

WORKING PAPER N° IDB-WP-1658

Becoming a Teacher:

Experimental Evidence from an Information Intervention

Mariana Alfonso
Matias Busso
Hugo Ñopo
Antonella Rivera
Triana Yentzen

Inter-American Development Bank
Department of Research and Chief Economist

November 2024



Becoming a Teacher:

Experimental Evidence from an Information Intervention

Mariana Alfonso*

Matias Busso*

Hugo Ñopo**

Antonella Rivera*

Triana Yentzen***

* Inter-American Development Bank

** World Bank

i*** University of Michigan

Inter-American Development Bank
Department of Research and Chief Economist

November 2024

**Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library**

Becoming a teacher: experimental evidence from an information intervention / Mariana Alfonso, Matias Busso, Hugo Ñopo, Antonella Rivera, Triana Yentzen. p. cm. — (IDB Working Paper Series ; 1658)

Includes bibliographic references.

1. Civil service reform-Peru. 2. Teaching-Vocational guidance-Peru. 3. Education and state-Peru. I. Alfonso, Mariana. II. Busso, Matías. III. Ñopo, Hugo. IV. Rivera, Antonella. V. Yentzen, Triana. VI. Inter-American Development Bank. Department of Research and Chief Economist. VII. Series IDB-WP-1658

<http://www.iadb.org>

Copyright © 2024 Inter-American Development Bank ("IDB"). This work is subject to a Creative Commons license CC BY 3.0 IGO (<https://creativecommons.org/licenses/by/3.0/igo/legalcode>). The terms and conditions indicated in the URL link must be met and the respective recognition must be granted to the IDB.

Further to section 8 of the above license, any mediation relating to disputes arising under such license shall be conducted in accordance with the WIPO Mediation Rules. Any dispute related to the use of the works of the IDB that cannot be settled amicably shall be submitted to arbitration pursuant to the United Nations Commission on International Trade Law (UNCITRAL) rules. The use of the IDB's name for any purpose other than for attribution, and the use of IDB's logo shall be subject to a separate written license agreement between the IDB and the user and is not authorized as part of this license.

Note that the URL link includes terms and conditions that are an integral part of this license.

The opinions expressed in this work are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.



Abstract

Education systems seeking to improve outcomes must attract, develop, and retain highly effective teachers. A critical challenge is making the teaching profession appealing to talented youth. This paper presents evidence from an experiment in Peru, where we provided high school seniors with information about recent reforms to the teaching career. We find positive effects on both the extensive and intensive margins: treated students were more likely to enroll in higher education and to choose an education major. These results suggest that career incentives and information can shape not only the current teaching workforce but also future cohorts.

JEL classifications: I28, I23, J40, O10

Keywords: Civil service reform, Education policy, Teachers, Information treatment, Randomized control trial, Peru

Alfonso: Inter-American Development Bank (marianaa@iadb.org). Busso: Inter-American Development Bank (mbusso@iadb.org). Ñopo: The World Bank (hugonopo@gmail.com). Rivera: Inter-American Development Bank (antonellar@iadb.org). Yentzen: University of Michigan (trianay@umich.edu). For helpful discussion and comments, we thank seminar participants at the LACEA conference and at the IDB. A much earlier version of this paper circulated under the title “Civil Service Reform and Self-Selection into Teaching: Experimental Evidence from an Information Intervention.” The authors declare that they have no relevant or material financial interests that relate to the research described in this paper. The opinions expressed in this document are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, The World Bank, their Board of Directors, or the countries they represent. Errors are our own.

1 Introduction

Historically, Latin American countries have struggled to attract the best candidates to the teaching profession, resulting in low teaching and education quality (Elacqua et al., 2018b). Teacher salaries are generally low, with little or no rewards for teaching quality, and their distribution is more compressed compared to other professions (Mizala et al., 2014). In response, a growing number of countries have implemented teacher reforms designed to attract, develop, and retain high-quality teachers (OECD, 2019). These reforms aim not only to improve the economic conditions of teachers but also, more importantly, to elevate the social status of the teaching profession. An important question is whether the incentives provided by these reforms to current teachers can influence the career choices of future cohorts. This is particularly relevant given that many talented high school graduates often choose professions other than education, where their skills are more highly rewarded (Corcoran, 2007). In this paper, we analyze the results of a randomized control trial designed to encourage high school students to choose a teaching career by providing information about nationwide reforms aimed at enhancing the teaching profession in Peru.

Implemented between 2012 and 2015 in Peru, the reforms brought new career structures and evaluation frameworks to attract, remunerate, and retain high-quality teachers. These reforms emphasized merit-based promotions and periodic performance evaluations. As part of these changes, the basic salary for all teachers was raised by increasing the fixed hourly rate and adding hardship bonuses. Additionally, candidates for public teaching positions were required to pass a national qualifying exam, with top scorers receiving a substantial bonus. A scholarship system for students pursuing education majors was also established to further attract high-quality candidates to the teaching profession.

To estimate the impact of the reform on career choice, we analyze the results of a randomized control trial designed to encourage high school students to pursue a career in teaching. The intervention, conducted in November 2015, consisted of information sessions for senior high school students regarding the changes to the teaching profession. The main component of these sessions was the presentation of audiovisual materials. They covered topics such as the social and emotional benefits of being a teacher, wages under the new law, the merit-based structure of the new teaching career, teachers benefits, and information on scholarships for education majors. We randomly assigned 80 schools to the treatment group and 120 schools to the control group. Our study relies on multiple data sources: the Peruvian school census, a baseline survey collected before the intervention, a mid-line survey conducted only among treatment students, and a questionnaire administered three years after the intervention.

Our results are as follows. Immediately after the intervention, the reactions of treated students indicate that, although perceptions of a teaching career significantly improved and it was viewed as more attractive, this did not lead to a greater intention to pursue the career. In the long run, we find that exposure to the information treatment affected the decisions of the treated high school students both in the extensive and intensive margins. We find that the treatment resulted in a 2.7 percentage points increase in the probability of pursuing higher education compared to those in the control group. The treatment increased the likelihood of enrolling in an education major by 0.9 percentage points. Although the point estimates for the probability of studying education are small, their significance is highly relevant given that only 78 students choose a career in education. Thus, a 0.9 percentage point increase translates to an 82 percent rise in the number of students choosing an education major. The treatment effect was primarily driven by female students, those of a lower socioeconomic status, students with lower mathematical performance, those exhibiting high levels of patience, students who had prior knowledge of the changes in the teaching career, and those with a more favorable initial perception of a teaching career.

Our paper contributes to the literature studying the effects of teacher reforms aimed at enhancing the social status of the teaching profession. In Latin America, the currently available empirical evidence on the effectiveness of these reforms is still limited. Existing studies typically focus on the merit-based selection procedures introduced by the reforms and their impacts on teacher quality and student achievement. For instance, research on Colombia’s teacher reform, implemented in 2005, which introduced a centralized merit-based teacher hiring system, has shown mixed results regarding its effectiveness. [Brutti and Sánchez \(2022\)](#) provide evidence that the new hiring system improves student achievement by 7% of a standard deviation, while [Ome \(2012, 2013\)](#) find no effect of the newly regulated teachers on test scores. Additionally, [Busso et al. \(2024\)](#) find evidence that the reform decreased student achievement by 8% of a standard deviation. The authors suggest that these negative effects are driven by an increase in students’ exposure to less experienced teachers. Although novice teachers hired under the new system had higher pre-college test scores, the reform reduced the overall stock of teacher experience. However, a pending issue in Colombia and most of Latin America is still selection into the teaching profession and human capital formation ([Balcázar and Ñopo, 2016](#)).

In other countries, such as Mexico and Ecuador, the evidence is also mixed. In Mexico, [Estrada \(2019\)](#) finds that moving from no rule-based hires to only rule-based hires, based on a standardized exam introduced by the 2008 reform, increases student achievement in schools. However, the author does not find a statistical association between teachers’ university GPA (or other observed characteristics) and their performance. In Ecuador, a 2007

reform required teacher candidates to pass national tests before entering merit-based selection for tenured public school positions. [Araujo \(2019\)](#) finds that test-screened teachers were more effective in improving language achievement, particularly among students from disadvantaged backgrounds, though no significant impact was found for math. To address the potential bias from the non-random assignment of students to teachers, [Araujo et al. \(2020\)](#) linked administrative teacher information to data from an experimental study, where kindergarten children were randomly assigned to teachers. This study suggests positive effects of test-screened teachers on both language and math achievement, even after controlling for various teacher characteristics. While these studies have largely focused on the effects of different aspects of such reforms on the current teachers' attributes and students' achievement, much less is known about the effects on future cohorts of teachers and their composition. Our paper contributes to this literature by not only considering the various aspects that these reforms encompassed, but also more importantly by showing how these reforms can affect the career choice of those who might become teachers and thus the composition of the future pool of teachers.

Our paper also relates to the literature on the personnel economics of the government sector (see [Finan et al. \(2017\)](#) for a review of the key findings in this field of research). Public employees can be categorized into two groups: appointed civil servants and frontline service providers, such as teachers. Both groups share several similarities, including high job stability and wage compression. For appointed civil servants, studies have explored how processes like selection, incentive structures, and monitoring impact the quality of governance. For instance, focusing on Latin America, [Ferraz and Finan \(2009\)](#) show that, in Brazil, a one standard deviation increase in wages can increase political competition by 0.7 candidates per seat and raise the share of candidates with a high school degree by 7.4 percent. Similarly, a study in Mexico reveals that raising wages for public sector positions can attract more applicants with stronger qualifications and greater motivation ([Dal Bó et al., 2013](#)).

In the literature on frontline service providers, particularly teachers, a common focus has been on the role of incentives. Insufficient salaries are often cited as a factor causing high-performing teachers to leave the profession ([Imazeki, 2005](#); [Harris and Adams, 2007](#); [Scafidi et al., 2007](#)). In some developing countries, studies have shown that monetary incentives for teachers to improve student performance can motivate them to adopt different teaching methods and respond more effectively to students, leading to higher test-taking ratios and improved student achievement across various contexts ([Lavy, 2009](#); [Mbiti et al., 2019](#); [Muralidharan and Sundararaman, 2011](#); [Leaver et al., 2021](#)). However, [Glewwe et al. \(2010\)](#) found that test scores improved only in the short run, with students unable to sustain these gains after the incentive program concluded. In contrast, in developed countries,

particularly in the United States, studies have often reported no effect of performance-based pay for teachers on student learning outcomes (e.g., [Goodman and Turner \(2013\)](#); [Springer et al. \(2011\)](#)). We contribute to this literature by examining how reforms in the teaching profession, a key public employee group, can influence not only the characteristics and performance of current teachers but also the career choices of high school seniors. We show that changes in the expected payoffs of becoming a teacher can impact both higher education decisions and the composition of the future teacher pool. Additionally, we go beyond financial incentives by analyzing the full scope of teacher reforms, which aim to alter perceptions of the profession, not just salaries.

Finally, this paper also relates to the extensive literature on information treatments. In the standard framework when modeling investments in human capital, individuals are assumed to have complete and accurate information about the costs and expected benefits of each schooling alternative (levels, majors, and schools), enabling them to make optimal choices. However, findings in the development and economics of education literature are challenging this assumption (e.g., [Jensen \(2010\)](#); [Bettinger et al. \(2012\)](#); [Carrell and Sacerdote \(2013\)](#); [Hoxby et al. \(2013\)](#); [Busso et al. \(2017\)](#)).¹ Our paper contributes to this literature by providing an information treatment specifically aimed at promoting a single occupation, rather than multiple ones. Our treatment is designed to attract better candidates to a specific frontline service career through a simple and easily scalable intervention, which is novel in a literature that typically examines various aspects of different occupations without focusing on just one.

2 Setting

The experiment took place in Lima, Peru. Peru experienced a significant increase in school enrollment in recent decades, achieving nearly universal primary enrollment and around 80 percent coverage at the secondary school ([Bassi et al., 2015](#)). To meet this increase in demand, the number of teacher training institutes proliferated, increasing from 17 in 1990

¹These experiments vary in form. Some provide application information to interested students (e.g., [Carrell and Sacerdote \(2013\)](#); [Hoxby et al. \(2013\)](#)), while others provide information on economic returns (e.g., [Nguyen \(2008\)](#); [Jensen \(2010\)](#); [Hastings et al. \(2015\)](#)) or financial aid (e.g., [Dinkelman and Martínez A \(2014\)](#); [Oreopoulos and Dunn \(2013\)](#)). Others supplement information interventions with targeted assistance in applying for financial aid or college (e.g., [Bettinger et al. \(2012\)](#); [Brown et al. \(2016\)](#)), or with incentives such as cash payments or fee waivers for completing applications (e.g., [Carrell and Sacerdote \(2013\)](#); [Hoxby et al. \(2013\)](#)). Studies have been targeted at all levels of schooling (primary, secondary, and tertiary), student types (high achievers, average students, etc.), and settings ranging from high-income countries such as the United States to middle- and low-income countries such as Chile, Madagascar, and Dominican Republic. [Banerjee et al. \(2013\)](#) and [Lavecchia et al. \(2016\)](#) provide comprehensive reviews of much of this recent experimental evidence from studies in developed and developing country settings.

to 177 in 1997 and reaching 218 by 2014. By the end of this period, more than two-thirds of prospective teachers were being trained in these institutes, with the remaining third trained in universities.

However, in 2012, the public teaching career in Peru was characterized by uniformity in rights and duties due to the centralized nature of its regulatory framework. Public sector teachers worked within a system where the wage structure did not reflect performance or encourage improvement, creativity, or innovation (Díaz and Saavedra, 2001; Díaz and Ñopo, 2016). After passing a standardized examination to enter the public teaching career, teachers enjoyed job stability. Although salary increases were theoretically tied to tenure and performance—placing more emphasis on professional background than on performance—this system was effectively implemented in Peru for only one year, in 1990.

In Peru, the public teaching profession has struggled to attract top candidates. Students interested in pursuing a teaching career scored, on average, 12 percent lower on international standardized tests compared to the average student in the country. Also, an evaluation in 2014 revealed that only 7 percent of the graduates from professional teacher training institutes met the expected level in mathematics, and only 15 percent met the expected level in reading comprehension (Elacqua et al., 2018a). By contrast, in countries with better systems to attract candidates, those interested in becoming teachers scored above average, and university admission rates were higher for education majors than for other fields. In Peru in 2016, 69 percent of applicants to university education programs in Peru were admitted, compared to an overall average acceptance rate of 40 percent across all majors (Elacqua et al., 2018a).

In response to these challenges, a series of reforms to the public teaching career were implemented in Peru at the end of 2012.^{2,3} This new public teaching career unified the two existing public sector teacher labor regimes in Peru and aimed to improve teaching performance. The 2012 law introduced competitive criteria for admission, retention, and promotion of public school teachers, as well as a revised salary scale and economic incentives. It estab-

²Starting in the early 2000s, similar reforms took place in Colombia (2005), Ecuador (2011), Mexico (2013), and Chile (2016), focusing on salary increases, adjustments to salary structures, incentives to attract teachers to the most needed schools, and professional growth opportunities through a merit-based career path (Elacqua et al., 2018a).

³In Peru, the teacher reform law (known as *Ley de Reforma Magisterial—LRM, Ley 29944*) was enacted in November 2012. The main goals of this law are to: (a) ensure the quality of public education institutions, the suitability of teachers and education authorities, and their proper performance; (b) promote sustained improvement in teacher quality to enhance student learning and development; (c) recognize merit in work performance; (d) create conditions for equal opportunity in promotions within the Public Authorities Career; (e) improve working conditions to enhance teacher performance in educational programs and institutions; and (f) establish criteria and evaluation processes to guarantee the entrance and tenure of high-quality teachers.

lished a new structure to promote sustained improvement in teacher quality by recognizing merit in work performance and creating conditions for equitable promotion opportunities. This structure consists of eight levels and four areas of career development, where promotions are based on merit rather than solely on years of experience. It also requires periodic teacher performance evaluations, held at least every three years, for retention and promotion. Teachers who do not pass the regular evaluation must undergo an extraordinary evaluation the following year; if they fail again, they must be re-evaluated in a second extraordinary evaluation, after which, if unsuccessful, the teacher contract is terminated.

The 2012 law was complemented by policies enacted between 2013 and 2015 aimed at improving the social and economic status of the teaching profession. The basic salary for all teachers was increased through a higher fixed hourly rate and hardship bonuses (e.g., for assignments to rural, remote, or inter-cultural and bilingual schools). This led to a 41 percent increase in entry-level teacher wages between 2013 and 2019. Additionally, to enter the public teaching profession, candidates must pass a national qualifying exam. As an extra incentive, in 2015, the Ministry of Education introduced a sizable bonus, equivalent to two annual salaries, for candidates who score in the top third of this national exam.

Another key policy was the establishment of an official scholarship program for tertiary students enrolling in education majors. Launched in 2015 with six participating universities, this program covers all costs associated with university studies in education-related fields.⁴ These scholarships, awarded strictly on merit rather than financial need, are available to students from both public and private high schools based on their high school GPA.

3 Research Design

Intervention. We designed the intervention under the assumption that senior high school students were largely unaware of the details and implications of the public teaching career reforms initiated in late 2012 (evidence supporting this assumption is provided below). The intervention took place in November 2015 and consisted of information sessions detailing the changes to the teaching career, targeted at senior high school students. These sessions were coordinated by trained facilitators. To minimize facilitators' biases and skill differences, the sessions primarily featured audiovisual materials. These audiovisual modules, performed by young actors, were designed to engage students on both a rational level (through an informational video) and an emotional level (through a motivational video). To prevent contamination of untreated students, no printed materials were distributed, and no school personnel or students from untreated classrooms could attend the sessions. Lastly, facilitators

⁴These scholarships are known as *Beca Vocación de Maestro*.

were limited to conducting no more than two sessions per day to prevent fatigue.

The content of the videos and facilitator-led discussions included the following informational content: social/emotional benefits of being a teacher; the wages earned under the new law; meritocracy of the new teaching career (including job stability, promotion mechanisms, and opportunities for salary increases); additional benefits for teachers (such as vacations); and information on scholarships for education majors. The objective was to highlight the career changes introduced by the reform and the complementary policies implemented by the Peruvian Ministry of Education, and to motivate students to pursue a career in teaching. After watching the videos, students had the opportunity to discuss them by asking questions. The scripts for the videos and all other materials were reviewed by the technical staff of the Ministry of Education. Appendix A provides a more detailed description of the intervention content.

Randomization. The initial universe comprised 2,716 public and private high schools in metropolitan Lima.⁵ From this universe, we excluded high schools with less than 30 students in senior year, privately-funded and privately-run elite schools, schools operating only in night shifts, schools offering only distance education, schools in rural areas, and all-male schools from the sample. After applying these selection criteria, the final eligible universe included 624 high schools, from which we selected 250 schools at random.^{6,7} We grouped the experimental schools into 40 strata, each with approximately seven schools, based on the senior year of secondary enrollment in 2014 and whether the schools were charter schools.⁸ From each stratum, we randomly assigned 80 schools to the treatment group, 120 schools to the control group, and 50 schools as replacements in case the intervention or data collection could not be conducted at a school originally assigned to the treatment or control group. Strata with seven schools included two replacement schools, while strata with six schools included one. There were 74 schools where the intervention could not be implemented, leaving us with 176 schools, including replacements.⁹

Data. We rely on four sources of information. First, our sample design is based on the 2014 Peruvian school census (ESCALE), which provides detailed information on all

⁵Our study was limited to metropolitan Lima due to logistics and to minimize data collection costs.

⁶We included a set of charter schools, known as *Fe y Alegría*, based on prior knowledge that many of their graduates pursued teaching careers. These charter schools are publicly funded, privately managed, and provide educational opportunities to low-income students.

⁷Section B1 of Appendix B provides the comparison of the three groups—the universe, eligible, and experimental sample of schools—, using data from the 2014 Peruvian school census (ESCALE).

⁸To have strata with a similar number of schools, one stratum includes both charter and regular public schools.

⁹Section B2 of Appendix B details the process by which we moved from our initial sample of schools to the final sample, along with the number of schools at each stage. It also includes a comparison of observable characteristics between the schools.

public and private educational institutions in Peru. This dataset includes information on enrollment, repetition, dropout rates, human resources, and other educational inputs.

Second, we use a baseline survey collected in November 2015, prior to the intervention, from 7,315 high school seniors (3,817 in the control group and 3,498 in the treatment group). We designed and administered the baseline questionnaire, which gathered information on students’ demographic and socioeconomic characteristics, academic profiles (including past academic experiences and achievements), future goals, career choices, and their knowledge and opinions regarding teaching, studying education, and the public teaching profession. This extensive questionnaire was complemented by seven cognitive and non-cognitive tests. We measured students’ productive vocabulary, mathematical reasoning and numerical skills, reading comprehension, IQ, empathy, and personality traits.¹⁰

Our third data source is a midline survey collected only among treated students immediately after the intervention. This short survey asked students to recall information provided in the videos, their opinions regarding the teaching career, and their likelihood of enrolling in an education major. The objective of this survey was to assess whether the intervention resulted in short-term changes in opinions and interest regarding a teaching career.

Our final data source is a questionnaire administered three years after the intervention, from October through December 2018. We had collected multiple contact details at baseline, which allowed us to locate over 90 percent of our 2015 treatment and control students (6,607 total: 3,440 in control, 3,167 in treatment). This endline survey gathered information on students’ post-secondary educational and occupational trajectories, including whether they were working or studying and their chosen careers. We also included additional questions for those pursuing an education major to understand more thoroughly their reasons for this choice and their future employment expectations.¹¹ Appendix Figure 1 describes the timeline of the reform, the intervention, and the data collections.

4 Experimental Validity

Sample Description and Balance. Table 1 presents a comparison of baseline variables between students in the treatment and control groups. The students in our sample were, on average, 16 years old in 2015, with an equal distribution of male and female students. Sixty-three

¹⁰We computed standardized scores using a logistic model to adjust for test characteristics, particularly the difficulty of the skills tests (for the personality test, the intensity of the trait measured) and to obtain scores for students who did not answer all questions in a given section.

¹¹Further details on the instruments used for each data collection process are provided in Section C1 of Appendix C, along with a description of all the variables used in Section C2. All questionnaires and tests are available from the authors upon request.

percent had failed a course at least once, and their average GPA was 15 out of a maximum of 20. In terms of post-secondary career intentions, around 56 percent indicated that they would consider studying at a public institution, including both public tertiary institutes and public universities, and over 80 percent expressed plans to enroll in a university, whether public or private.¹² Regarding their knowledge of the teaching career, only 26 percent of the students were aware of the policy changes introduced by the Peruvian government. Among those who were aware, 76 percent viewed these changes positively, but only 37 percent believed the government would actually implement the proposed reforms. There are no statistical significant differences between treatment and control groups in 21 out of the 27 variables examined, as shown in Table 1. The only statistically significant differences are observed in math, reading comprehension, productive vocabulary test scores, patience level, consideration of studying in a public institution, and the intention to enroll in a university. Treated students, on average, perform better in math and reading comprehension but worse in productive vocabulary compared to the control group. Additionally, treated students exhibit lower patience levels, a higher percentage express interest in studying at a public institution, and a lower percentage indicate an intention to enroll in a university compared to the control group.

Intention to Teach. We use our baseline survey to describe the characteristics of students who, by the end of their secondary schooling, intended to pursue a teaching career. We analyze a set of questions that asked students to list their first, second, and third preferred college career options. Based on this information, we identify students who expressed interest in studying an education-related major in any of their three options. As shown in columns (4)-(6) of Table 1, students who stated an intention to teach were slightly older, more likely to be female, at a lower socio-economic level, and had a lower GPA. Students without an intention to teach scored lower in mathematics and IQ. In terms of non-cognitive abilities, students with an intention to teach were similar to those without such an intention, except that students with an intention to teach had exceptionally high empathy scores.¹³

Regarding educational and career preferences, Table 1 shows that high school seniors who intended to teach were more likely to prefer public institutions, including both public tertiary institutes and public universities. When asked about the criteria they considered relevant when choosing a career, students intending to teach were more likely to prioritize lower costs—measured by the perceived difficulty of studies, time requirements, and tuition, among other factors—and less likely to prioritize job quality, which includes the perceived

¹²Each number reported corresponds to the percentage of students who answered "yes" to a yes-or-no question on whether they would like to study in each type of post-secondary institution.

¹³The same analysis was conducted with a sample restricted to those who expressed an intention to enroll in tertiary education. The results can be found in Appendix Table 2.

Table 1: Sample Description

	Control (1)	Treatment (2)	p-value (3)	Intention to teach		
				No (4)	Yes (5)	p-value (6)
A. Socio-demographic Characteristics						
Age	16.17	16.14	0.14	16.15	16.23	0.04
Female (%)	0.51	0.51	0.92	0.51	0.78	0.00
Socio-Economic Level	0.22	0.19	0.59	0.21	-0.01	0.00
Failed a Class (%)	0.63	0.63	0.93	0.62	0.64	0.50
GPA	15.10	15.06	0.65	15.10	14.88	0.01
B. Standardized Test Scores						
Cognitive						
Mathematics	-0.00	0.15	0.00	0.09	-0.13	0.00
Reading comprehension	-0.00	0.12	0.09	0.07	0.10	0.62
IQ	-0.00	0.12	0.11	0.07	-0.05	0.02
Productive vocabulary	-0.00	-0.20	0.01	-0.11	-0.07	0.52
Non-Cognitive						
Extroversion	-0.00	-0.02	0.36	-0.01	0.01	0.66
Agreeableness	0.00	-0.02	0.44	-0.02	0.05	0.28
Conscientiousness	-0.00	-0.00	0.97	-0.01	0.00	0.89
Neuroticism	0.00	-0.02	0.45	-0.01	0.08	0.18
Openness	-0.00	-0.01	0.66	-0.01	0.02	0.63
Empathy	-0.00	0.01	0.67	0.01	0.25	0.00
Patience	0.00	-0.04	0.08	-0.02	0.07	0.15
Risk aversion	-0.00	-0.02	0.32	-0.01	-0.11	0.11
Firmness	-0.00	0.03	0.30	0.02	0.02	0.93
C. Career Choice						
Public Institution (%)	0.53	0.58	0.04	0.57	0.66	0.00
University (%)	0.84	0.81	0.09	0.85	0.81	0.24
Criteria: Lower Costs	0.01	0.01	0.95	0.00	0.17	0.00
Criteria: Job Quality	-0.01	-0.01	0.97	-0.00	-0.16	0.04
Criteria: Interests	-0.02	0.01	0.29	-0.00	-0.08	0.25
Criteria: Contribute to Society (%)	0.91	0.91	0.95	0.91	0.93	0.34
D. Changes in Teaching Career						
Knows about Changes (%)	0.25	0.26	0.76	0.25	0.37	0.00
Thinks Changes are Positive (%)	0.76	0.76	0.99	0.76	0.83	0.04
Gov. maintain Changes (%)	0.36	0.37	0.86	0.37	0.44	0.05
E. Reasons to Study (or not) Education						
Student is Patient (%)	.	.	.	0.46	0.87	0.00
Student has Vocation (%)	.	.	.	0.51	0.72	0.00
Family Reasons (%)	.	.	.	0.57	0.11	0.00
Easy to Study (%)	.	.	.	0.54	0.28	0.00
Scholarship Opportunities (%)	.	.	.	0.58	0.43	0.00
Prestige of Education (%)	.	.	.	0.43	0.59	0.00
Wages (%)	.	.	.	0.26	0.48	0.00
Observations	3,817	3,498		6,799	295	

Notes: The table reports the results of student-level regressions. The sample corresponds to 7,315 students in senior year of 176 high schools in metropolitan Lima. Test scores are presented after applying Item Response Theory and standardized to have a zero mean for the control group. 221 students did not respond to the question regarding their intention to teach. Standard errors clustered at the school level in parentheses. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year.

difficulty of obtaining employment, job stability, decent wages, and sufficient family time.¹⁴

¹⁴The variables defining the criteria for career choice were constructed using factor analysis of items within a common category (costs of the career, future job quality, personal interests, and the career's contribution to society and daily tasks). The remaining variables in Table 1 correspond to the percentage of people who

Students with an intention to teach saw themselves as more patient and having a stronger vocation for public service, and they were less likely to choose this career due to family reasons, perceived ease of the field of study, or the availability of scholarships. Regarding the teaching profession specifically, students with an intention to teach viewed it as a prestigious career and were more likely to believe that it offers good wages. Finally, in terms of knowledge of policy changes affecting the teaching profession, high school seniors intending to teach were more likely to be aware of these changes, more likely to view them positively, and more likely to believe that the government would implement the reforms.

Attrition. Our follow-up survey was not completed by all the students who were in the treated and control schools at baseline. Of the 7,315 students at baseline, only 708 (9.7%) were not present at endline. However, as shown in Appendix Table 1, this attrition is not correlated with the treatment.

5 Experimental Results

5.1 Effects on Perceptions of the Teaching Career

We use the midline survey to capture immediate changes in stated preferences and opinions about the teaching career among treated students. This brief questionnaire was administered immediately after the intervention. The first question asked treated students to recall aspects of the teaching career reforms presented during the sessions, which included videos and a subsequent discussion. Between 80 to 90 percent of treated students were able to recall several aspects of the reforms. To fully assess recall ability, we also included distractor items—such as reduced work hours—that were not part of the actual reforms and were not mentioned in the videos. On average, only around 20 percent of the students answered positively to remembering these distractors (see Appendix Table 3).

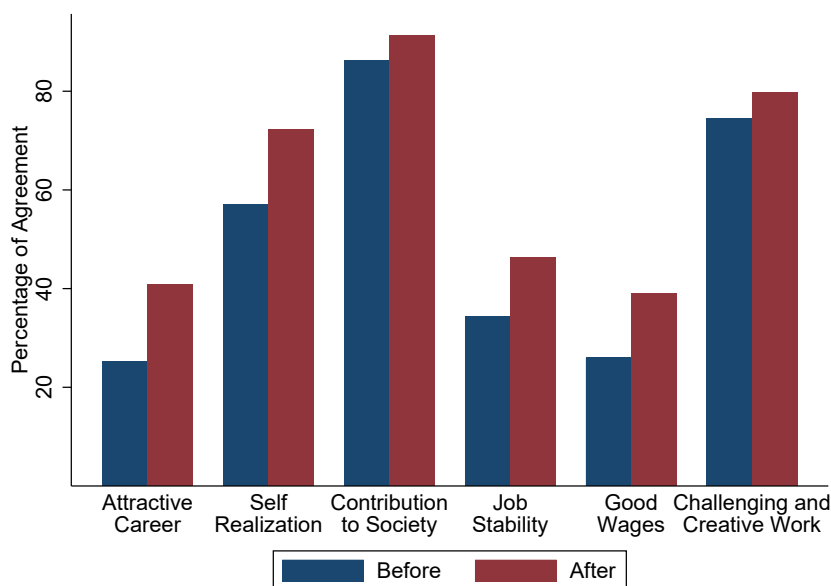
The second question asked students to express their agreement or disagreement with various statements about the public teaching career in Peru. Since this question was also included in the baseline survey, it allows us to measure immediate changes in perceptions of the teaching career resulting from the intervention. As shown in Figure 1, the intervention drastically reduced the negative perceptions of the public teaching career. We then examined the correlation between opinions about the teaching career and baseline student characteristics. We find that, prior to the intervention, treated high school seniors with higher math skills and those of higher socio-economic status were more likely to hold a negative opinion of the teaching career, whereas students exhibiting greater patience tended to view the

responded positively to each individual question.

teaching career more favorably. However, of all treated students, those with higher math test scores were the most likely to change their opinion of the teaching career as a result of the intervention (see Appendix Table 4).

The final question of the midline survey asked about the likelihood of studying an education-related major. Although the intervention markedly improved perceptions of the teaching career, it did not have an impact, in the very short-term, on the expressed intention to pursue an education-related major; before and after the intervention, approximately 74 percent of our treated high school seniors reported that they were unlikely to pursue an education-related major. Further details regarding the distribution can be found in Appendix Table 5.

Figure 1: Percentage Agreement with Statements on the Public Teaching Career among the Treated Group



Notes: The figure reports the results of calculating the percentage of students who agreed with each statement. The sample is restricted to students in the treatment group, for whom we have information on the statements: 3,315 students pre-intervention and 3,155 students post-intervention. All differences are statistically significant.

5.2 Impact on Career Choices

To assess the impact of the treatment on career choices, we examine two outcome variables: (a) whether the student enrolled in tertiary education; and (b) whether the student chose an education-related major.

We estimate the following model:

$$Y_{isr} = \theta T_{isr} + \beta X_{isr}^0 + \mu_r + \epsilon_{isr} \quad (1)$$

where the dependent variable Y_{isr} represents whether the student i from school s in strata r is enrolled in tertiary education or pursuing an education-related major. T_{isr} equals 1 for treated students, and θ is the parameter of interest. We control for baseline student characteristics X_{isr}^0 , including school administrative dependence, whether the student was held back a year, socio-demographic attributes, cognitive and non-cognitive skills, and opinion of the teaching career. The model also includes strata fixed effects μ_r . We estimate this model by sequentially adding control variables to document the stability of the treatment estimates across different sets of controls.

Table 2 presents the estimated effects of the treatment (θ in equation 1) on career choices. Treated high school seniors are 2.7 percentage points more likely to enter tertiary education, and 0.9 percentage points more likely to study an education-related major than students in the control group. These results are robust to changes in specification across different sets of control variables, and all are statistically significant. While the point estimates for studying education are small, the fact that the results are significant is extremely relevant considering the small number of students choosing a career in education. Among the 5,447 students who enrolled in higher education and for whom we were able to obtain endline information on career choice, only 78 chose to study education. Thus, being 0.9 percentage points more likely to study education corresponds to a 82 percent increase in the number of people choosing an education major.

As a robustness check, we perform the same analysis on the probability of studying an education-related major, this time including those pursuing a technical career in education auxiliary support as part of the education-related category. We also conduct the analysis excluding the 50 replacement schools. Both results are consistent with our initial estimates and can be found in Appendix Tables 6 and 7. Additionally, we examine whether the treatment effect varied based on students' intended areas of tertiary education at baseline. When the sample is restricted to students who expressed an intention at baseline to pursue a career in education, the results are substantially larger and statistically significant. In contrast, no significant treatment effects are observed for other intended areas of enrollment. The results are presented in Appendix Figure 2.

Given that several variables appear to be related with the likelihood of choosing a career in education, we next analyze whether the treatment had heterogeneous effects across different groups. To do this, we estimate the treatment effects on the probability of studying

Table 2: Treatment Effects on Career Choice

	(1)	(2)	(3)	(4)	Obs.	Control Mean
Probability of enrolling in tertiary education	0.027** (0.011)	0.027** (0.011)	0.026** (0.011)	0.026** (0.011)	6,607	0.804
Probability of studying an education-related major	0.009* (0.005)	0.010* (0.005)	0.009* (0.005)	0.009* (0.005)	5,447	0.011
Cognitive Skills	No	Yes	Yes	Yes		
Socio-Demographic Variables	No	No	Yes	Yes		
Non-Cognitive Skills	No	No	No	Yes		

Notes: The table reports the results of student-level regressions. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. Column 1 includes no additional controls. Column 2 controls for math and productive vocabulary test scores, as well as GPA. Column 3 adds socioeconomic level, and gender as controls. Column 4 includes the patience score as an additional control. The third outcome is the probability of studying an education-related major conditional on having stated at baseline an intention to enroll in tertiary education. Standard errors clustered at the school level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

an education-related major across different sub-samples. Specifically, we divide the sample by gender (female/male), socio-economic status (high/low), math performance (high/low), patience levels (high/low), having prior information about the changes in the teaching career (high/low), and initial opinion about the teaching career (high/low). As shown in Table 3, the treatment effects on the probability of studying an education-related major, observed in Table 2, appear to be driven by female students, students of low socioeconomic status, those with low math performance, students with high levels of patience, those who had prior information about the changes in the teaching career, and those with a more favorable initial opinion of the teaching career. However, the only coefficients for which we can reject the null hypothesis of equality are for socioeconomic status, math performance, prior knowledge of the changes in the teaching career, and initial opinion of the teaching career.

5.3 The Profile of Tertiary Students in Education Majors

We also compare the students in our study who chose to enroll in education-related majors with those who pursued other post-secondary paths. Table 4 shows that students in education-related majors are more likely to be enrolled in public universities and less likely to attend private universities or institutes compared to other tertiary students. We find no significant differences in how they financed their tertiary studies; both groups were equally likely to use private resources. Additionally, we do not observe statistically significant differences in terms of changing majors or working while in college. However, students who enrolled in education-related majors took longer to enter tertiary education than their peers

in other fields, and they reported significantly lower expected wages upon completing their degrees.¹⁵

Table 3: Heterogeneity in Treatment Effects on Career Choice

Categories [Group 1 - Group 2]	Group 1	Group 2	p-value
Sex [Male - Female]	0.005 (0.004)	0.011* (0.006)	0.28
Socio-Economic Level [Low - High]	0.025*** (0.009)	0.001 (0.005)	0.01
Mathematics [Low - High]	0.018** (0.007)	0.004 (0.004)	0.07
Patience [Low - High]	0.006 (0.006)	0.016** (0.007)	0.23
Had Prior Information About Changes [Low - High]	0.008** (0.004)	0.033*** (0.012)	0.03
Opinion of Teaching Career [Low - High]	0.004 (0.004)	0.030*** (0.009)	0.01

Notes: The table reports the results of student-level regressions. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. Standard errors clustered at the school level in parentheses. * p<0.1; ** p<0.05; *** p<0.01.

Table 4: Comparison of Students Who Chose Other Majors vs. Education

	Other Majors	Education	p-value
A. Where Do They Study			
Public Institute	0.16	0.72	0.00
University	0.67	1.00	0.00
B. How Do They Study			
Private Financing	0.96	0.99	0.20
Scholarships	0.56	0.55	0.89
Months Before Tertiary Education	26.98	35.30	0.00
Changed Major	0.05	0.08	0.23
C. Job Market			
Working While Studying	0.20	0.21	0.92
Expected Wages	612.56	418.01	0.00
Observations	5,369	78	

Notes: The table reports the results of the comparison of students who chose Education as a major versus those who selected other majors. The results are obtained using t-tests that compare means across both groups. The means for each group (Other Majors and Education) are reported along with the associated p-values for the differences between the groups.

¹⁵When analyzing their wage expectations in relation to actual market wages, according to the Ministry of Labor and Employment Promotion of Peru, the average monthly earnings for teachers in 2016 were \$426 (ranging from \$325 to \$724), based on the exchange rate from Peruvian soles to U.S. dollars as of December 2018. This is very close to the average expected monthly wage of \$418 reported by students who enrolled in education-related majors.

6 Conclusion

Many countries around the world have implemented education reforms that introduce various incentives for teachers, aiming to improve education quality. Evaluations of these reforms have primarily focused on whether these incentives enhance teacher quality as measured by student achievement. However, a key aspect of these reforms—particularly in Latin America—has centered on improving the teaching profession itself and addressing how some suboptimal conditions in the profession deter top candidates from becoming teachers. Therefore, an important evaluation agenda should involve assessing whether these reforms can influence the profile of those who choose to become teachers, particularly by affecting high school students during their career decision-making process.

Our intervention was designed with two objectives. First, we aimed to understand how high school students in the process of making post-secondary career decisions perceived the changes introduced to the teaching career in Peru and whether these changes made a teaching career more attractive. Second, we sought to determine whether an information treatment encouraging high school seniors to pursue a career in education could achieve this goal. Our results suggest that a simple, low-cost, and easily scalable intervention had significant positive effects in encouraging high school seniors to enroll in education majors. Three years after the intervention, we observed an increase in the number of people choosing an education major, and these results remain robust despite the small number of students selecting education majors.

While the results indicate that our treatment effectively reached and influenced students in their career choices, we can say little about whether these influenced students are better candidates than the current pool of teachers. The treatment predominantly attracted female students of low socio-economic status, with low math performance, who exhibit higher level of patience and hold a more favorable initial opinion of the teaching career. Although the treatment primarily impacted students at the lower end of the math test score distribution, this does not necessarily imply that the experiment attracted students with lower cognitive skills to the teaching profession. On average, a career in teaching continues to attract candidates with lower cognitive skills compared to other post-secondary majors. Thus, future research, potentially involving a sequenced version of this experiment or a larger-scale experiment, may provide a more precise analysis of the changes in the composition of those interested in studying education elicited by reforms to the teaching career. Nonetheless, the insights gained from this paper, particularly regarding the induced changes in expressed career preferences resulting from a simple treatment, are relevant—especially for governments seeking to implement reforms aimed at increasing the attractiveness of the teaching career.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author(s) used ChatGPT in order to perform selected spelling, grammar, and vocabulary checks. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

References

- Araujo, M. D. (2019), ‘Measuring the effect of competitive teacher recruitment on student achievement: Evidence from Ecuador’, *Unpublished Manuscript* .
- Araujo, M. D., Yyannú Cruz-Aguayo, P. I. and Schady, N. (2020), ‘Does test-based teacher recruitment work in the developing world? Experimental evidence from Ecuador’, *IZA Institute of Labor Economics Discussion Paper 13830* .
- Balcázar, C. F. and Ñopo, H. (2016), ‘Broken gears: the value added of higher education on teachers’ academic achievement’, *Higher Education* **72**, 341–361.
- Banerjee, A., Glewwe, P., Powers, S. and Wasserman, M. (2013), *Expanding access and increasing student learning in post-primary education in developing countries: A review of the evidence*, Citeseer.
- Bassi, M., Busso, M. and Munoz, J. S. (2015), ‘Enrollment, graduation, and dropout rates in Latin America: Is the glass half empty or half full?’, *Economia* **16**(1), 113–156.
- Bettinger, E. P., Long, B. T., Oreopoulos, P. and Sanbonmatsu, L. (2012), ‘The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment’, *The Quarterly Journal of Economics* **127**(3), 1205–1242.
- Brown, M., Grigsby, J., van der Klaauw, W., Wen, J. and Zafar, B. (2016), ‘Financial education and the debt behavior of the young’, *The Review of Financial Studies* **29**(9), 2490–2522.
- Brutti, Z. and Sánchez, F. (2022), ‘Turning around teacher quality in latin america: Renewed confidence and lessons from Colombia’, *Economic Analysis and Policy* **73**(2017-11), 62–93.
- Busso, M., Dinkelman, T., Martínez, A. C. and Romero, D. (2017), ‘The effects of financial aid and returns information in selective and less selective schools: Experimental evidence from Chile’, *Labour Economics* **45**, 79–91.
- Busso, M., Montaña, S., Muñoz-Morales, J. and Pope, N. (2024), ‘The unintended consequences of merit-based teacher selection: Evidence from large-scale reform in Colombia’, *Journal of Public Economics*, *forthcoming* .
- Carrell, S. E. and Sacerdote, B. (2013), *Late interventions matter too: The case of college coaching New Hampshire*, number w19031, National Bureau of Economic Research Cambridge, MA.

- Corcoran, S. P. (2007), ‘Long-run trends in the quality of teachers: Evidence and implications for policy’, *Education Finance and Policy* **2**(4), 395–407.
- Dal Bó, E., Finan, F. and Rossi, M. A. (2013), ‘Strengthening state capabilities: The role of financial incentives in the call to public service’, *The Quarterly Journal of Economics* **128**(3), 1169–1218.
- Díaz, H. and Saavedra, J. (2001), La carrera del maestro en el Perú: factores institucionales, incentivos económicos y desempeño, MISC.
- Dinkelman, T. and Martínez A, C. (2014), ‘Investing in schooling in Chile: The role of information about financial aid for higher education’, *Review of Economics and Statistics* **96**(2), 244–257.
- Díaz, J. J. and Ñopo, H. (2016), La carrera docente en el Perú, in ‘Investigación para el desarrollo en el Perú: Once balances’, Vol. 1, Grupo de Análisis para el Desarrollo (GRADE), pp. 353–402.
- Elacqua, G., Hincapié, D., Vegas, E., Alfonso, M., Montalva, V. and Paredes, D. (2018a), *Profesión: Profesor en América Latina: ¿Por qué se perdió el prestigio docente y cómo recuperarlo?*, Inter-American Development Bank.
- Elacqua, G., Hincapié, D., Vegas, E., Alfonso, M., Montalva, V. and Paredes, D. (2018b), *Profesión: Profesor en América Latina: ¿Por qué se perdió el prestigio docente y cómo recuperarlo?*, Inter-American Development Bank.
- Estrada, R. (2019), ‘Rules versus discretion in public service: Teacher hiring in Mexico’, *Journal of Labor Economics* **37**(2), 545–579.
- Ferraz, C. and Finan, F. (2009), Motivating politicians: The impacts of monetary incentives on quality and performance, Technical report, National Bureau of Economic Research.
- Finan, F., Olken, B. A. and Pande, R. (2017), ‘The personnel economics of the developing state’, *Handbook of economic field experiments* **2**, 467–514.
- Glewwe, P., Ilias, N. and Kremer, M. (2010), ‘Teacher incentives’, *American Economic Journal: Applied Economics* **2**(3), 205–27.
- Goodman, S. F. and Turner, L. J. (2013), ‘The design of teacher incentive pay and educational outcomes: Evidence from the New York City bonus program’, *Journal of Labor Economics* **31**(2), 409–420.
- Harris, D. N. and Adams, S. J. (2007), ‘Understanding the level and causes of teacher turnover: A comparison with other professions’, *Economics of Education Review* **26**(3), 325–337.
- Hastings, J., Neilson, C. A. and Zimmerman, S. D. (2015), The effects of earnings disclosure on college enrollment decisions, Technical report, National Bureau of Economic Research.

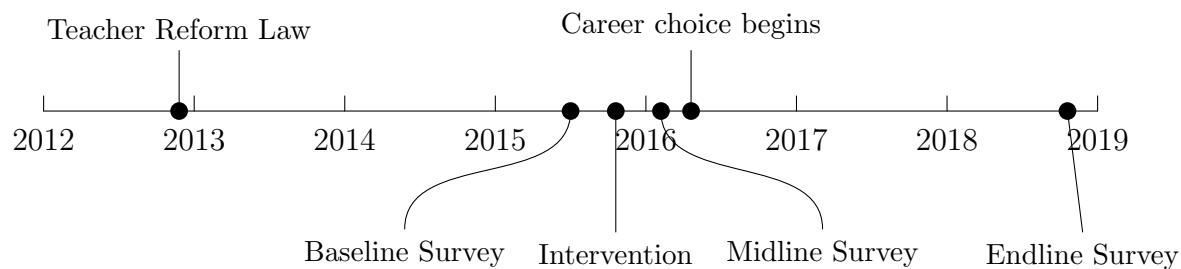
- Hoxby, C., Turner, S. et al. (2013), ‘Expanding college opportunities for high-achieving, low income students’, *Stanford Institute for Economic Policy Research Discussion Paper* **12**, 014.
- Imazeki, J. (2005), ‘Teacher salaries and teacher attrition’, *economics of education Review* **24**(4), 431–449.
- Jensen, R. (2010), ‘The (perceived) returns to education and the demand for schooling’, *The Quarterly Journal of Economics* **125**(2), 515–548.
- Lavecchia, A. M., Liu, H. and Oreopoulos, P. (2016), Behavioral economics of education: Progress and possibilities, in ‘Handbook of the Economics of Education’, Vol. 5, Elsevier, pp. 1–74.
- Lavy, V. (2009), ‘Performance pay and teachers’ effort, productivity, and grading ethics’, *American Economic Review* **99**(5), 1979–2011.
- Leaver, C., Ozier, O., Serneels, P. and Zeitlin, A. (2021), ‘Recruitment, effort, and retention effects of performance contracts for civil servants: Experimental evidence from Rwandan primary schools’, *American Economic Review* **111**(7), 2213–46.
- Mbiti, I., Muralidharan, K., Romero, M., Schipper, Y., Manda, C. and Rajani, R. (2019), ‘Inputs, incentives, and complementarities in education: Experimental evidence from Tanzania’, *The Quarterly Journal of Economics* **134**(3), 1627–1673.
- Mizala, A., Ñopo, H. et al. (2014), ‘Measuring the relative pay of Latin American school teachers at the turn of the 20th century’, *Peruvian Economic Association* .
- Muralidharan, K. and Sundararaman, V. (2011), ‘Teacher performance pay: Experimental evidence from India’, *Journal of Political Economy* **119**(1), 39–77.
- Nguyen, T. (2008), ‘Information, role models and perceived returns to education: Experimental evidence from Madagascar’, *MIT Working Paper* .
- OECD (2019), *Education Policy Outlook 2019*.
URL: <https://www.oecd-ilibrary.org/content/publication/2b8ad56e-en>
- Ome, A. (2012), ‘The effects of meritocracy for teachers in Colombia’, *Fedesarrollo Informes de Investigación* 010260 .
- Ome, A. (2013), ‘El estatuto de profesionalización docente: una primera evaluación’, *Fedesarrollo Cuadernos de Fedesarrollo* 011553 .
- Oreopoulos, P. and Dunn, R. (2013), ‘Information and college access: Evidence from a randomized field experiment’, *The Scandinavian Journal of Economics* **115**(1), 3–26.
- Scafidi, B., Sjoquist, D. L. and Stinebrickner, T. R. (2007), ‘Race, poverty, and teacher mobility’, *Economics of Education Review* **26**(2), 145–159.

Springer, M. G., Ballou, D., Hamilton, L., Le, V.-N., Lockwood, J., McCaffrey, D. F., Pepper, M. and Stecher, B. M. (2011), ‘Teacher pay for performance: Experimental evidence from the project on incentives in teaching (point).’, *Society for Research on Educational Effectiveness* .

Appendix

Additional Tables and Figures

Appendix Figure 1: Research Timeline



Appendix Table 1: Attrition

	(1)	(2)	(3)	(4)	Obs.	Control Mean
Attrited	-0.013 (0.021)	-0.006 (0.020)	-0.004 (0.020)	-0.004 (0.019)	7,315	0.099
Cognitive Skills	No	Yes	Yes	Yes		
Socio-Demographic Variables	No	No	Yes	Yes		
Non-Cognitive Skills	No	No	No	Yes		

Notes: The table reports the results of student-level regressions. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. Column 1 includes no additional controls. Column 2 controls for math and productive vocabulary test scores, as well as GPA. Column 3 adds socioeconomic level, and gender as controls. Column 4 includes the patience score as an additional control. The third outcome is the probability of studying an education-related major conditional on having stated at baseline an intention to enroll in tertiary education. Standard errors clustered at the school level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix Table 2: Intention to Teach: Characteristics of Students Who Intended to Enroll in Tertiary Education

	Intention to teach		p-value
	No	Yes	
A. Socio-demographic Characteristics			
Age	16.15	16.23	0.13
Female (%)	0.54	0.80	0.00
Socio-Economic Level	0.22	0.02	0.00
Failed a Class (%)	0.60	0.62	0.53
GPA	15.17	14.91	0.01
B. Standardized Test Scores			
	Cognitive		
Mathematics	0.05	-0.18	0.00
Reading comprehension	0.04	0.10	0.35
IQ	0.02	-0.12	0.01
Productive vocabulary	0.03	0.04	0.89
	Non-Cognitive		
Extroversion	-0.01	0.04	0.52
Agreeableness	-0.02	0.06	0.28
Conscientiousness	-0.00	-0.01	0.99
Neuroticism	-0.00	0.15	0.09
Openness	-0.01	0.04	0.48
Empathy	0.07	0.37	0.00
Patience	0.03	0.21	0.03
Risk aversion	0.01	-0.11	0.09
Firmness	0.11	0.11	0.95
Observations	5,142	213	

Notes: The table reports the results of student-level regressions. Standard errors clustered at the school level in parentheses. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year.

Appendix Table 3: Students' Information Retention After Treatment

Which changes do you remember?	Yes	No
1. More scholarships to study education	92%	7%
2. Reduced work hours	23%	76%
3. Performance evaluations for promotions	92%	7%
4. Higher wages for promotions	92%	7%
5. Notable teachers can become congresspersons or president	22%	77%
6. More scholarships for teacher training	94%	5%

Notes: The table reports the results of calculating the percentage of students who said they remembered or did not remember each reform change. The sample is restricted to students in the treatment group, for whom we have information on information retention. Questions 2 and 5 were added as distractors to make sure we were truly capturing the capacity to recall information.

Appendix Table 4: Changes in Positive Opinions about the Teaching Career

	Opinion before the treatment (1)	Change in Opinion after the treatment (2)
Mathematics	-0.020*** (0.003)	0.017*** (0.006)
Socio-economic Level	-0.010* (0.006)	-0.013 (0.011)
Female	0.006 (0.011)	0.026 (0.019)
Patience	0.010** (0.004)	-0.005 (0.008)
Observations	2,984	2,984

Notes: The table reports the results of student-level regressions. The sample is restricted to students in the treatment group, for whom we have information on opinions on the teaching career. Both regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. In column (1), the dependent variable *Opinion before the treatment* is an indicator variable equal to 1 if a student answered positively to the following statements: (i) "Being a teacher is an attractive career for the young people of your generation;" (ii) "Being a teacher in Peru allows you to fulfill yourself as a person;" (iii) "Teachers make an important contribution to society;" (iv) "Teachers have job stability;" (v) "Teachers have good salaries;" (vi) "The work that teachers do is challenging and creative;" (vii) "Do you think that the quality of teachers will improve in the coming years?" In column (2), the dependent variable *Change in Opinion* is an indicator variable equal to 1 if student i reported $W_i(\text{after Treatment}) > W_i(\text{before Treatment})$, where W_i is the simple average of six indicator variables which are equal to 1 if student i answered positively to the above statements. Standard errors clustered at the school level in parentheses. Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix Table 5: Distribution of Likelihood of Studying Education before and after the Intervention

Likelihood of Studying Education	Pre	Post
Very Unlikely	30.4%	32.8%
Unlikely	41.5%	43.3%
Likely	18.1%	20.1%
Very Likely	2.7%	2.9%

Notes: The table reports the results of calculating the percentage of students who expressed varying levels of likelihood to pursue a career in education. The sample is restricted to students in the treatment group, for whom we have information on the likelihood of studying education: 3,243 students pre-intervention and 3,134 students post-intervention.

Appendix Table 6: Treatment Effects on Career Choice Including Technical Education Auxiliary Assistance

	(1)	(2)	(3)	(4)	Obs.	Control Mean
Probability of studying an education-related major	0.009* (0.005)	0.009* (0.005)	0.009* (0.005)	0.009* (0.005)	5,447	0.012
Cognitive Skills	No	Yes	Yes	Yes		
Socio-Demographic Variables	No	No	Yes	Yes		
Non-Cognitive Skills	No	No	No	Yes		

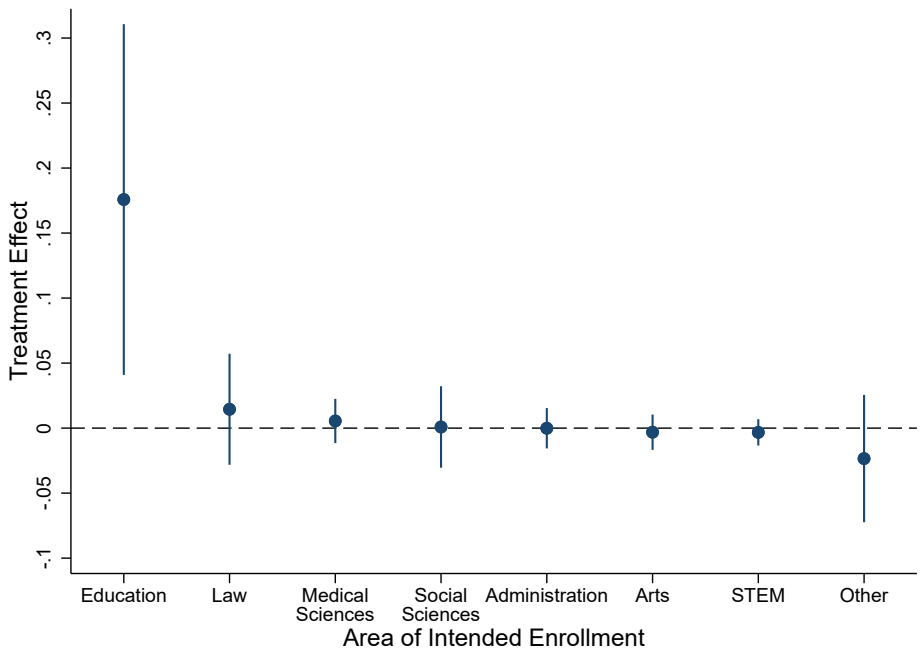
Notes: The table reports the results of student-level regressions. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. Column 1 includes no additional controls. Column 2 controls for math and productive vocabulary test scores, as well as GPA. Column 3 adds socioeconomic level, and gender as controls. Column 4 includes the patience score as an additional control. Standard errors clustered at the school level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix Table 7: Treatment Effects on Career Choice Excluding Replacement Schools

	(1)	(2)	(3)	(4)	Obs.	Control Mean
Probability of studying an education-related major	0.010* (0.005)	0.011* (0.006)	0.010* (0.006)	0.010* (0.006)	4,009	0.013
Cognitive Skills	No	Yes	Yes	Yes		
Socio-Demographic Variables	No	No	Yes	Yes		
Non-Cognitive Skills	No	No	No	Yes		

Notes: The table reports the results of student-level regressions. All regressions include stratification fixed effects, controls for school administrative dependence, and whether the student was held back a year. Column 1 includes no additional controls. Column 2 controls for math and productive vocabulary test scores, as well as GPA. Column 3 adds socioeconomic level, and gender as controls. Column 4 includes the patience score as an additional control. Standard errors clustered at the school level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix Figure 2: Treatment Effects Conditional to Area of Intended Enrollment



Notes: Each dot represents the point estimate of the treatment indicator variable estimated following equation 1, where the dependent variable is whether the student chose an education-related major, conditional on their main intended area of study at baseline. All regressions include stratification fixed effects and controls for school administrative dependence, whether the student was held back a year, math and productive vocabulary test scores, GPA, socioeconomic level, gender, and patience score.

A Intervention Content Appendix

The following text corresponds to the translated transcripts of the two videos shown in the intervention, along with screen captures to illustrate.

Video 1:

Text: I want to be a teacher



Voice 1: Did you know that the government passed a law to reform the magisterial career, changing the work conditions of teachers? I'll explain these improvements to you. There are four main components.

Text: Your trajectory matters

Voice 1: The public magisterial career now values your merits. What does this mean? That the more merits you receive as teachers, the more you are promoted in the public teaching career. And promotions will consider not only our time as teachers but also our teaching performance, our professional ethic, and our formation.

Text: Performance, Ethics, Formation

Voice 1: That way, if we do a good job we succeed. Wuhu, Yeah! Promotion processes will have an evaluation committee formed by professionals who have already been evaluated and have earned the promotion.

Text: Higher wages with promotion

Voice 1: Mm... you're moving too fast. Yes, this is the second main component of the law: better wages the higher we go. Moreover, there are additional economic stimuli, like when you're a teacher in rural areas, where you're needed the most.



Text: You're needed!

Voice 1: Exactly! The bigger the challenge, the bigger the reward.

Text: Notable Performance: Masters or PhD

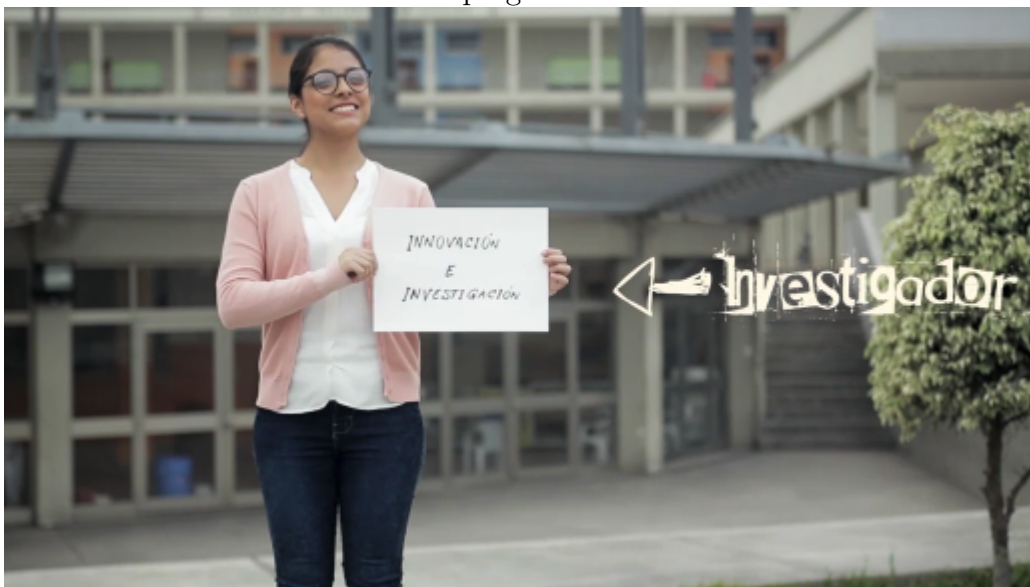
Voice 1: If I'm recognized for my notable performance, and I want to pursue a master's degree or a PhD, what do you think?

Text: Access to training, scholarships and master's degrees

Voice 1: These degrees are part of the third main component that the law improves. If we're good, we can apply to obtain scholarships and pursue graduate studies. Aha! The scholarships are either in Peru or abroad. Oh! I was thinking about all I want to do.

Text: Different areas of professional development

Voice 1: You're the one who's helping me.



Voice 2: Yes, you can also do other things that you like, and that's the final point that the law improves. You study education not only to be a teacher but to grow and develop as a professional, such as a principal, consultant, or researcher. And what's better, everything

is based on our merits.

Text: Because of your merits. I want to be a teacher

Voice 1: This is why I started with this phrase, because I'm already convinced, I want to teach!

Text: I want to teach!

Voice 2: Me too!



Voices 1 and 2: And you?

Voice 1: Summing up, the improvements that come with the magisterial law reform are: your trajectory matters, higher wages with promotions, access to training, scholarships and graduate degrees, and access to different areas of professional development.

Video 2:

Text: Do you want to change the world?

Voice 1: You're obviously thinking that it's impossible to change the world.



Text: No one's helping me. The seas are rising. Poverty. Wars. Selfishness. Hunger.

Global Warming.

Voice 1: I can understand why you think like that.



Voice 2: Maybe you think only geniuses can change the world, right? You just put them in a room together, and that's it.

Voice 1: Wow, I'm impressed.

Voice 2: Maybe you think that only people with a lot of money can change the world? Buy. Buy. The formula to change the world. Anyone?

Text: Buying. Formula to Change the World

Voice 1: Maybe you think that to change the world we need a mayor or a congresswoman or a president. Voice President: "We accomplish important tasks, one after another, with great effort. Yes"

Voice 2: I'll tell you a secret: changing the world is in our hands. In people like you.



Text: Teaching

Voice 1: Here, in a classroom. If your job is here every day, and we do it well...

Voice 1: We can generate changes in lots and lots of people that hope for things to be different.

Text: Changing people. Differences

Voice 2: This is how by being teachers, we can set an example for everyone and help develop responsible, respectful, and helpful individuals with strong values—people who will strive to build a society we can all be proud to live in.

Text: Responsible. Respectful. Helpful. Values. Proud

Voice 1: I want to change the world!

Voice 2: Me too!

Voice 1: I can't waste any more time. I have to go study so I can teach a lot of things.



Voice 1 and 2: Want to join us?

B Randomization Appendix

B1 Comparison of Universe, Eligible, and Experimental Samples

Table B1 presents a comparison of the characteristics of the universe, eligible, and experimental samples of high schools, using data from ESCALE 2014. The table reports the averages of the listed variables for each sample. Our sample exhibits similar observable characteristics, both for students and schools, to those in the Metropolitan Lima area (our universe of schools) and the eligible universe of schools. The universe of schools has a smaller average number of students, which is due to the eligibility criterion that excluded schools with fewer than 30 senior-year students from both the eligibility and experimental samples. In summary, the consistency of observable characteristics across the universe of schools, eligible schools, and the final experimental sample suggests that the selection process effectively preserved a representative sample that reflects the broader population of schools.

Appendix Table B1: Sample Representativity

Variables	Universe (1)	Eligible (2)	Experimental (3)
Total Students in Senior Year	42.46	78.92	76.44
Total Female Students in Senior Year	21.83	40.83	39.07
Average Age of Senior Year Students	16.03	15.96	15.94
Public School (1 = Yes, 0 = No)	0.23	0.19	0.20
Total Number of Labs	0.54	0.78	0.73
Total Number of Libraries	0.56	0.64	0.60
Share of Computers per Student	0.29	0.19	0.17
Use of Educational Software (1 = Yes, 0 = No)	0.38	0.41	0.37
Share of Female Teachers	0.48	0.48	0.49
Average Number of Teachers w/ Pedagogy Degree	0.90	0.88	0.89
Average Teaching Hours of Teachers	24.82	24.73	24.75
Number of Schools	2,716	624	250

Notes: The table reports the results of averaging each variable across schools using data from ESCALE.

B2 Sample Overview: From Intended to Final Sample

From our initial sample of 200 schools, data collection and the implementation of the intervention were not feasible in 74 schools (19 treatment and 55 control), primarily because the data collection period coincided with government-sponsored student learning evaluations for high school students. Additionally, extreme weather events caused some schools to suspend classes during the baseline data collection. We were able to replace only 50 of the affected schools with replacement schools. Furthermore, the company responsible for implementing the intervention mistakenly replaced 20 schools in the treatment group instead of 19. As a result, our final sample consists of 176 high schools: 81 schools in the treatment group and

95 in the control group. Table B2 summarizes these steps and reports the number of schools at each stage, disaggregated by treatment arm.

Appendix Table B2: Intended, Affected, Replacements, and Final Schools

	Treatment	Control	Total
Intended Sample	80	120	200
Inaccessible/Implementation Issues	19	55	74
Replacements	20	30	50
Final Sample	81	95	176

Table B3 compares the average observable characteristics of schools and students across our intended sample, the schools that did not participate in the experiment, replacement schools, and the final sample of schools. It reports the p-values associated with the null hypothesis that the mean difference for a given characteristic, when comparing each pair of school groups, is equal to zero, using data from ESCALE 2014. Column (1) considers our intended sample of 200 schools, comparing the 80 schools in the treatment group with the 120 schools in the control group. Column (2) considers our effective sample of 176 schools, including replacements, with 81 schools in the treatment group and 96 in the control group. Column (3) considers our effective sample excluding replacements, comprising 126 schools, with 61 in the treatment group and 65 in the control group. Column (4) compares our 176 compliant schools, including replacements, with the 74 non-compliant schools that did not participate in the experiment due to inaccessibility or implementation problems. Column (5) presents the same comparison, excluding the replacement schools.

The results indicate that, for most observable characteristics of schools and students, the differences between each pair of groups are not statistically significant across the five comparisons. However, we find significant differences in the number of public schools, across all five columns. Additionally, in our effective sample, the difference in the number of teachers with pedagogy degrees is statistically significant. Finally, in our initial intended sample of schools, there are significant differences in the average share of female teachers and the number of teachers with pedagogy degrees between the treatment and control groups.

Appendix Table B3: Comparison of Observable Characteristics of Different Groups

Variables	p-value $H_0 : \mu_T = \mu_C$ (1)	p-value $H_0 : \mu_T^{*R} = \mu_C^{*R}$ (2)	p-value $H_0 : \mu_T^{*NR} = \mu_C^{*NR}$ (3)	p-value $H_0 : \mu_C^R = \mu_{NC}$ (4)	p-value $H_0 : \mu_C^{*NR} = \mu_{NC}$ (5)
Total Students in Senior Year	0.32	0.19	0.31	0.85	0.90
Total Female Students in Senior Year	0.25	0.21	0.35	0.92	0.62
Average Age of Senior Year Students	0.32	0.46	0.50	0.26	0.17
Public School (1 = Yes, 0 = No)	0.01	0.09	0.02	0.06	0.02
Total Number of Labs	0.45	0.59	0.18	0.28	0.86
Total Number of Libraries	1.00	0.80	0.42	0.65	0.98
Share of Computers per Student	0.86	0.32	0.18	0.87	0.97
Use of Educational Software (1 = Yes, 0 = No)	0.17	0.18	0.10	0.69	0.44
Share of Female Teachers	0.03	0.10	0.11	0.34	0.32
Average Number of Teachers w/ Pedagogy Degree	0.04	0.07	0.32	0.21	0.65
Average Teaching Hours of Teachers	0.82	0.36	0.75	0.81	0.14
Number of Schools in Group 1	80	81	61	176	126
Number of Schools in Group 2	120	95	65	74	74

Notes: The table reports the results of school level regressions using data from ESCALE. T, C, and R correspond to treatment, control, and replacement schools in the original intended design. T^{*R} and C^{*R} represent effective treatment and control schools, including replacements, while T^{*NR} and C^{*NR} represent effective treatment and control schools, excluding replacements. NC refers to non-compliant schools, meaning those assigned to either treatment or control but that did not participate in the experiment. Consequently, C refers to compliant schools, where C^R denotes compliant schools including replacements, and C^{*NR} denotes compliant schools excluding replacements. All regressions include strata fixed effects.

C Data Appendix

C1 Data Sources and Instruments

To analyze how well-informed young Peruvian students were about the changes introduced by the teaching career reform, and whether they viewed teaching as an attractive career path, we used the following set of instruments for the baseline:

1. Background Survey: includes modules on general data and contact information, home characteristics, students' educational profile (including study habits and school achievements), post high school goals, and career choice (including type of educational institutions). Two additional modules were applied to all treated schools and a portion of the control schools, with questions regarding their perception and knowledge about the teaching career, as well as their interest in pursuing this path.
2. Instrument for measuring skills. This instrument consisted on two parts. The first contained modules on:

(a) Personality

- i. Big Five: Factor analysis is applied to our personality survey data in order to identify the five broad dimensions commonly used to describe the human personality and psyche:
 - A. Extroversion
 - B. Agreeableness
 - C. Conscientiousness

- D. Neuroticism
- E. Openness
- ii. Empathy
- iii. Patience
- iv. Firmness of Character
- (b) Cognitive Skills
 - i. Math
 - ii. Reading Comprehension
 - iii. IQ

The second one included only a test on productive vocabulary as a measure of writing skills. This test was administered at the end because it was the only one that had a predefined time (three minutes).

This battery of instruments was piloted on 30 students in their 5th year of secondary education at two separate institutions during the month of July 2015. The pilot was complemented with two focus groups of 12 students to gain more detailed feedback on the applied instruments.

Right after finishing the intervention, a small midline survey was conducted to measure immediate changes in perception and opinion regarding a teaching career. This survey contained questions regarding:

1. What they remembered about the changes in the Public Magisterial Career (the question lists characteristics of the changes associated with the reform as well as a test to determine the validity of the question by adding an affirmation that is not included in the changes).
2. Their opinion regarding the teaching career, in the same format asked at baseline.

Finally, an endline survey was conducted, looking for information regarding actual career choices, to see if the treatment had an impact on the choice of becoming a teacher. This survey includes modules on:

1. Current situation: focuses on their path after high school graduation, including employment status, whether they pursued higher education, and their reasons not to when applicable.
2. Higher education: including information regarding their career choice, the type of institution they are attending/attended, how they financed their studies, whether they pursued more than one career, and their wage expectations, among other things.
3. Education career: This module, applied only to those who declared having studied education, inquires on their specialization, their reasons for pursuing this career, among other things.

C2 Variables Description

Appendix Table C1: Variables and Description

Variables	Description
Baseline Survey	
Age	Age of student at baseline
Female	Indicator variable indicating whether the student is a woman (=1) or man (=0)
Failed a Class	Indicator variable indicating whether the student has failed a class (=1) or not (=0)
GPA	Grade Point Average of Student in their Senior Year
Mathematics	Std. score of Mathematics Test delivered at Baseline
Reading Comprehension	Std. score of Reading Comprehension Test delivered at Baseline
IQ	Std. score of IQ Test delivered at Baseline
Productive Vocabulary	Std. score of Productive Vocabulary Test delivered at Baseline
Extraversion	Std. score of Extraversion Test delivered at Baseline
Agreeableness	Std. score of Agreeableness Test delivered at Baseline
Neuroticism	Std. score of Neuroticism Test delivered at Baseline
Openness	Std. score of Openness Test delivered at Baseline
Conscientiousness	Std. score of Conscientiousness Test delivered at Baseline
Empathy	Std. score of Empathy Test delivered at Baseline, based on Personality Questionnaire
Risk Aversion	Std. score of Risk Aversion Test delivered at Baseline, based on Personality Questionnaire
Firmness	Std. score of Firmness Test delivered at Baseline, based on Personality Questionnaire
Patience	Std. score of Patience Test delivered at Baseline, based on Personality Questionnaire
Area: Humanities	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a career in humanities
Area: Social Sciences	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a career in Social Sciences
Area: Natural and Formal Sciences	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a career in Natural and Formal sciences
Area: Applied Sciences	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a career in Applied Sciences

Appendix Table C1 – continued from previous page

Variables	Description
Public Institution	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a degree in both a public university and public institution
University	Indicator variable indicating whether the student is likely (=1) or not (=0) to pursue a degree in both a private and public university
Career Contributes to Society	Indicator variable indicating whether the student thinks that their career contributing to society is an important criterion (=1) or not (=0) for choosing their major
Student is Patient	Indicator variable indicating whether the student names being patient as one of the reasons for considering (=1) or not (=0) a career in teaching
Student has Vocation	Indicator variable indicating whether the student names their vocation as one of the reasons for considering (=1) or not (=0) a career in teaching
Family Reasons	Indicator variable indicating whether the student names family reasons as one of the reasons for considering (=1) or not (=0) a career in teaching
Easy to Study	Indicator variable indicating whether the student names education as a major being easy to study as a reason for considering (=1) or not (=0) a career in teaching
Scholarship Opportunities	Indicator variable indicating whether the student names scholarship opportunities as a reason for considering (=1) or not (=0) a career in teaching
Prestige of Education	Indicator variable indicating whether the student names the prestige of the education sector as a reason for considering (=1) or not (=0) a career in teaching
Intermediate Survey	
Knows about Changes	Student declares knowing about the changes of the teaching career (=1) or not (=0)
Thinks Changes are Positive	Student considers the changes are good (=1) or not (=0)
Thinks Government will maintain the Changes	Student thinks the government will maintain the changes introduced in the reform (=1) or not (=0)
End-line Survey	
Probability of Enrolling in Tertiary Education	Indicator variable indicating whether the student enrolled into tertiary education
Probability of Studying an Education-Related Major	Indicator variable indicating whether the student chose a career in education
Public University	Indicator variable indicating whether the student chose a Public University

Appendix Table C1 – continued from previous page

Variables	Description
Private University	Indicator variable indicating whether the student chose a Private University
Public Institute	Indicator variable indicating whether the student chose a Public Institute
Private Institute	Indicator variable indicating whether the student chose a Private Institute
Private Financing	Indicator variable indicating whether the student used Private Financing for their Tertiary Education
Scholarships	Indicator variable indicating whether the student used Scholarships to finance their Tertiary Education
Months Before First Entrance	Number of Months that passed between the student's high school graduation and their first entrance to Tertiary Education
Months Before Current Entrance	Number of months that passed between the student's high school graduation and their current entrance to Tertiary Education
Changed Major	Indicator variable indicating whether the student Changed Majors
Working while Studying	Indicator variable indicating whether the student is Working while Studying
Expected Wages	Current expected wage of the student
Processed Variables	
Socio-Economic Level	Std. index of socio-economic level based on a factor analysis of variables regarding assets, household materials and structure, and access to services
Intention to Teach	Indicator variable indicating whether the student intended to pursue a career in education at baseline based on their revealed major preferences
Criteria: Lower Costs	Std. index of a factor analysis of different variables focusing on lower explicit or implicit costs as defining criteria when choosing a major
Criteria: Job Quality	Std. index of a factor analysis of different variables focusing on job quality as defining criteria when choosing a major.
Criteria: Interests	Std. index of a factor analysis of different variables focusing on interests as defining criteria when choosing a major.
Reasons: Job Quality	Std. index of a factor analysis of different variables defining job quality reasons for choosing or not to study a major related to education

Appendix Table C1 – continued from previous page

Variables	Description
Teaching Career: Prestige	Std. index of a factor analysis of different variables defining the prestige of the teaching career as an important factor
Teaching Career: Job Quality	Std. index of a factor analysis of different variables defining the job quality level of the teaching career as an important factor
Change Opinion	Indicator variable indicating whether the student changed their response of the teaching career positively after the treatment (=1) or not (=0)