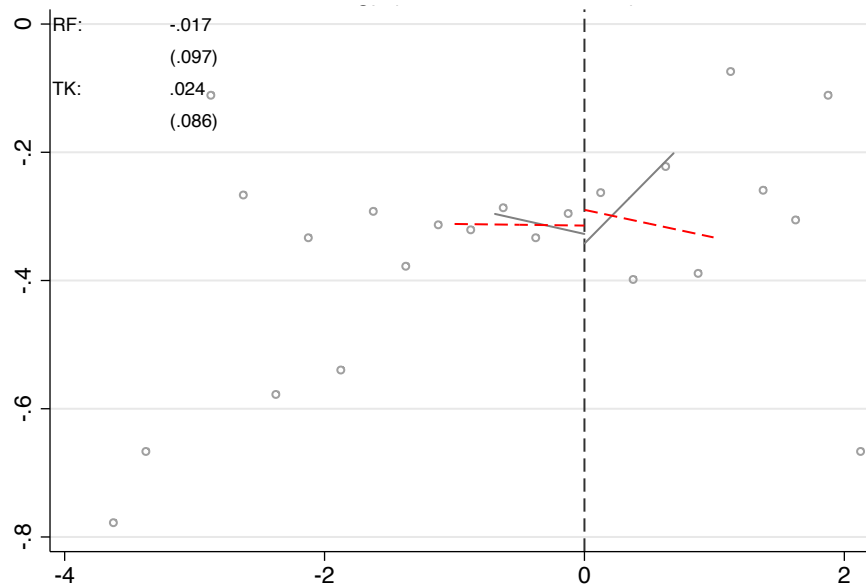
Figure 12: Changes in Interest for Teachers' Opinions.



Notes. Each figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of the corresponding teacher type opinion on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth of $|Si| < 0.7$ for this sample; “TK” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

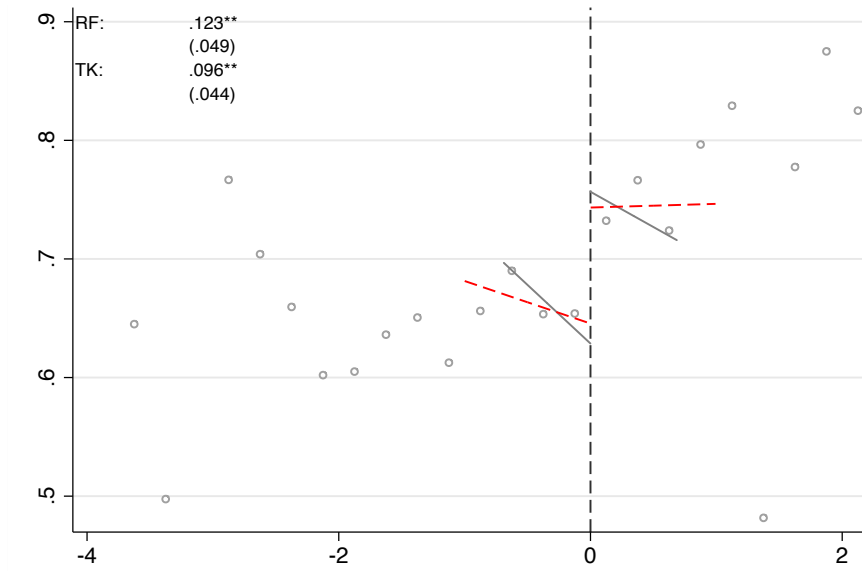
Figure 13. Change in Ideology.



Notes. Ideology score ranges from -1 (Left Ideology or Liberal) to +1 (Right Ideology or Conservative). Each figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of the self-reported ideology on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth of $|S_i| < 0.7$ for this sample; “TK” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 14: Changes in Perceived Self Efficacy in Education.



Note. Each figure presents actual and fitted values for all respondents of cohorts 2009 to 2013 who have a response on the ten main policies studied. Horizontal axis corresponds to the selection score centered at the cutoff score of the corresponding application year. Actual values are plotted in bins of size 0.25. The linear fit represented in solid line uses the IK optimal bandwidth. The linear fit in dash line uses triangular kernel weights.

Coefficients reported in the image are the result of a local regression of perceived self-efficacy on the centered selection score, an indicator variable for scoring above the cutoff score and cohort fixed effects. “RF” presents the estimate using the optimal bandwidth of $|S_i| < 0.7$ for this sample; “TK” presents the estimate using triangular kernel weights. Robust standard errors in parenthesis.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix 3A: Tables

Table A1: Comparison between applicants and survey respondents

	All Applicants			Survey Sample			Diff
	count	mean	sd	count	mean	sd	
PSU score (std)	672	0.156	0.987	370	0.131	0.993	***
Education Major	963	0.164		509	0.155		
Teaching Assistant Student Club	961	0.624		507	0.633		
Participation	962	0.807		508	0.803		
College GPA under 5.5	641	0.392		341	0.367		
College GPA over 6.0	641	0.220		341	0.240		
cohort 2009	964	0.098		509	0.092		
cohort 2010	964	0.195		509	0.175		*
cohort 2011	964	0.188		509	0.194		
cohort 2012	964	0.316		509	0.312		
cohort 2013	964	0.204		509	0.226		
N=	964			509			

Notes: Sample consists on all applicants for cohorts 2009 to 2013 (“All Applicants”) and those who have answered the 10 main policies in the survey (“Survey Sample”). PSU and GPA not available in early cohorts. Significance of ttest reported in Diff column: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A2. Balance on Pre-treatment Characteristics on Applicants and Respondents

Variable	(2) Linear S ≤1	(3) Linear S ≤0.5	(4) Linear S ≤0.25	(5) Kernel Triangular	(8) Linear S ≤1	(9) Linear S ≤0.5	(10) Linear S ≤0.25	(11) Kernel Triangular
Survey Response Rate	-.032 (.073)	.089 (.099)	.102 (.136)	.013 (.08)				
N	611	367	192	611				
Date Started Survey					7.96* (4.497)	5.027 (6.039)	3.63 (8.477)	6.79 (4.925)
Answered Survey on Mobile					.022 (.096)	-.062 (.127)	-.052 (.183)	-.013 (.104)
N					349	212	113	349
Female	.013 (.075)	.062 (.101)	.293** (.141)	.057 (.082)	.06 (.096)	.135 (.129)	.474*** (.167)	.136 (.106)
N	585	351	186	585	349	212	113	349
PSU score (std)	-.089 (.175)	-.25 (.235)	-.245 (.326)	-.173 (.191)	-.138 (.217)	-.35 (.29)	-.264 (.396)	-.26 (.239)
N	436	258	144	436	259	159	87	259
Education Major	.036 (.053)	.06 (.07)	.053 (.094)	.053 (.057)	.064 (.067)	.111 (.089)	.103 (.113)	.084 (.071)
N	610	367	192	610	349	212	113	349
Teaching Assistant	0 (.07)	-.07 (.089)	-.14 (.119)	-.035 (.073)	-.062 (.091)	-.16 (.116)	-.218 (.158)	-.124 (.095)
N	608	366	191	608	347	211	112	347
Student Club Participa	.068 (.054)	-.005 (.076)	0 (.098)	.019 (.06)	.007 (.074)	-.184* (.097)	-.24* (.127)	-.1 (.078)
N	609	367	192	609	348	212	113	348
College GPA under 5.5	-.012 (.09)	-.043 (.118)	-.095 (.165)	-.052 (.098)	.148 (.115)	.087 (.152)	-.055 (.222)	.096 (.128)
College GPA over 6.0	-.047 (.076)	-.089 (.102)	-.122 (.132)	-.035 (.081)	-.105 (.1)	-.134 (.135)	-.069 (.19)	-.092 (.11)
N	396	233	128	396	226	137	78	226
Familly ideology (-1 lib to 1 cons)					.043 (.102)	.024 (.128)	.386** (.154)	.076 (.103)
N					343	206	109	343
From Metrop. Region (capital)					.069 (.098)	.107 (.131)	-.001 (.179)	.08 (.107)
N					348	212	113	348

Table A2 cont'd

Variable	(2) Linear S <= 1	(3) Linear S <=0.5	(4) Linear S <=0.25	(5) Kernel Triangular	(8) Linear S <=1	(9) Linear S <=0.5	(10) Linear S <=0.25	(11) Kernel Triangular
Mother completed Highschool					-.032 (.069)	-.14 (.088)	-.142 (.129)	-.087 (.074)
Mother completed College					.067 (.098)	.062 (.13)	-.193 (.181)	.082 (.107)
N					348	212	113	348
Father completed Highschool					-.006 (.057)	-.121* (.064)	-.082 (.071)	-.055 (.054)
Father completed College					-.007 (.098)	.014 (.131)	.218 (.186)	.043 (.107)
N					343	208	110	343
Self reported white					.074 (.095)	.118 (.122)	.183 (.172)	.125 (.101)
Self reported native					-.046 (.04)	-.02 (.052)	0 (.038)	-.026 (.041)
Self reported mestizo					.054 (.097)	.021 (.127)	-.097 (.172)	-.001 (.104)
N					348	211	112	348
Respondents Sample					yes	yes	yes	yes

Notes: Standard errors in parenthesis. N changes per variable due to missing values. Respondent sample corresponds to all survey respondents who rated all 10 main education policies in the survey. Cohorts 2009 to 2013.

* p<0.10, ** p<0.05, ***p<0.01

Table A3. Balance on Outcome Balance Index. Diverse Bandwidths and Cohorts

	(1) Full Sample	(2) $ S \leq 1$	(3) $ S \leq 0.5$	(4) $ S \leq 0.25$	(5) Triangular weights
Sample	Balance Index				
Cohorts 2009 to 2013	-.013 (.037)	-.023 (.048)	-0.07 -0.076	0.003 (.103)	-0.039 (.064)
N=	509	349	212	113	349
Cohorts 2009 to 2014	-.017 (.033)	-.016 (.043)	-.019 (.056)	.013 (.075)	-.012 (.046)
N=	688	463	280	148	463
Cohorts 2009 to 2015	-.003 (.027)	-.011 (.037)	-.009 (.049)	.003 (.069)	-.003 (.04)
N=	924	627	377	197	627

Notes: Results from independent regressions on the Outcome Balance Index. Outcome Balance Index is the predicted value of the main outcome (the adaptive police preference index) by individual characteristics. Mean: 0.000 (0.263). Min: -.788. Max: 1.205. Sample corresponds to all survey respondents who rated all 10 main education policies in the survey, from the corresponding cohorts. Robust standard errors in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4. First Stage Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Full Sample	S ≤ 1	S ≤0.5	S ≤0.25	Triangular weights	Full Sample	S ≤ 1	S ≤0.5	S ≤0.25	Triangular weights
Outcome	First Stage Respondents					First Stage All Applicants				
Selected to join ECH	.572*** (.042)	.396*** (.069)	.515*** (.099)	.61*** (.138)	.463*** (.08)	.57*** (.033)	.376*** (.053)	.404*** (.076)	.429*** (.102)	.393*** (.06)
Teacher FT more than a year	.262*** (.066)	.233** (.092)	.295** (.124)	.425** (.179)	.264*** (.1)					
N=	509	349	212	113	349	964	611	367	192	611

Notes: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at cutoff score, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. The coefficient presented is the estimated jump at the corresponding tested score.

Columns (5) and (10) use triangular kernel weights.

Respondents Sample in models (1) to (5) corresponds to all respondents from cohorts 2009-2013 who rated all 10 key education policies (ie. those who have a value on the APP index).

Standard error in parenthesis. * p<0.10, ** p<0.05, ***p<0.01

Table A5: RD Estimate of the Change in Policy Preference at the Cutoff Score, Various Bandwidth and Weights

	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(12)	(13)	(14)	(15)	(17)	(18)	(19)	(20)
	S <= 1	S <=0.5	S <=0.25	Kernel weighted	S <=1	S <=0.5	S <=0.25	Kernel weighted	S <= 1	S <=0.5	S <=0.25	Kernel weighted	S <=1	S <=0.5	S <=0.25	Kernel weighted
	No Controls				With Controls				No Controls				With Controls			
Policy	Absolute Preferences								Relative Preferences							
Decrease Class Size	-0.07 (.067)	-0.175** (.082)	-0.227** (.106)	-0.15** (.068)	-0.087 (.067)	-0.225*** (.085)	-0.329*** (.112)	-0.186*** (.067)	-0.043 (.058)	-0.148* (.076)	-0.153 (.109)	-0.104* (.062)	-0.05 (.06)	-0.169** (.081)	-0.233** (.115)	-0.118* (.064)
Improve Infraestructur	-0.12* (.064)	-0.169* (.086)	-0.213* (.125)	-0.135* (.07)	-0.14** (.063)	-0.223** (.089)	-0.214* (.128)	-0.162** (.068)	-0.092* (.05)	-0.142** (.067)	-0.139 (.096)	-0.088 (.054)	-0.103** (.05)	-0.167** (.072)	-0.119 (.102)	-0.094* (.054)
Increase Funding	-0.113* (.058)	-0.056 (.076)	-0.126 (.107)	-0.099 (.063)	-0.126** (.062)	-0.072 (.087)	-0.039 (.141)	-0.105 (.067)	-0.085* (.046)	-0.03 (.062)	-0.051 (.093)	-0.053 (.051)	-0.089* (.05)	-0.016 (.068)	.056 (.107)	-0.038 (.053)
Facilitate Replacing Teachers	-0.059 (.081)	.006 (.103)	-.1 (.133)	-0.019 (.085)	-.07 (.083)	-.064 (.116)	-.167 (.172)	-.063 (.09)	-.03 (.07)	.032 (.088)	-.026 (.113)	.027 (.073)	-.033 (.072)	-.008 (.1)	-.072 (.142)	.004 (.077)
Increase social services	-0.121** (.058)	-0.112 (.077)	-0.154 (.106)	-0.148** (.063)	-0.141** (.06)	-0.156* (.084)	-0.146 (.115)	-0.186*** (.065)	-0.093** (.044)	-0.085 (.058)	-0.08 (.083)	-0.101** (.048)	-0.104** (.047)	-0.1 (.064)	-0.051 (.098)	-0.118** (.051)
Less Segregation	.086 (.073)	.113 (.094)	.006 (.12)	.051 (.075)	.109 (.072)	.124 (.107)	.144 (.151)	.075 (.076)	.115* (.064)	.139* (.081)	.08 (.099)	.097 (.064)	.146** (.063)	.18* (.099)	.239* (.135)	.143** (.068)
Better Principals	.052 (.058)	.076 (.078)	.104 (.113)	.041 (.066)	.045 (.061)	.064 (.085)	.059 (.131)	.026 (.069)	.081* (.045)	.102* (.06)	.178** (.086)	.088* (.05)	.082* (.047)	.12* (.066)	.154 (.101)	.093* (.053)
Better Teachers	-0.049 (.044)	-0.075 (.053)	-0.128* (.076)	-0.064 (.045)	-0.055 (.045)	-0.085 (.058)	-0.201* (.102)	-0.079* (.046)	-0.021 (.04)	-0.049 (.052)	-0.054 (.075)	-0.018 (.043)	-0.019 (.039)	-0.03 (.054)	-0.105 (.091)	-0.011 (.043)
Increase Expectations	.061 (.055)	.059 (.071)	.048 (.095)	.028 (.058)	.052 (.057)	.025 (.075)	-0.062 (.115)	-0.003 (.059)	.09** (.046)	.086 (.061)	.123 (.085)	.074 (.05)	.088* (.048)	.081 (.065)	.033 (.097)	.064 (.051)
Empower Parents	.049 (.057)	.069 (.07)	.051 (.101)	.032 (.058)	.047 (.058)	.055 (.065)	.004 (.097)	.008 (.053)	.078 (.048)	.095 (.059)	.125 (.083)	.078 (.049)	.084 (.051)	.111* (.061)	.099 (.086)	.076 (.049)
Controls					yes	yes	yes	yes					yes	yes	yes	yes
N	349	212	113	349	349	212	113	349	349	212	113	349	349	212	113	349

Note: Coefficients at cutoff score from independent linear regressions allowing slope to vary before and after the threshold, using cohort fixed effects. Robust standard errors reported in parenthesis. Sample includes all respondents of cohorts 2009 to 2013 who had an answer in all policies, updated 2016-07-15. Controls included: all those from table A2. Missing values imputed at 0 and the corresponding missing dummy was added. * p<0.1, ** p<0.05, ***p<0.01

Table A6: RD estimate of Policy Preference Change by Diverse Cohort Samples

Policy	(9)	(11)	(9)	(11)	(9)	(11)	(9)	(11)	(9)	(11)	(9)	(11)
	Linear	Kernel	Linear	Kernel	Linear	Kernel	Linear	Kernel	Linear	Kernel	Linear	Kernel
	S <=0.5	Wgt.	S <=0.5	Wgt.	S <=0.5	Wgt.	S <=0.5	Wgt.	S <=0.5	Wgt.	S <=0.5	Wgt.
	Absolute		Relative		Absolute		Relative		Absolute		Relative	
	Cohorts 2009-2013				Cohorts 2009-2014				Cohorts 2009-2015			
Decrease Class Size	-.225*** (.085)	-.186*** (.067)	-.169** (.081)	-.118* (.064)	-.184** (.08)	-.157** (.063)	-.16** (.077)	-.122** (.06)	-.089 (.073)	-.068 (.058)	-.127* (.066)	-.093* (.051)
Improve Infrastructure	-.223** (.089)	-.162** (.068)	-.167** (.072)	-.094* (.054)	-.116 (.083)	-.095 (.064)	-.092 (.067)	-.06 (.051)	-.036 (.075)	-.038 (.058)	-.074 (.058)	-.062 (.044)
Increase Funding	-.072 (.087)	-.105 (.067)	-.016 (.068)	-.038 (.053)	-.038 (.073)	-.073 (.056)	-.014 (.058)	-.038 (.044)	-.008 (.065)	-.05 (.05)	-.046 (.051)	-.074* (.038)
Facilitate Replacing Teach	-.064 (.116)	-.063 (.09)	-.008 (.1)	.004 (.077)	-.066 (.104)	-.034 (.078)	-.042 (.091)	0 (.068)	-.022 (.09)	.035 (.068)	-.06 (.077)	.011 (.057)
Increase social services	-.156* (.084)	-.186*** (.065)	-.1 (.064)	-.118** (.051)	-.077 (.075)	-.099* (.058)	-.053 (.058)	-.064 (.044)	.059 (.072)	.015 (.056)	.022 (.054)	-.008 (.041)
Less Segregation	.124 (.107)	.075 (.076)	.18* (.099)	.143** (.068)	.106 (.093)	.081 (.066)	.13 (.085)	.116** (.058)	.191** (.084)	.157** (.061)	.153** (.073)	.133** (.051)
Better Principals	.064 (.085)	.026 (.069)	.12* (.066)	.093* (.053)	.087 (.075)	.037 (.06)	.111* (.059)	.072 (.047)	.105 (.07)	.057 (.056)	.067 (.055)	.033 (.042)
Better Teachers	-.085 (.058)	-.079* (.046)	-.03 (.054)	-.011 (.043)	-.05 (.054)	-.046 (.043)	-.025 (.05)	-.011 (.039)	.015 (.053)	.014 (.042)	-.022 (.044)	-.01 (.033)
Increase Expectations	.025 (.075)	-.003 (.059)	.081 (.065)	.064 (.051)	.022 (.065)	0 (.052)	.047 (.056)	.034 (.044)	.059 (.061)	.044 (.049)	.022 (.049)	.02 (.038)
Empower Parents	.055 (.065)	.008 (.053)	.111* (.061)	.076 (.049)	.074 (.063)	.038 (.049)	.098* (.057)	.073* (.044)	.103* (.058)	.076 (.046)	.065 (.054)	.052 (.04)
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	212	349	212	349	280	463	280	463	377	627	377	627

Notes: Absolute rates range from -1 to 1 (average sd. =0.342). Relative rates could range from -2 to 2 (average sd.=0.278).

Table A7: Robustness check of the ITT effect on Adaptive Policy Preference Index in different samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Linear	Linear	Linear	Linear	Kernel	Linear	Linear	Linear	Linear	Kernel
	Full Sample	S <= 1	S <=0.5	S <=0.25	Triangular	Full Sample	S <=1	S <=0.5	S <=0.25	Triangular
Outcome	No Controls					With Controls				
A) Cohorts 2009-2013 (Main Sample)										
Absolute APP Index	.342**	.532***	.638***	.912***	.595***	.376**	.585***	.805***	.801**	.669***
	(.145)	(.179)	(.235)	(.303)	(.192)	(.147)	(.183)	(.241)	(.357)	(.19)
Relative APP Index	.356**	.552***	.687***	.87***	.574***	.385***	.592***	.798***	.67*	.597***
	(.14)	(.175)	(.23)	(.314)	(.187)	(.141)	(.183)	(.233)	(.362)	(.184)
Controls						yes	yes	yes	yes	yes
N=	509	349	212	113	349	509	349	212	113	349
B) Cohorts 2009-2014 (All graduated cohorts)										
Absolute APP Index	.253**	.328**	.538**	.838***	.456***	.275**	.366**	.59***	.68**	.497***
	(.124)	(.158)	(.209)	(.274)	(.17)	(.127)	(.164)	(.221)	(.318)	(.172)
Relative APP Index	.31**	.389**	.594***	.858***	.472***	.314**	.416**	.636***	.685***	.49***
	(.123)	(.156)	(.206)	(.283)	(.168)	(.125)	(.163)	(.218)	(.337)	(.17)
Controls						yes	yes	yes	yes	yes
N=	688	463	280	148	463	688	463	280	148	463
C) Cohorts 2009-2015 (All Cohorts)										
Absolute APP Index	.208*	.192	.267	.628**	.248	.22**	.208	.294	.588*	.256
	(.109)	(.142)	(.192)	(.263)	(.153)	(.11)	(.147)	(.205)	(.315)	(.158)
Relative APP Index	.296***	.338**	.443**	.718***	.381***	.305***	.349**	.472**	.618**	.384**
	(.107)	(.136)	(.181)	(.256)	(.145)	(.107)	(.141)	(.196)	(.297)	(.151)
Controls						yes	yes	yes	yes	yes
N=	924	627	377	197	627	924	627	377	197	627

Note: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at cutoff score, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. The coefficient presented is the estimated jump at the corresponding tested score. Columns (6)-(10) include controls listed in Table 2, with simple imputation. Columns (5) and (10) use triangular kernel weights. Sample corresponds to all respondents from corresponding cohorts who rated all 10 key education policies. Robust Standard error in parenthesis.

* p<0.10, ** p<0.05, ***p<0.01

Table A8a: RD falsification check. Change in adaptive policy index using -0.5 as cutoff score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
	Full Sample	S <= 1	S <=0.5	S <=0.25	Full Sample	S <=1	S <=0.5	S <=0.25
	No Controls				With Controls			
Index	Adaptive Policy Preference Index							
A) Cohorts 2009-2013 (Main Sample)								
Absolute	-.086	-.195	-.135	-.402	-.088	-.238	-.121	-.156
	(.146)	(.203)	(.307)	(.527)	(.148)	(.209)	(.319)	(.557)
Relative	.014	-.091	.155	.013	.037	-.136	.144	.458
	(.145)	(.198)	(.291)	(.509)	(.148)	(.207)	(.321)	(.538)
N=	509	347	181	97	509	347	181	97
B) Cohorts 2009-2014 (All graduated cohorts)								
Absolute	-.02	-.183	-.132	-.408	-.025	-.222	-.102	-.487
	(.13)	(.177)	(.256)	(.401)	(.13)	(.179)	(.272)	(.427)
Relative	.116	-.055	.155	-.109	.121	-.088	.158	-.092
	(.136)	(.187)	(.266)	(.398)	(.138)	(.193)	(.301)	(.428)
N=	688	458	233	124	688	458	233	124
C) Cohorts 2009-2015 (All Cohorts)								
Absolute	.07	-.146	-.025	-.363	.073	-.158	.025	-.463
	(.113)	(.156)	(.221)	(.337)	(.113)	(.155)	(.229)	(.336)
Relative	.095	-.141	.1	-.13	.106	-.15	.147	-.155
	(.115)	(.159)	(.225)	(.329)	(.115)	(.16)	(.241)	(.343)
N=	924	618	317	171	924	618	317	171

Note: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at false cutoff score of -0.5, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. The coefficient presented is the estimated jump at the corresponding tested score (ie, - 0.5), standard errors in parenthesis. Columns (5)-(8) include controls listed in Table 2, with simple imputation. No coefficient is significant at the 90% level. Sample corresponds to all respondents who rated all 10 key ed. policies, and who applied to the cohorts indicated in the corresponding panel.

Table A8b: RD falsification check. Change in adaptive policy index using +0.5 as cutoff score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
	Full Sample	S <= 1	S <=0.5	S <=0.25	Full Sample	S <=1	S <=0.5	S <=0.25
	No Controls				With Controls			
Index	Adaptive Policy Preference Index							
A) Cohorts 2009-2013 (Main Sample)								
Absolute	.127	-.03	.358	-.277	.15	.004	.367	-.424
	(.201)	(.251)	(.346)	(.496)	(.209)	(.255)	(.37)	(.547)
Relative	.193	.13	.495	-.182	.22	.16	.47	-.304
	(.193)	(.238)	(.331)	(.495)	(.201)	(.244)	(.353)	(.528)
N=	509	286	168	79	509	286	168	79
B) Cohorts 2009-2014 (All graduated cohorts)								
Absolute	.136	.05	.296	-.225	.11	.014	.263	-.136
	(.166)	(.202)	(.277)	(.389)	(.174)	(.212)	(.317)	(.531)
Relative	.119	.039	.288	-.151	.079	-.019	.176	-.155
	(.162)	(.196)	(.27)	(.394)	(.169)	(.204)	(.303)	(.504)
N=	688	383	230	113	688	383	230	113
C) Cohorts 2009-2015 (All Cohorts)								
Absolute	.106	.05	.112	-.318	.098	.042	.047	-.258
	(.143)	(.179)	(.25)	(.345)	(.144)	(.182)	(.266)	(.402)
Relative	.135	.051	.15	-.256	.114	.018	.044	-.255
	(.137)	(.17)	(.236)	(.337)	(.138)	(.17)	(.25)	(.372)
N=	924	511	310	152	924	511	310	152

Note: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at false cutoff score of +0.5, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. The coefficient presented is the estimated jump at the corresponding tested score (ie, +0.5), standard errors in parenthesis. Columns (5)-(8) include controls listed in Table 2, with simple imputation. All coefficients are not significant at the 90% level. Sample corresponds to all respondents who rated all 10 key ed. policies, and applied to the cohorts indicated in the corresponding panel.

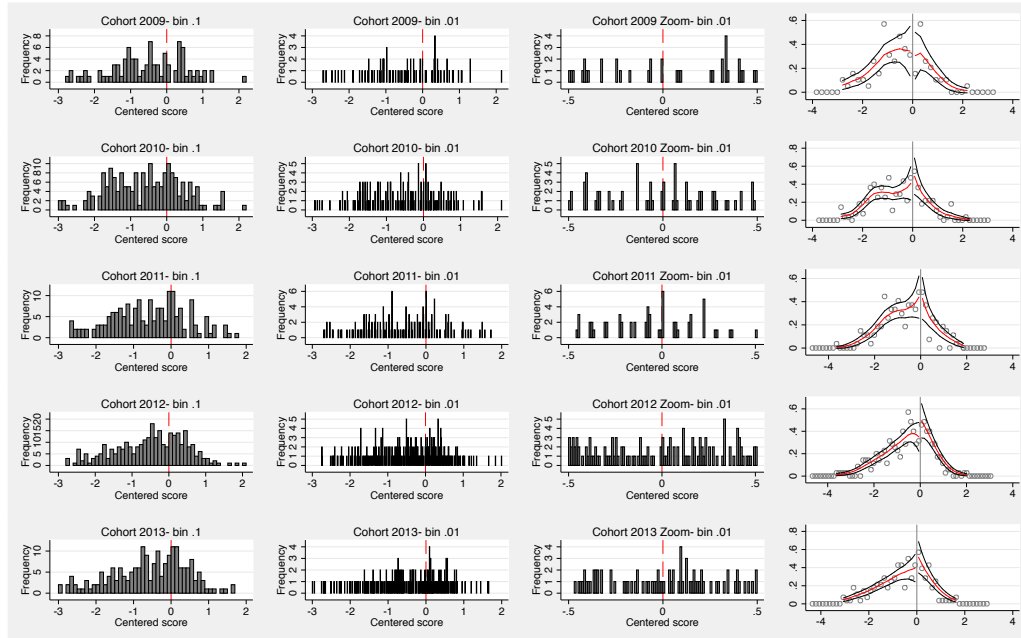
Table A9: Balance on Outcome Balance Index on subgroups

	(1) Full Sample	(2) $ S \leq 1$	(3) $ S \leq 0.5$	(4) $ S \leq 0.25$	(5) Triangular weights
Sample	Balance Index				
Non-Education degree	0	.002	-.033	.035	-.01
	(.046)	(.062)	(.076)	(.101)	(.065)
N=	430	295	182	98	295
Liberal family	-.03	-.049	-.024	-.09	-.052
	(.042)	(.053)	(.066)	(.097)	(.054)
N=	300	199	115	61	199
Conservative family	-.003	.031	-.019	-.004	.024
	(.053)	(.074)	(.094)	(.133)	(.079)
N=	201	144	91	48	144

Notes: Each coefficient is estimated through independent linear regressions, controlling for forcing variable centered at cutoff score, cohort fixed effects and a dummy indicating if applicant is above the tested threshold or not. Slope is allowed to vary at each side of the tested threshold. The coefficient presented is the estimated jump at the corresponding tested score on the subgroup specified in the left. Robust Standard error in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

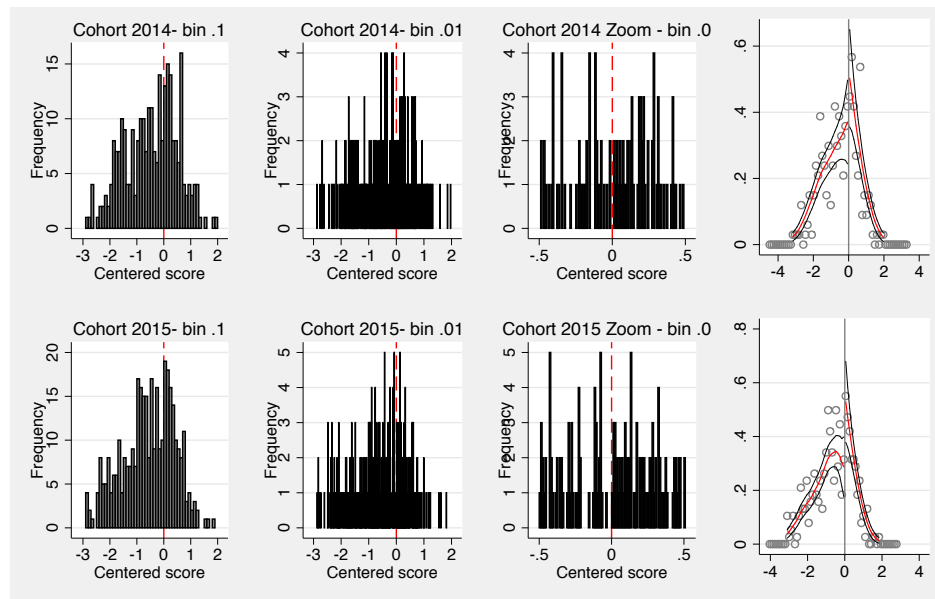
Appendix 3B: Figures

Figure A1: Manipulation Check and McCrary test by Cohort



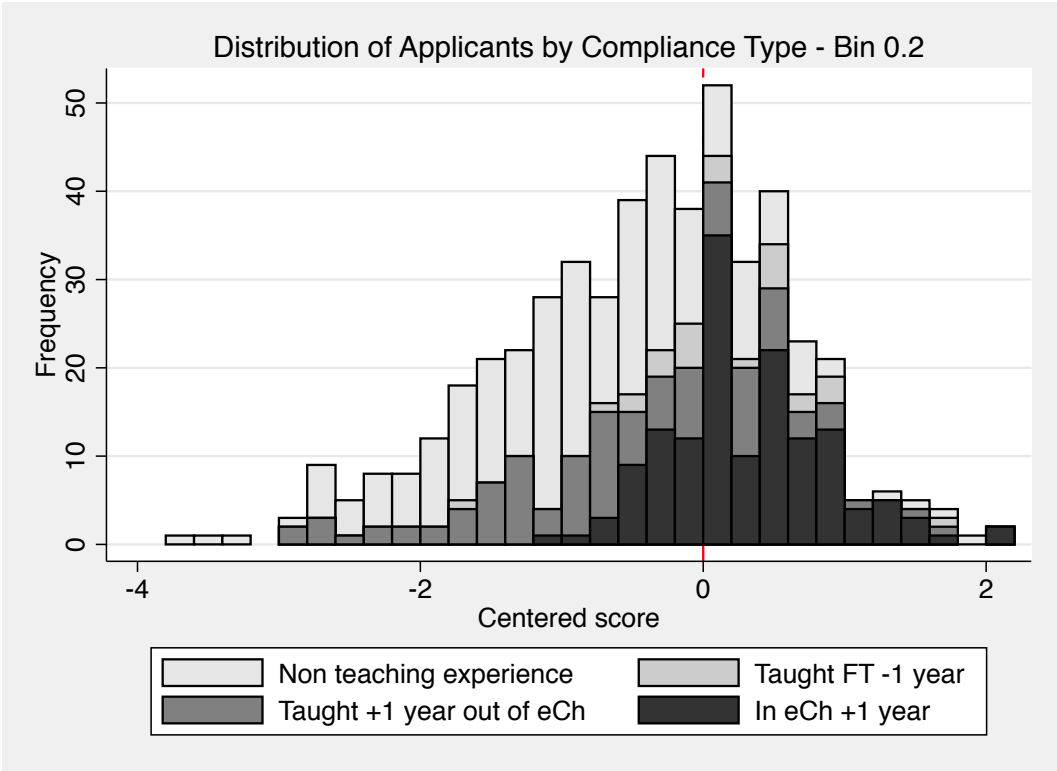
Notes: X axis: Selection score centered in cutoff score.
McCrary Discontinuity estimates (default bins), Cohort 2009: -.139 (.574), t-value: -.243. **Cohort 2010:** .264 (.371), t-value: .711.
Cohort 2011: .018 (.343), t-value: .052. **Cohort 2012:** .439 (.282), t-value: 1.556. **Cohort 2013:** .325(.291), t-value: 1.116

Figure A2: Density of selection score and McCrary test of cohorts 2014 and 2015 (not included in the sample)



Notes: X axis: Selection score centered in cutoff score.
McCrary Discontinuity estimates (default bins), Cohort 2014: .338 (.252), t-value: 1.341. **Cohort 2015:** .684 (.277), t-value: 2.469.

Figure A3: Distributions of respondent compliance type across forcing variable. Cohorts 2009-2013



Appendix 3C: Relevant Survey Items (English translation)

Welcome, thank you for participating.

This is an invitation for you to participate in a study conducted by Stanford University about your views on education and other areas. This will take about 30 minutes.

Your answers are confidential and participation is voluntary. There are no known risks associated with this study. You can end your participation at any time or not to answer a question.

If you have any questions about this study, please write to the following email address StanfordStudyPublicPolicy@stanford.edu.

External Contact: If you are not satisfied with how this study is being carried out or have a concern, a complaint, general questions about the research, or your rights as a participant, please the office of Institutional Review at Stanford University at +1(866)680-2906.

Declaration

- ☐ I have read this document and by pressing this button >> I declare that I agree to participate.
- ☐ I have read this document and will not answer the survey.

We begin the survey by asking if you have any experience in education, we will ask for more details as the survey proceeds.

Do you have a teaching certification or degree?

- ☐ Yes (enter the year it was obtained) _____
- ☐ In progress (enter the year the program began) _____
- ☐ No

Have you ever worked as a school teacher (1st to 12th grade) with a contract of 25 hours a week or more?

- ☐ Yes, I am currently a full-time teacher (or part-time for at least 25 hours / week)
- ☐ Yes, but I'm currently a part-time school teacher working less than 25 hours / week.
- ☐ Yes, but now I'm no longer a school teacher.
- ☐ No, I've never worked full-time as a teacher, but I have worked as a part-time school teacher less than 25 hours a week.
- ☐ No, I have never worked as a school teacher.

[If selected any of the "yes" alternatives in the previous question]

Fill out the years you have worked as a full-time instructor (25 or more hours per week).

Consider all the years you worked as a teacher (in primary or secondary education) even if you changed the institution where you taught or you went years without teaching. If there were interruptions in the years you were teaching, please indicate in the last field.

Started:

Finished:

Interruption:

Poor students' schools are lower quality	☐	☐	☐	☐	☐
Poverty affects students' learning (e.g. bad nutrition, problems at home)	☐	☐	☐	☐	☐
Systemic injustices perpetuate inequity throughout society	☐	☐	☐	☐	☐
Education policy design is disconnected from the classroom	☐	☐	☐	☐	☐

Moving forward, we will ask you questions about your work and professional experience.

For starters, think of all the activities -paid and not paid- in which you are involved in today. Check all categories that you identify with. Consider those activities to do with social leanings or social services, any public service activity or working for the benefit of others (eg. Government, student center, work in public policy, campaigns or political parties, organizations environmental protection, health, etc.) .

- ☐ I am involved in an activity that impacts education or education related issues
- ☐ I am involved in an activity that helps low-income communities or is related to improving the quality of life for those in low-income communities
- ☐ I am involved in an activity that has social inclinations or is focused on social service
- ☐ I am involved in an organization that I founded
- ☐ None of the above

Have you done any volunteer work or unpaid activities in any of the following areas during 2015? Check the activities which you were involved in this year. (Do not count non-paid hours you do as complement to your paid work- ie. staying after school to help a student if you are a teacher. Only count hours you volunteer that are not related to your primary paid job)

	Two or more hours a week	Approximately one hour a week	Approximately one to three hours per month	Sporadically (not monthly)	I have not done volunteer activities in this area
- Volunteering in education or education related (e.g. Tutor, collaborating with educational foundation, or school, etc.) - Volunteering with low-income communities or related to low-income communities (e.g. Construction of houses, food assistance, etc.) - Other volunteering (e.g. Local government, environment, student center, consulting entrepreneurs, etc.)					

Have you founded or co-founded an organization or a program since {application year} (Check all that apply):

- ☐ A non-profit organization
- ☐ A for-profit organization
- ☐ A program or project that does not have a legal identity
- ☐ I have not created any of the above

Do any of these organizations or programs work in or are related to the following topics? (Check all that apply).

- ☐ Education
- ☐ Low-income communities
- ☐ Neither of the previous

If they do, please share information on the organization or program, such as their name, mission, website, or the objectives of the program(s) or organization(s). Please note that we will not include this information or other data that can lead to identification in any report. This information is confidential.

Name/s

Web site/s

Main purpose or mission

Founding year

Please rate how confident you are in being able to carry out the following actions listed below. Rate your level of confidence in carrying out these actions with a number from 0 to 100 with the following scale:

0 = I am unable to carry out the action at all

50 = I can moderately carry out the action

100 = I am confident I can carry out the action

Slider: 0 _____ 100

- Stand up for others when they are treated unfairly
- I don't think about terrible experiences
- Influencing decisions that will occur in your community
- Influencing decisions that will occur in your country
- Achieve a positive impact on low-income communities
- Achieve a positive impact on education
- Navigating government bureaucracy to accomplish a goal

With the objective of forming your views on public policies in education, how interested would you be in hearing the opinion of:

Slider: 0 _____ 100

- A teacher working in low-income communities in Chile?
- A teacher nationally recognized as an excellent teacher?
- Leader of a teachers' union?
- An expert/academic researcher?

How often do you read local, regional or national news related to education?

- ☐ Daily
- ☐ A couple times a week
- ☐ A couple of times a month
- ☐ Less than once a month
- ☐ Never

Think about where you mainly grew up, the place you call home. If this place is in Chile, select the region. If this is not in Chile select "International".

- ☐ List of regions in Chile
- ☐ International

In general, how satisfied are you with your life?

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Somewhat dissatisfied
- ☐ Very dissatisfied

What is the highest level of education attained by your mother or female guardian?

What is the highest level of education attained by your father or male guardian?

- ☐ No formal education
- ☐ Incomplete elementary education
- ☐ Completed elementary education
- ☐ Incomplete High school
- ☐ Completed High school
- ☐ Incomplete vocational/technological education
- ☐ Completed vocational/technological education
- ☐ University education incomplete
- ☐ University education completed
- ☐ Postgraduate (masters or doctorate)

Do you consider yourself white, mestizo, indigenous, or other?

- ☐ White
- ☐ Indigenous
- ☐ Mestizo
- ☐ Other: _____

Appendix 3D: Creation of APP Index Weights from MTurk Workers

Amazon Mechanical Turk (MTurk) is a crowdsourcing Internet marketplace that enables users to access human resources to complete various tasks. I took advantage of this service to have an external source rating the policies listed in my study on their level of *adaptiveness*, as defined by Ronald Heifetz.

I sent the survey to the MTurk and seventy-five English speaker MTurk workers responded it in one day. They completed the survey listed below. The survey provided a definition of adaptive vs technical solutions and challenges. Second, the survey presented the list of ten policies used in my study and asked workers to rate them on a technical-adaptive scale. Workers were asked to rate the policies twice, in two different formats where (a five category format- Format A- and a 0 to 100 slider- Format B). Question formats were presented randomly to each worker and are listed below.

To create the MTurk weights I scaled responses to be between -1 to 1 in each format. The zero in the five-scale-response format (ie. Format A) was given to the middle alternative. The zero in the 0-100 slider format (ie. Format B) corresponded to the point 50. For each policy, I averaged the worker's response submitted in each format. Cronbach reliability coefficient between the two formats was above .70 for each policy with the exception of the policy proposing de-segregation (alpha= .59), and the policy proposing to empower parents (alpha=.62).

The final weights consisted on the average of all average responses:

$$Weight_i = \sum_{j=1}^{J=77} \frac{Format A_{ij} + Format B_{ij}}{2 * 77}$$

where $Weight_i$ corresponds to the weight used for policy i . Figure 2 reports the weights estimated for each policy through this system. $Format A_{ij}$ and $Format B_{ij}$ correspond to the score given by MTurk worker j to policy i . Weights ranged from -0.464, for the proposal of decreasing classroom size, to 0.275 for the proposal of empowering parents.

The final APP index for the ECH survey respondent was created by adding all ten policies rates of the respondent, weighted by the MTurk index.

Survey presented to MTURK respondents

-----Start-----

Thanks for accepting this task.

We need to classify a list of strategies as adaptive or technical to use in research about leadership and education.

Your work in classifying this list of strategies will allow us to guide educational leaders in their challenges.

Task:

- We will explain you what "adaptive" and "technical" solutions are
- Then we will give you a list of solutions to rate as "adaptive" or "technical".
- We will ask your to rate the same strategies twice.

Thanks for your thoughtful work.

-----New Page-----

Definition of Technical and Adaptive Solutions

Heifetz explains:

- Technical challenges are generally solved by an improvement in current practices.
- Adaptive challenges have no known procedures or outcomes and require a deeper questioning of fundamental assumptions and values. Solving adaptive challenges requires significantly more effort, a tolerance for uncertainty, and the presence of different voices.

In this line, challenges can be approached by technical or adaptive solutions (or something in between). This is the definition for each type of solution:

Technical solution:

- Can be provided by an expert or an authority.
- It is easy to follow: there are steps that define the solution. It is possible to follow the steps and the solution will be implemented.
- It will solve a problem that is clearly defined.

Technical and Adaptive solution:

- The problem to fix is clearly identified (as in the pure technical solution), but the solution requires learning of certain knowledge or skills.
- Authorities and followers are responsible for the solution.
- The end state is clearly defined.

Purely Adaptive solution:

- The problem to solve is not clear- requires to be defined.
- The solution is not clear, requires new constant learning.
- The solution is difficult to implement (mainly because it is not clearly defined and there is no recipe to follow). It needs many iterations, learning and re-definitions.
- The responsibility of the solution resides in the people (not an authority or expert). It requires the involvement of people throughout a system.
- Involves changes in perspectives, attitudes, habits.

Now we ask you to classify each strategy in the following list as technical or adaptive solution.

These strategies are solutions to the question *¿How can we ensure that low income students have the same educational opportunities than the rest of the students in the country?*

Some strategies may propose technical solutions, others may propose adaptive solutions, or they can be a mix of both. Please select the category that best represents how you would classify the strategy in the adaptive-technical spectrum.

[Randomly offer respondent Format A or Format B first, then the other]

-----Format A-----
[a matrix was displayed with the policies as rows and the following five options as columns. Respondents are required to select one column per policy. Scores given for each column are in parenthesis, and were not displayed to the respondent]

	Adaptive	More adaptive than technical	Both adaptive and technical	More technical than adaptive	Technical
	(1)	(0.5)	(0)	(-0.5)	(-1)

Increase school funding.
Improve quality of teachers.
Improve quality of school principals.
Focus efforts in increasing the expectations that teachers, principals and parents have for students.
Improve social services to the poor (health, nutrition, etc)
Increase empowerment of parents to support and defend their children education.
Promote the integration of students with low and high socioeconomic levels in the same school.
Improve infrastructure of schools.
Make it easier to replace ineffective teachers.
Decrease class size (amount of students per class)

-----New Page-----

Now we ask you to rate the solutions again, in a slightly different format.

-----New Page-----

[Repeat information about Adaptive vs Technical]

[Repeat header]

-----Format B-----

[Respondent was required to assign a value to policy in a slider ranging from 0 (Not adaptive at all) to 100 (Completely adaptive), with labels “Somewhat adaptive” and “Fairly adaptive” at 30 and 60 points respectively . The value assigned to the response was the location on the slider]

- Increase school funding
- Improve quality of teachers
- Improve quality of school principals
- Focus efforts in increasing the expectations that teachers, principals and parents have for students
- Improve social services to the poor (health, nutrition, etc)
- Increase empowerment of parents to support and defend their children education
- Promote the integration of students with low and high socioeconomic levels in the same school.
- Improve infrastructure of schools.
- Make it easier to replace ineffective teachers.
- Decrease class size (amount of students per class)

-----New Page-----

Thank you for your thoughtful work. The code to include in MTURK is the following:

`{e://Field/CODE}`. If you want to give any comment or suggestion, please do so below:
