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Climate Change in the Classroom

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Abstract

Knowledge gaps and biased beliefs concerning both climate change and climate policy represent major obstacles to the decarbonization process. Climate education may offer a scalable solution to address such obstacles. In the context of a national reform of the school curriculum in Italy, we implemented a nationwide field experiment, training thousands of secondary school teachers across thousands of schools using a staggered design. Our intervention, a comprehensive course on climate change and climate policy, goes beyond the light-touch interventions typical in the literature. Using extensive survey data, we examine how training affects teachers' knowledge, beliefs, attitudes, behaviors, and policy preferences and, in turn, those of students. Our study highlights important initial knowledge gaps and biased beliefs about climate change among teachers and students, and provides evidence that climate education can address them at scale. Following our intervention, teachers and students also reconsider their support for climate policies.

JEL classification

C93, D72, D83, Q54

Keywords

climate change and policy, field experiment, biased beliefs, public support, climate education, secondary schools

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1 Introduction

Climate change is one of the most pressing issues of our century. Yet, knowledge about climate change (the problem) and climate policy (the solution) is not universal among the general public, with biased beliefs still playing an important role in present day policymaking (Millner and Ollivier 2016; Egan and Mullin 2017; Carattini et al. 2018).

A growing literature uses survey experiments to address knowledge gaps and biased beliefs, with scholars providing information directly to samples of citizens, usually online (see Haaland et al. 2023 for a general review). However, the challenge for policymakers and civil society consists in addressing knowledge gaps and biased beliefs among the entire population – or at least key cohorts – in real-world settings, where information arrives from many sources, potentially with conflicting interests (on climate change see Oreskes and Conway 2011; Supran and Oreskes 2017; Brulle 2021; Farrell et al. 2019; Wetts 2020; Supran et al. 2023).

In the case of climate change, climate education in schools is a natural candidate policy to provide information at scale to the youngest generations – voters and leaders of tomorrow – and potentially also to older adults, for instance, in their roles as educators. While topics related to climate change are gradually expanding across school curricula, generally at the discretion of teachers and school principals, there is still very limited understanding of broader, at-scale interventions bringing climate change into the classroom in a systematic fashion.

In this paper, we address this gap by implementing a randomized intervention at scale. Our intervention provided training on climate change and climate policy to over 9,300 Italian secondary school teachers across over 2,800 schools. Importantly, we coordinated the design and fielding of our intervention with the main features and

timeline of a curricular reform of civic education, which introduced the teaching of climate change in all Italian schools and grades starting in the school year 2020-2021.[1] This reform makes Italy the ideal context to examine the potential of climate education to provide information at scale.

To this end, we developed a proprietary course on climate change and climate policy, targeting teachers in lower- and upper-secondary schools (grades 6-8 and 9-13, respectively). The course's structure mirrors closely the organization of the Intergovernmental Panel on Climate Change (IPCC)'s working groups. The first module covers the hard science of climate change, including origins and causes, measurement, and evolution. The second module covers the impacts of climate change. The third module covers mitigation, including climate policies and behavioral change at the individual level, as well as potential margins of adaptation.

The course was free of charge and delivered online through video lectures, complemented by interactive cards and quizzes. The course material was made available to all teachers who registered for the course and was ready for use with their students. We focus on secondary education, as use of the material with younger students would most likely require substantial re-calibration to the primary education curriculum. Study participants were free to customize the material to their teaching needs.

We randomly invited, at the same time, all Italian secondary schools, directly and through provincial school boards, to one of two editions of the course, based on their province of work. The two editions took place in a staggered fashion. Hence, our design

[1]The reform received international media coverage in 2019, with headlines such as, "Italy to become first country to make learning about climate change compulsory for school students" on *CNN*, "Italy to put sustainability and climate at heart of learning in schools" in *The Guardian*, and "Italy's students will get a lesson in climate change" in *The New York Times* (see `https://www.cnn.com/2019/11/06/europe/italy-climate-change-school-intl-scli-scn`, `https://www.theguardian.com/global-development/2019/nov/06/italy-to-school-students-in-sustainability-and-climate-crisis`, and `https://www.nytimes.com/2019/11/05/world/europe/italy-schools-climate-change.html`, last accessed, January 20, 2026).

combines clustering, encouragement, and staggering.

Before and after our intervention, we surveyed thousands of teachers and students, to measure their knowledge, attitudes, beliefs, preferences, and behaviors. Administrative data from various sources, as well as paradata from the online platform used to deliver the course, complement our surveys.

With our field experiment, we address two main questions. First, suppose you want to teach climate change systematically in secondary schools: where do you start? Second, can formal education about climate change and climate policy address knowledge gaps, and if so, does it also shape attitudes, beliefs, preferences, and behaviors? We address the first question descriptively, leveraging the baseline survey. We address the second question causally, leveraging random variation in exposure to our course on climate change and climate policy.

Many important insights follow from this field experiment. Concerning our first research question, we document the limited knowledge teachers and students have of the subject at baseline, which is even more pronounced when it comes to economic policies for climate mitigation. Teachers' coverage of climate change was limited prior to our course, if anything focusing mostly on the hard science and most well-known features, such as the greenhouse gas effect and sea level rise. Teachers, however, are generally aware of their limited preparedness and eager to learn more. In fact, as teachers tend to represent the underlying society, we even identify a small but non-negligible fraction of climate skeptics among them.

As for our second question, we find that the course substantially improves knowledge among teachers and students compared to the control group, while also addressing specific dimensions of climate skepticism. In particular, we document more accurate beliefs about the anthropogenic origins of climate change and higher perceived preparedness

on both climate change and climate policy. Relatedly, teachers' and students' assessments of and preferences for economic instruments to tackle climate change are affected by climate education. Our course changes stated support for climate policies, following belief revision about specific policies' effectiveness and distributional effects. Teachers also reconsider their plans concerning carbon-intensive behavior, following belief revision about the harmfulness of climate-unfriendly behaviors such as flying.

This paper contributes to multiple strands of literature. First, a growing literature in economics that examines people's understanding of economic problems and their solutions, as well as people's support for the latter. In this stream of work, while information provision is often randomized, its impact is typically assessed within survey experiments (e.g., Stantcheva 2021; Alesina et al. 2023; Haaland and Roth 2023). In the context of environmental policy, causal evidence on biased beliefs originated in the lab, including on belief revision following experience with new policies (e.g., Cherry et al. 2014; Dal Bó et al. 2018), a pattern that has been observed causally also in the field (Carattini et al. 2018). Hence, information provision has been used as an imperfect substitute for actual policy experience (e.g., Carattini et al. 2017, Carattini, Kallbekken, and Orlov 2019, Dal Bó et al. 2018; Carattini et al. 2024 for previous studies and e.g. Douenne and Fabre 2022; Dechezleprêtre et al. 2025 for concurrent studies). Yet, addressing knowledge gaps at scale requires informing large subsets of the population, including tomorrow's voters and leaders, in more depth and in a way that can have persistent effects.

No study has so far implemented an intervention akin to ours, providing direct policy implications by testing the type of intervention that governments could implement as well, at a similar scale. Our intervention, a comprehensive course on climate change and climate policy at the national level, speaks directly to policymakers by going beyond the

light-touch interventions commonly used in surveys and other field experiments. Our intervention also accounts for two elements that have often eluded researchers relying on controlled environments (lab and survey experiments). First, persistence: as in our study the outcomes are measured on average several months after exposure to the course content, in particular for teachers. Second, spillover effects onto other individuals, in our case from teachers to students.

Second, and related to the previous point, our paper speaks to an established literature in political economy and political science about the ideal of an informed citizenry and the role of misinformation in politics (e.g., Bartels 1996; Kull et al. 2003; Healy et al. 2010; see also DellaVigna and Gentzkow 2010; Allcott and Gentzkow 2017 for reviews). Our paper shows the potential of nationwide reforms of school curricula to, everything else equal, reduce misinformation and move closer to that ideal.

Third, our paper connects to a recent literature highlighting the importance of implementing interventions at scale to maximize policy relevance (e.g., Deaton 2010; Al-Ubaydli et al. 2017, 2021; List 2022, 2024), by accounting for "option-C thinking" (List 2024) and using the same scale as for governmental interventions.

Fourth, our paper relates to a cross-disciplinary literature evaluating, usually qualitatively, climate education initiatives, or investigating, quantitatively but on a small scale and not necessarily causally, the relationship between education and climate-relevant outcomes (e.g., Bozdoğan et al. 2011; Leal Filho and Hemstock 2019; Monroe et al. 2019; Worth 2021). We complement this literature by providing quantitative evidence from a large-scale, nationwide field experiment implemented at the scale of a government intervention.

Fifth, we contribute to a field-experimental literature within the economics of education, implementing randomized interventions inside or around the classroom (e.g.

Avvisati et al. 2014; Alan et al. 2019; Papay et al. 2020; Alan et al. 2021; Dhar et al. 2022), as well as studies linking formal education and belief formation from different perspectives (e.g. Cantoni et al. 2017; Monroe et al. 2019; Cordero et al. 2020; Worth 2021; Angrist et al. 2024; Braghieri and Eichmeyer 2025; Briole et al. 2025). Our intervention is unique in tackling knowledge gaps about climate change and climate policy at scale.

Finally, our paper belongs to a literature measuring beliefs and expectations quantitatively (e.g., as subjective probabilities), and studying how these are formed, revised in response to new information, and affect economic behavior (e.g., Dominitz and Manski 1996; Delavande 2008a,b; Wiswall and Zafar 2015a,b; Ciancio et al. 2024; Giustinelli and Shapiro 2024; Giustinelli and Leuven 2026); see also Manski (2004)'s review and the recent handbook of economic expectations (Bachmann et al. 2023). We apply these techniques to the context of beliefs about climate change and climate policy and measure how these beliefs and, through them, behaviors and plans respond to climate education with a field experiment.

The remainder of this paper is organized as follows. Section 2 describes the institutional context of our intervention. Section 3 introduces our research design. Section 4 presents our data. Section 5 details our empirical approach. Sections 6 and 7 report our findings. Section 8 concludes.

2 Institutional Background

Our project leverages the unique context of Italy, the first country to formally introduce by law (L. 92/2019) the systematic teaching of climate change within the curriculum of

civic education in all school grades (1-13), starting in the school year 2020-2021.[2] Within this context, we designed and implemented a nationwide large-scale field experiment, coordinated with the timeline and main features of the reform, to evaluate the impact of training secondary school teachers about climate change and climate policy on teachers' outcomes and its spillovers onto students'.[3]

Civic education was first introduced in Italian schools by Decree 585/1958 as part of the history curriculum and was limited to lower- and upper-secondary education (grades 6-8 and 9-13, respectively). Specifically, the decree required that the history curriculum included the teaching of the national constitution, the rights and duties of citizens, and the institutional organization of the country. In the following decades, civic education was gradually eliminated from the curriculum, first by limiting its teaching to one hour a week in lower-secondary (i.e. junior-high) schools as of 1979, and then by eliminating its teaching altogether in 1990. An attempt to reintroduce civic education was made in 2008 via a pilot whose implementation was left to schools' autonomy. The recent reform put civics at the center, by identifying its teaching as strategic in shaping future citizens; by widening its scope beyond the legal and institutional domain (constitution, rights and duties of citizens, institutional organization of the country, etc.) to include topics related to social assimilation, diversity and inclusion; as well as climate change and sustainability; and digital citizenship; and by explicitly recognizing its cross-disciplinary nature which, by law, should be reflected in its teaching.

Indeed, the law prescribes that in each class the new civic education be taught for at least 33 hours a year across multiple school subjects (instead of as a standalone subject), with possibly multiple teachers in charge of its teaching ("titolari") and one acting as

[2]Law 92/2019 was passed on August 20, 2019 and subsequently implemented by Ministerial Decree 35/2020 as of June 22, 2020.

[3]We had initially planned to further evaluate potential spillovers from students to parents, but parental participation ended up being low.

class coordinator ("coordinatore"). School-level coordinators were also introduced to facilitate implementation.

The new civic education is organized around three main domains or thematic pillars. The first pillar includes topics such as constitution, law (national and international), legality, and solidarity. Thus, the first pillar covers aspects that were already part of civic education in the past, as well as more current ones such as diversity and inclusion or social assimilation.

The second pillar deals with sustainable development, environmental education, and knowledge and protection of heritage and territory. Both Law 92/2019 and especially Decree 35/2020 identify as a key reference the 2030 Sustainable Development Agenda of the United Nations. In particular, the knowledge and skill profiles required of students by the end of secondary education were updated to include specific ones needed to achieve the United Nations 2030 Sustainable Development Goals, with a strong focus on protection of the environment and natural resources (goals 6-7 and 14-15) and addressing climate change (goal 13).

The third pillar revolves around digital citizenship. The rationale is to prepare students for a world where online interactions are ubiquitous, providing both opportunities and risks youths need to understand and manage.

Realizing that actual implementation of the new curriculum inside the classrooms would require concrete support measures to schools and teachers, in July 2020 the Italian government issued a training plan for teachers.[4] Specifically, civic coordinators were required to acquire formal training via modules of at least 10 hours, to be completed

[4]Ministero dell'Istruzione e del Merito. Piano per la formazione dei docenti per l'Educazione Civica di cui alla L. n. 92/2019 Nota prot. AOODGPER.REGISTRO U.0019479. 16-07-2020 (`https://www.mim.gov.it/documents/20182/0/Prot.+n.19479+del+16+luglio+2020.pdf/2932cc93-c9d8-b345-c29e-43abad07abfb?version=1.0&t=1595423161431`, last accessed, January 20, 2026).

and certified by June 30, 2021. Civic coordinators would then provide 30 hours of tutoring to other teachers, following a model of "cascade training."

In fact, Italian teachers are expected to keep their knowledge and skills up to date by regularly acquiring additional training, with no additional financial incentives provided for continued education. Courses officially recognized by the government as valid for continued education are listed on a platform known as S.O.F.I.A.[5] The training of civic education coordinators was no exception to these rules.

Our study focuses on the reform rollout year, i.e., the school year 2020-2021. For context, we note that despite the change in government following the snap elections of September 2022, with a right-wing government in power since October 2022, the curricular reform of cross-disciplinary civic education has been maintained to date and, to the best of our knowledge, there are no plans to repeal it or change it substantially.[6]

3 Research Design

The Italian reform of civic education and its underlying institutional setting created a unique opportunity, but also some challenges, for evaluation. First, introduction of cross-disciplinary civics was implemented simultaneously in all Italian schools. Second, because of the autonomy granted to schools by the Italian law ("autonomia scolastica"), the actual exposure of students to topics in climate science and climate policy may vary

[5]Standing for "Sistema Operativo per la Formazione e le Iniziative di Aggiornamento del personale della scuola," i.e., a system for the training and continued education of school personnel.

[6]New guidelines were issued in September 2024, renaming the first pillar "Constitution" and the second pillar "Economic Development and Sustainability," and emphasizing themes such as individual, nation, and business, over themes such as environment and work (`https://www.mim.gov.it/documents/20182/0/Linee+guida+Educazione+civica.pdf/9ffd1e06-db57-1596-c742-216b3f42b995?t=1725710190643`, last accessed, January 20, 2026). At the same time, the main features of cross-disciplinary civics remained substantively unchanged. This is fully consistent with Italy's loss of 15 positions in the 2023 ranking by Germanwatch, due to changes in long-run goals rather than to rollback of existing policies.

endogeneously across Italian regions, schools, and even classes.

To address these issues, we decided to create a free online course on climate change and climate policy and randomize its offering among secondary school teachers based on their province of work (equivalently, school district) to evaluate its effects.[7]

We structured our course in three modules, along the lines of the working groups of the Intergovernmental Panel on Climate Change (IPCC), the body within the United Nations tasked with condensing the scientific consensus about climate change. The three working groups cover a wide variety of disciplines and so did the content provided in our course. The first module covered the "hard" science of climate change, its origins, measurement, evolution, and causes. The second module focused on impacts of climate change. The third module addressed the question of how to mitigate climate change, as a society through economic instruments for climate policy and as an individual by learning about the implications of various behaviors. It also addressed the question of how to adapt to climate change, also as a society and as an individual. Appendix Section C describes the content of the course in detail.

Crucially, the course was ready in July 2020, when the Italian government mandated the training of teachers, in particular civic education coordinators, and obtained formal institutional endorsement by being listed on the ministerial platform for teachers' continued education, S.O.F.I.A.

The main time frame of our intervention runs from August 2020, with the recruitment of teachers into our study, to May 2021, with the launch of the second edition of the course. In August 2020, we started recruiting secondary school teachers in all

[7]Italy has 107 school districts, one per province, managed by 86 superintendents, as 16 of them are responsible for 2 or 3 districts. Hence, in practice, we randomize treatment assignment and cluster our analysis at the superintendent level. However, to simplify exposition, we refer to randomization and clustering at the province level throughout the paper.

Italian provinces. All recruited teachers were given access to the online platform on which the course was going to be delivered and asked to fill out a short survey about themselves as course participants. This short survey allowed us to verify the respondent's province and double check treatment assignment. Teachers were also asked to take a longer survey (teacher baseline) and have their students respond to a similar survey (student baseline). These surveys are described in Section 4.

Operationally, we recruited eligible teachers by contacting all public and public-equivalent private lower- and upper-secondary schools nationwide, both directly and through the ministerial-accredited teacher training office of the University of Verona and many provincial school boards. Provincial superintendents and school principals were informed about the course's general content, online mode, and of its being free of charge. School principals were also asked to circulate the links to the baseline surveys among their teachers, students, and students' families.

We randomly assigned secondary schools between a first edition of the course available in September 2020 (treatment) and a second identical edition available at the end of the school year 2020-2021 (control), based on the school province. In this way, teachers from control provinces could also use our course to meet the training requirements within the deadline of June 30, 2021, and may be less prone to look for alternative courses. Moreover, by recruiting teachers from all provinces at the same time, we could ask them to encourage their students to participate in the baseline survey at the same time.

Teachers in the first edition of the course were informed that they would have until early 2021 to access the lectures and complete the course. After viewing all lectures, teachers could download a certificate of participation directly from the course website and also separately claim an institutional certificate on the S.O.F.I.A. platform. Before

downloading the certificate from the course website, teachers were asked to complete a short satisfaction survey evaluating the course, which provided us with information about teachers' preferences over the different modules and their perceived difficulty.

Our research design combines clustering, staggering, and encouragement components. Clustering refers to our choice of randomizing the course at the province level to minimize potential contamination from treatment to control units. A province in Italy is in many ways similar to a county in the United States, with increasingly granular alternatives being the school, class, and teacher levels. We opted for province-level randomization recognizing that contamination is not only likely across teachers within the same school, but is also possible across schools, as teachers teaching in different schools of the same province may know and get in touch with one another. Appendix Section A describes in detail the randomization process and provides tables showing covariate balance based on administrative data. Appendix Section B provides power calculations.

Staggering refers to our choice of offering the course also to teachers from the control provinces, in the form of a second edition which took place after what we consider to be the time frame of our study, at least for the purpose of evaluation.

Encouragement refers to our control over the randomization of the treatment assignment (i.e., the edition of the course recruited teachers were invited to take based on their province), but not of the actual treatment, as ultimately teachers decided whether or not to accept our invitation. This raises the possibility of imperfect compliance, whose implications for our empirical approach are discussed in Section 5.

In our setting, recruited teachers from treatment provinces may have failed to take the first edition of the course, due to a missed invitation, time constraints, or other reasons. The opposite case, in which recruited teachers from control provinces would

access the first edition of the course, is highly unlikely in our setting. First, access to the first edition of the course was granted only to teachers working in schools located in provinces assigned to treatment. Second, it is unlikely that teachers in treatment provinces shared the course material with colleagues working in control provinces, as confirmed by our data collection, as described in Section 4. A final related issue, potentially leading to lower-bound estimates, is whether teachers in control provinces engaged in differentially more training (other than from our course) than teachers in treatment provinces over the duration of the first edition of our course. While we believe that offering the course to everyone at recruitment limited control teachers' inclination to look for alternative courses, our data collection also accounts for this possibility.

Overall, we trained 9,363 teachers across 2,848 secondary schools, about 19% of the universe of Italian secondary schools, covering all 107 Italian provinces. 3,337 teachers, all from treatment provinces, enrolled in the first edition of the course. The remaining 6,026 teachers enrolled in the second edition. The latter include mainly teachers from control provinces and some teachers from treatment provinces who missed the first edition. Sections 4 and 5 discuss potential selection and how we address it.

4 Data Sources and Description

In this section, we describe our data sources and present basic sample statistics and tests relevant for our subsequent descriptive and causal analyses. Subsection 4.1 presents the different data sources. These include the administrative data we used for the randomization process; the teacher and student baseline surveys; the data generated by the course via the introductory and satisfaction surveys, as well as the meta-data provided by the course platform (Moodle); and the teacher and student endline (or

follow-up) surveys, which are largely similar to the baseline surveys in structure and content. Subsection 4.2 describes the samples we use in our analyses.

4.1 Data Sources

Administrative data for randomization The randomization process relied on administrative information at the province level. We used a total of 35 variables across four main categories: 1) indicators of the geographical location of provinces within Italy (North, Center, and South); 2) socioeconomic characteristics, such as total population, population density, unemployment rate, and income per capita; 3) school characteristics, such as total number of schools, total enrollment, and number of schools and enrollment by grade; 4) indicators of the penetration of green technologies and green behaviors, such as adoption of solar photovoltaics (PV), use of public transport, and density of cars, as potential proxies for green preferences and the potential impact of ambitious climate policies. All variables were constructed using data from the Italian Institute of Statistics (ISTAT). In Appendix Section A, as mentioned we use these administrative data to perform balance tests between treatment and control units. Table A.3 shows balancedness. In Appendix Section D.1, we further use administrative data on teachers' characteristics to compare our teachers' sample with the underlying teachers' population.

Baseline survey The baseline survey is organized in blocks. We now describe its content block by block, focusing on the teacher instrument and limiting any reference to the student instrument to the few elements in which it differed from the teacher instrument. In fact, the two instruments are very similar, except for the tone used to address the respondent: more formal for teachers and informal for students.

The survey opens with a brief introduction about the study. It then goes on to assess the respondent's eligibility and type (teacher, student, parent, other) and to route the respondent to the relevant version of the survey (non-eligible respondents were routed out of the survey). Next, it elicits the respondent's consent.[8] After the eligibility and consent steps are cleared, the actual survey begins.

The first block asks background questions about the respondent. Specifically, teachers are asked to report main characteristics and location (zip code and province) of the school(s) in which they currently work; their experience and contract (e.g., temporary versus permanent, part time versus full time); the classes and subjects they teach; whether they are the civic education coordinator for any of their classes – or anyway part of the group of teachers responsible for the cross-disciplinary teaching of the new civic education. If a teacher teaches in multiple schools, all questions are repeated for each school. Students are asked questions about their school type, school location, and the teacher who invited them to participate in the survey. Both teachers and students are asked their age, gender, and place of birth. Additional background characteristics are elicited in the final block of the survey.

The second block covers the teaching of civic education, including past engagement (school year 2019-2020) with topics of one or more pillars, and plans for the current school year (2020-2021). The block then zeroes in on the sustainability pillar, and asks detailed questions about past, present, and future treatment of climate change, including the number of hours devoted to it in class and the specific topics covered. Concerning the latter, the survey lists 30 topics in a relatively detailed way (e.g., carbon cycle, carbon footprint, carbon taxes), based on the structure of our course. In this part,

[8]Additionally, parents – including teachers who were parents of eligible students – were asked a separate consent for each of their eligible children to take the student survey. Before starting the survey, students were also asked to verify that their parents had consented to their participation and were given a link their parents could use to provide their consent, if they had not already done so.

teachers are additionally asked whether they have ever received training in the domains of the three pillars and, within the second domain, specifically on climate change, and whether they would be interested in receiving future training. The corresponding block in the student baseline mirrors the teacher one, focusing on the study of civic education, especially climate change, as treated at school.

The third block covers individual (or household) behaviors that are relevant for climate change mitigation, such as kilometers driven each year, commuting habits, continental and intercontinental flying, and meat consumption, among others. The survey asks retrospectively about past behavior (in 2019), as well as about planned behavior (for 2021). The survey also includes a battery of questions assessing respondents' reciprocation behavior under hypothetical scenarios describing climate-friendly efforts of varying degrees by fellow Italian citizens. Here, we are interested in the extent to which local social norms may drive cooperation also in global social dilemmas such as climate change mitigation, as posited in Carattini, Levin, and Tavoni (2019).

The fourth block elicits respondents' beliefs about climate change and climate policy. It starts with a battery of questions about the existence and anthropogenic origin of climate change. It then measures respondents' second-order beliefs about the beliefs held by climate scientists and the rest of the Italian population about the existence and anthropogenic origin of climate change. The module additionally measures respondents' perceived preparedness about climate change and then tests their factual knowledge ("climate literacy") with a battery of multiple-choice questions. Subsequently, the block elicits respondents' perceived preparedness on economic policy (borrowing from Stantcheva 2021), their preferences over various climate policy instruments, and their beliefs about the policies' effectiveness in reducing greenhouse gas emissions or local air pollution and about the policies' distributional effects. It further elicits respondents'

public support for a global carbon tax, in terms of tax rate and use of revenues (borrowing from Carattini, Kallbekken, and Orlov 2019). The module ends by measuring emotions related with climate change, including climate concern. The questions involving understanding of and support for climate policies were only asked to older students (grade 9 and over or grade 11 and over, depending on the question).

The fifth and last block measures standard socioeconomic characteristics; risk, time, and social preferences (borrowing from Falk et al. 2018); and, among teachers, detailed information about their educational background. In the student version, this block includes questions on information sources, family decision making, time allocation, school performance, future school choices, and parents' socio-demographic characteristics.

Data from the course When teachers registered for the course on the Moodle platform, they were asked to fill out a short introductory survey. The survey asked three questions: 1) the respondent's province of work; 2) the respondent's school (recall that the course was intended for secondary school teachers only); 3) how the respondent had become aware of the course. We use this information to ensure that no teacher from the control provinces could enroll in the first edition of the course, which was restricted to teachers from treatment provinces.

Upon completing the course and before receiving the course certificate, teachers were asked to fill out a short satisfaction survey. After a few initial questions covering personal information, such as the respondent's date and province of birth, teachers were asked to evaluate the course, both overall and module by module. Teachers were then asked to assess the difficulty of each module, both for themselves and their students. Teachers were further asked whether they had used the course material with their students, (if so) since when, and their use intention for the future. These questions

were also asked with reference to each course module, module topic, and content type (e.g., slides, quizzes, videos). The survey ended with an open-text question, allowing teachers to share freely their thoughts about the course. We use the information on the teachers' actual and intended use of our course material in their classes for our LATE-IV analysis described in Section 5.

Finally, the Moodle platform we used to deliver our course allowed us to collect additional information about course participants, as follows: (i) first name, last name, and email address; (ii) whether and when the participant viewed each component of the course, including announcements, introduction, slides, videos, end-of-module quizzes, surveys; (iii) whether and when the participant completed each course activity and the course overall; (iv) how many times and when the participant accessed the course and which part or activity; (v) how many times the participant attempted a quiz and the corresponding grade; (vi) whether the participant completed the evaluation survey; and (vii) whether and when the participant downloaded the course certificate. We use this information, in combination with that from the introductory survey, to ensure that no teacher from the control provinces could access the material of the first edition of the course. We further used these data to construct measures of received treatment, such as whether the teacher downloaded the certificate, viewed the course materials, etc., which we analyze in our LATE-IV analysis, described in Section 5.

Endline survey All teachers who had responded fully or partially to the baseline and had shared their e-mail addresses were invited to take an endline survey, which we launched post-treatment in April 2021. These teachers were also asked to invite their students to participate in a similar endline survey. Students of adult age who had shared their e-mail addresses at baseline were also recontacted directly.

The endline surveys followed closely the content of the corresponding baselines, with a few exceptions. First, the endline surveys did not repeat questions about respondent characteristics unlikely to change over a school year. Second, we updated the horizons of the questions about the teaching of civic education to the school years 2020-2021 (backward looking) and 2021-2022 (forward looking), and of those about environmentally relevant behaviors to the years 2021 and 2022. Third, because our intervention took place during the COVID-19 pandemic, in the endline survey we asked teachers to report the fractions of classes they taught in person and online and the corresponding fractions of working hours. Fourth, we introduced a new set of questions asking whether the respondents took our course; if so, whether they used or intend to use the course materials in their teaching (repeated for each module and type of support, i.e. slides, videos, quizzes, and interactive cards); whether they used the teaching material we provided as-is or adapted it to fit their students; and whether they received/shared our teaching materials from/with colleagues. We use the latter information to address potential contamination from treated teachers to control teachers.

In April 2021, we additionally launched a full survey with the same structure as the baseline survey, again recruiting teachers and their students through school principals, school superintendents, and the Moodle platform with the aim of potentially capturing responses from teachers and students who had taken the baseline survey without sharing their e-mail addresses and from new teachers and students who had not taken the baseline. This second baseline included all questions from the endline, plus the questions from the first baseline excluded from the endline.

4.2 Descriptive Statistics

In this subsection, we provide a high-level description of the main samples we use in our empirical analysis, with details available throughout Appendix Section D. These samples are the teachers' panel sample, consisting of 2,906 teachers (across 1,749 schools and 106 provinces) who answered both the baseline and endline surveys, and the students' baseline and endline samples, consisting of 5,363 and 2,413 students who completed respectively the baseline and endline surveys. The students' panel sample is limited to 447 respondents.

Appendix Section D.1 covers the teachers' baseline sample, with Table D.1 showing main sample statistics and Table D.2 comparing the sample with the underlying population of Italian secondary school teachers along age, gender, and macroarea, based on statistics from the OECD and the ISTAT. Our sample compares favorably with the population in terms of age and gender. Area-wise, teachers based in the North are somewhat overrepresented in our sample, and teachers based in the Center and South somewhat underrepresented.

Tables D.3 and D.4 provide balance tests in the teachers' panel and baseline samples, respectively (the teachers' baseline sample consists of 6,212 respondents). These tables show that both samples are overall balanced, but for slightly higher proportions of teachers working full time and teaching civic education in control provinces.

Appendix Section D.2 studies attrition between teachers' baseline and endline samples, whereas Appendix Section D.5 studies attrition within each teachers' and students' baseline and endline survey. Overall, attrition appears unsystematic and balanced between treated and controls. Finally, Appendix Section D.3 investigates the overlap between survey respondents and course participants.

Appendix Section D.4 covers the students' baseline and endline samples. Tables D.10 and D.9 present the respective descriptive statistics. Table D.11 provides balance tests for baseline characteristics in the endline sample, on which we rely for the causal analysis. No systematic differences emerge across socio-demographic variables between treated and controls.

5 Empirical Approach

In this section, we describe our empirical approach. Recall that our field experiment combines an encouragement design with clustered randomization and staggered implementation: teachers were randomly offered access to the first (vs. second) edition of the course (encouragement and staggering), depending on their province (clustering).

Assignment at the province level was done to minimize potential contamination, as some teachers may teach in multiple schools, making assignment at the school or more granular levels prone to contamination. About 6% of panel teachers teach in more than one school, but only 0.11% (i.e., three teachers) teach in more than one province, and none teaches in both control and treatment provinces.

Given the Italian government's requirement for teachers to train by the summer of 2021 and the importance for our design to have as many teachers as possible in the recruitment funnel, we opted for a staggered implementation, whereby the course, in a second edition, also became available to teachers in the control group. Clearly, for the purpose of impact evaluation, we focus on the first edition of the course.

As for the encouragement aspect of our research design, we could only invite ("encourage") the teachers working in provinces randomly assigned to treatment to take our course (in its first edition), without forcing them to do so.

Since the treatment assignment is exogenous whereas treatment received is potentially endogenous, for teachers we provide estimates of intent-to-treat (ITT) effects of the randomized assignment on the outcomes of interest, as well as estimates of local average treatment effects (LATE) of the actual treatment on the same outcomes, using the randomized assignment as an instrument.

Our main specification for teachers is,

$$Y_{i,t} = \alpha_i + \beta * \tilde{T}_{i,t} + \delta * D_t + \epsilon_{i,t},$$

where $Y_{i,t}$ is any outcome of interest measured for individual i at time t (baseline or endline); α_i is an individual fixed effect; $\tilde{T}_{i,t}$ is either an indicator for the randomized assignment (ITT approach), or an instrumented version of the actual treatment based on the randomized assignment (LATE approach); D_t is a time dummy indicating the survey wave (baseline or endline); and $\epsilon_{i,t}$ is the error term. In estimation, standard errors are clustered at the province level.

In our LATE specification, we consider alternative definitions of actual treatment, yielding alternative IV estimates. "IV Certificate" refers to the effect of completing the course and obtaining the certificate from the course website; "IV Course" of registering for the course, joining the Moodle platform, and accessing any course material; "IV Class Use" of using the course material in class; and "IV Future Use" of planning to use the course material in class in the future.

Finally, we explore to what extent (if at all) any impact of our course on teachers – the course's main targets – did spillover onto students. We provide ITT estimates based on the endline survey of students. As a robustness check, we also estimate models with covariates (students age, gender, place of birth, school type, and place of residence).

6 Empirical Results

In this section, we describe two main sets of findings, respectively addressing the descriptive and causal questions we set out to answer. First, suppose you want to teach climate change systematically in secondary schools: what conditions do you start from? Second, can formal education about climate change and policy address knowledge gaps, and if so, does more knowledge also affect attitudes, beliefs, behaviors, and policy preferences?

Subsection 6.1 presents the descriptive results based on both teachers' and students' data. Subsection 6.2 presents the causal results for teachers. Section 7 investigates potential spillovers onto students.

6.1 Descriptive results

In this subsection, we analyze teachers' and students' baseline knowledge of climate change and climate policy, preferences and beliefs over the latter, and individual (or household) behaviors. For teachers, we also investigate pre-treatment teaching habits related to climate change and climate policy. Tables are presented in Appendix Section E.1 for teachers and Appendix Section E.2 for students.

To gauge initial conditions, in our baseline survey we included a battery of questions eliciting teachers' teaching activities and topics in the school year prior to the intervention (2019-2020) and their plans for the upcoming school year (2020-2021). Focusing on climate change, over 30% of panel teachers report devoting no time to climate change in their recent teaching. Those who report devoting at least some time to climate change appear to have been focusing on the hard science and most well-known features, such as the greenhouse gas effect and sea level rise. Appendix Table E.1 reports the sample

distribution of chosen topics. When asked about their future plans, around 89% of teachers report planning to allocate at least some hours to climate change.

Consistently with their teaching choices, at baseline teachers generally declare to be "little informed" (36%) or "quite informed" (59%) about climate change and only rarely "very informed" (5%), as reported in Appendix Table E.3. When it comes to economic policies, the majority of teachers perceive themselves as "little informed" or "not at all informed" (62% and 7%, respectively), despite judging staying informed about economic policies "quite important" or "very important" (49% and 50%, respectively). This pattern is qualitatively similar among students, although – relative to the teachers – students report on average somewhat higher perceived preparedness on climate change and lower on economic policies, while also generally recognizing the importance of staying informed about economic policies, as described in Appendix Table E.17. The discrepancy between perceived preparedness and interest may point to barriers to accessing knowledge about economic policies, which our intervention aims to overcome, as examined in the next subsection.

The limited preparedness teachers and, to a lesser extent, students in our sample perceive, is consistent with an objective measure of knowledge we collected through a battery of six climate literacy questions on global warming and its drivers, greenhouse gas emissions, average per capita emissions in Italy, and impact of climate change on developing economies. Conditional on answering all questions, on average teachers answered correctly two thirds of them (about 67% in Appendix Table E.2) and students less than half of them (about 45% in Appendix Table E.16), suggesting that students are less aware of their lack of knowledge than teachers are. Only 7% of teachers and 1% of students answered correctly all six questions, with close to 70% of teachers and 86% of students answering "I do not know" to at least one question, as shown in Figure

E.1 and Figure E.3, respectively.

Respondents limited knowledge does not seem attributable to climate skepticism, as teachers and, to a lesser extent, students broadly expressed high levels of confidence about the existence of climate change (mean subjective probability is 92% among teachers and 86% among students) and about its anthropogenic nature (mean subjective probability is 88% among teachers and about 85% among students), as reported in Appendix Table E.4 for teachers and Appendix Table E.18 for students. Still, we observe non-negligible fractions of teachers and students reporting that they do not believe in the existence or anthropogenic nature of climate change, consistent with a minority of the Italian adult population dismissing climate change as a non-urgent issue, as indicated by concurrent nationally representative surveys such as UNDP and University of Oxford (2021).

Furthermore, teachers expect less consensus about the existence of climate change, both among scientists and among fellow Italian citizens, as shown in Appendix Tables E.4. Hence, when comparing their responses with other surveys of the Italian population (e.g., UNDP and University of Oxford 2021), we tend to note some pluralistic ignorance, as also observed in an earlier study by Geiger and Swim (2016) and the concurrent studies by Sparkman et al. (2022), Andre et al. (2024), and Andre et al. (2026).

In general, we observe that teachers, and to some extent also students, are a representation of the overall population of Italy. For instance, teachers regularly fly, drive, and only a tiny fraction declares or plan to be vegetarian, as documented in Appendix Tables E.6-E.7 for teachers and E.20-E.21 for students. Additional figures on climate-relevant behaviors are presented in Tables E.8 (teachers) and E.22 (students).

We are especially interested in the drivers of climate-relevant behaviors, in particular the role of local social norms. Carattini, Levin, and Tavoni (2019) make the case that

despite the global properties of climate change mitigation, people's behavior tends to follow local social norms, including descriptive norms about other people's behavior. Hence, for each of the following behaviors: avoiding buying meat, avoiding car use, avoiding flying, signing climate change petitions, and buying hybrid or electric vehicles, we asked teachers and students how likely they would be to adopt that behavior if a large majority (80%) of their fellow Italian citizens were adopting it versus a limited minority (20%), and if the same percentages of the global population were. Figures shown in Appendix Tables E.9 (teachers) and E.23 (students) suggest that some of our respondents' willingness to exert effort depends on who else does so, locally and globally. Here too our findings are aligned with the concurrent studies by Sparkman et al. (2022), Andre et al. (2024), and Andre et al. (2026). Teachers and students also share similar opinions on the percentage of the Italian and global population that will adopt each of the above behaviors; see Appendix Tables E.10 and E.24, respectively.

In Appendix Tables E.11 (teachers) and E.25 (students), we further ask respondents' perceived effectiveness of a list of climate-friendly behaviors. Teachers' and students' beliefs are overall quite concordant, while also displaying some distinctive features. In particular, on average both teachers and students rate "Buying locally produced food" and "Paying attention to products' environmental impacts" as most effective (among their top 3) and "Participating in climate demonstrations" and "Signing climate change petitions" as least effective (among their bottom 3). However, while teachers' ratings favor also behaviors such as "Avoiding car use," students' ratings attribute higher effectiveness to behaviors such as "Buying renewable energy." Interestingly, students attribute lowest average effectiveness to "Avoiding eating meat for environmental reasons," which comes in fourth from last among teachers.

In Appendix Tables E.12 (teachers) and E.26 (students), we zoom in on climate

policies by measuring public support for a variety of policy instruments. At baseline our respondents express preferences that are qualitatively similar to those typically observed in representative samples, in Italy and elsewhere (see Carattini et al. 2018 for a review). In particular, both teachers and students prefer regulation and subsidies over carbon pricing and, unlike economists, consider regulation and subsidies more effective at tackling climate change, as shown in Appendix Tables E.13 and E.27. Furthermore, teachers in our sample seem to recognize that regulations can have regressive effects; however, again in line with the literature, they do not seem to recognize that a carbon tax and dividend tends to be progressive.

Borrowing from Carattini, Kallbekken, and Orlov (2019), we then ask respondents their opinion on how revenues from the global taxation of carbon emissions should be used. Note that a global carbon price could be obtained either via a global carbon tax, implying centralization of revenues, or via harmonized carbon taxes, for instance, as advocated by the International Monetary Fund (Parry et al. 2021) in the context of a minimum global carbon price (which in their case would however not be uniform, in the spirit of Bataille et al. 2018). With a global carbon tax, countries would need to agree on the use of revenues. With harmonized carbon taxes, each country would maintain sovereignty over the use of revenues and would only need to agree on the level of pricing. Hence, teachers and older students were presented three types of revenue use that imply sovereignty (reducing labor taxes in Italy, a national climate fund in Italy, and domestic carbon dividends) and three types of revenue use that imply global pooling (a global climate fund for all countries, a global climate fund for developing economies, international carbon dividends).

Again in line with the existing literature, most support goes to the national and international climate funds, i.e., environmental earmarking, as shown in Appendix Ta-

bles E.14 (teachers) and E.28 (older students). As the literature shows, absent specific information provision, people tend to underestimate the effectiveness of carbon pricing and ask for revenues to be earmarked for environmental purposes, which they see as the main way for carbon pricing to reduce emissions, rather than through the direct effect on relative prices (see Carattini et al. 2018 for a review). Among climate funds, the most popular option among teachers is the international climate funds that target all countries, consistent with Carattini, Kallbekken, and Orlov (2019). Domestic and international carbon dividends receive very limited support, despite their progressive properties. Domestic carbon dividends tend to be progressive. International carbon dividends can reduce within- and between-country inequalities as well as poverty (Carattini, Kallbekken, and Orlov 2019, Budolfson et al. 2021). However, people, likely including the teachers in our sample, are generally unaware of these properties.

Finally, we measure the emotions teachers and students associate with climate change and its impacts, on a scale from 0 to 10, where 0 means "emotion not perceived" and 10 means "emotion perceived intensely." Appendix Tables E.15 and E.29 summarize teachers' and students' responses, respectively. Feelings of fear, defenselessness, sadness, worry, and curiosity score higher than anger, hope, depression, guilt, disgust, skepticism, indignation, powerlessness, and uncertainty, among both teachers and students. However, teachers perceive on average stronger feelings of fear, defenselessness, sadness, depression, skepticism, indignation, worry, powerlessness, uncertainty, and curiosity than students do.

6.2 Causal results

In this subsection, we analyze the direct impact of our intervention on teachers, before turning to its potential spillovers to students in Section 7. As anticipated in Section

5, we provide both ITT estimates and multiple LATE-IV estimates, based on alternative definitions of actual treatment. Among the latter, we describe our findings mostly based on IV Certificate, which defines as actually treated those teachers in treatment provinces who completed the course and obtained the certificate (60% of eligible teachers). Estimates are very similar when we use the other definitions of actual treatment according to IV Course, IV Class Use, and IV Future Use, all defined in Section 5. Figures 1-12 present the estimated effects graphically, while comparing them across the different approaches for each outcome. All estimates are also reported in Appendix Tables F.1-F.12.

We start by discussing the effect of our course on teachers' climate literacy. In Figure 1, we observe that teachers' actual knowledge, objectively measured by our battery of climate literacy questions, increases significantly by between 4% (ITT) and 7% (IV Certificate) relative to the baseline level of correct responses of about 68%. Strikingly, this improvement in climate literacy is observed in combination with a reduction in the percentage of teachers answering "I do not know" by between 16% (ITT) and 26% (IV Certificate) relative to its baseline level of 16%.

While increasing actual knowledge, our course also significantly improves teachers' perception of preparedness on the topic of climate change by between 4.7% (ITT) and 7.6% (IV Certificate) relative to the baseline level (2.68), and on economic policies by between 3.5% (ITT) and 5.6% (IV Certificate) relative to the baseline (2.26). The course, on the other hand, does not change teachers' perceived importance to stay informed on economic issues, which nevertheless was already fairly high at baseline. The underlying estimates are shown in Figure 2.

In Figure 3, we further observe a significant increase in teachers' subjective probability that climate change is anthropogenic by between 2% (ITT) and 3.4% (IV Certificate)

from a baseline of 87.8%. These effects can also be interpreted as implying a relative reduction in skepticism by between 15% and 24.4%. The course also increases the subjective probability of the existence of climate change, whose mean baseline level was already high and in fact higher than that of anthropogenic climate change (92.1 vs. 87.8), but these latter effects are smaller and statistically not significant.

We now turn to the effects of the course, which provided teachers with more knowledge about climate change, on teachers' habits and behaviors, including current behaviors, planned behaviors, and perceptions of their effectiveness in combating climate change. We start with behaviors related to food consumption and transportation, whose estimates are shown in Figures 5 through 7. No significant effects are observed on eating habits, even as, following the course, teachers revise substantially their beliefs about the perceived effectiveness of avoiding meat in fighting climate change, by between 3.3% (ITT) and 5.5% (IV Certificate), as shown in Figure 8. Recall that our course also included an interactive activity exposing teachers to their own carbon footprint, as described in Section C. The divergence that we document between changes in perceived effectiveness and intentions may point to strong preferences and persistent habits surrounding food, which may prevent significant behavioral responses.

In contrast, we find strong effects on driving habits (both recent and expected) and on flying intentions, as teachers revise their beliefs about the harmfulness of these behaviors. In particular, our course leads to significant reductions in recent and expected long-distance travels (>10,000 km) of 22.8% (ITT) to 37% (IV Certificate) and 24.3% (ITT) to 40.6% (IV Certificate), respectively, relative to their baselines. We also find significant negative effects on teachers' future plans to take continental and international flights, in the order of 17.8% (ITT) to 30% (IV Certificate) and 36.5% (ITT) to 60.9% (IV Certificate), respectively. These effects are accompanied by a sizeable and

statistically significant increase in teachers' perceived effectiveness of avoiding flying of 4% (ITT) to 6.6% (IV Certificate), and a still sizable but smaller (1% to 2%) and not statistically significant increase in their perceived effectiveness of avoiding car use (already relatively high at baseline).

Concerning the remaining behaviors, we find limited in magnitude and usually not statistically significant impacts on adoption of renewables and forms of activism, with the only marginally significant effect observed for buying from companies fighting climate change, as shown in Figure 7. Note that the course did not significantly affect teachers' beliefs about the effectiveness of these behaviors in fighting climate change, except for signing climate-related petitions.

Moving to policy support, our course significantly increased teachers' preferences for several policy instruments. In Figure 9, we observe that the largest effect is on cap and trade, with an increased support by 5.2% (ITT) and 8.5% (IV Certificate) relative to its baseline level of 61.3 on a 0-100 scale (the second lowest after that of nuclear power plants). Recall that cap and trade was also the focus of one of the interactive cards, as described in Section C.

The effect on an international treaty – requiring Italy to reduce its greenhouse gas emissions by 90% relative to its 1990 level by 2050 – follows, with an estimated increase in support by 3% (ITT) to 5% (IV Certificate). We also observe positive and relatively large point estimates for the effect of the course on support of other policies, including the creation of an energy efficiency fund (statistically significant) and the adoption of a carbon tax and dividend (not statistically significant). As support for more stringent climate policy increases, we observe that the course further reduces teachers' already low support for the construction of nuclear power plants.

In sum, while our course increases support for climate policy in general, the effect

is most striking for those policies, in particular market-based instruments such as cap and trade, which were relatively less popular at baseline (and likely less known and understood). Consistently, here is where we find substantial belief revision in terms of policy effectiveness, as shown in Figure 10. Our course significantly increases teachers' beliefs about the effectiveness of carbon taxes in reducing greenhouse gas emissions by about 5% (ITT) to 7% (IV Certificate) relative to baseline (2.18 on a scale from 1 = low to 3 = high). There seems also to be an increase in the order of 5% (ITT and IV Certificate) in how teachers perceive carbon taxes in terms of their effectiveness to minimize the regressive effects on disadvantaged families relative to the baseline (1.74 on a 1-3 scale), although the corresponding coefficient is not statistically significant. Even though our course does not significantly affect teachers' opinion about the most appropriate uses of revenues from carbon taxation, it does significantly reduce by 22% (ITT) to 36% (IV Certificate) the proportion of "Do not know" responses relative to a baseline of 0.2, as shown in Figure 11. Hence, teachers appear to be more knowledgeable about and engaged with carbon taxation.

Finally, we note how our course also affects the emotions teachers associate with climate change. Our intervention significantly raises hope by 4.3% (ITT) to 6.8% (IV Certificate), while reducing feelings of defenselessness by 3.4-5.4%, perceptions of skepticism by 5.7-9%, and uncertainty by 3.2-5.2%, relative to baseline levels. All the while, emotions such as anger and disgust remain high.

Comparing IV estimates, the effect of actual classroom use is generally larger (up to twice as large) than the effect of receiving the course certificate or intended classroom use. These results point to potentially much stronger effects of the course – as measured at the time of the endline survey – when teachers actively engage with it to prepare their own delivery, rather than being only passively exposed to it.

When taking stock of our findings, it is also important to evaluate them with respect to the persistence of our intervention. Figure 25 plots the distribution of time lags between the completion of the course (treatment) and the endline survey (outcome measurement) among all teachers who are in both the course and the panel, showing the average lag is about four months.

7 Spillovers to Students

We now investigate potential spillovers to students of the impact of our course for teachers. ITT estimates are shown graphically in Figures 13-24 and in table format in Appendix Tables F.13-F.24.

Figure 13 shows that students in treatment provinces have significantly higher climate literacy than their control peers, corresponding to an average increase in climate literacy of close to 6 percentage points. We find this effect even as the course lowers the portion of "Do not know" responses by about 4 percentage points. Our course also significantly increases students' perceived preparedness about climate change by 0.09 points on a 4-point scale, while not affecting perceived preparedness about economic policies in general, as shown in Figure 14.

As in the case of teachers, our intervention significantly reduces climate skepticism also among students, in this case by increasing their subjective probability of both the existence of climate change and its anthropogenic nature by about 5 percentage points on average, as shown in Figure 15.

We also find significant increases in students' perceived effectiveness of buying renewable energy, solar panels, hybrid/electric vehicles, and goods and services from companies fighting climate, as shown in Figure 20.

Moving to public support for climate policies, again similarly to the case of teachers, we find significant increases in students' support for various policy instruments. In particular, we observe increases in support for the creation of an energy efficiency fund by about 4 percentage points, for regulations of greenhouse gas emissions by 4.6 percentage points, and for signing an international treaty for reducing Italy's greenhouse gas emissions by 90% by 2050 compared to 1990 levels by 4.3 percentage points, as shown in Figure 21. The estimated effect on students' support for carbon taxation and for cap and trade is also positive. Unlike for teachers, in the case of students both coefficients are however not statistically significant.

We additionally find significant increases in students' beliefs that a ban on the circulation of fossil fuel vehicles is effective at reducing greenhouse gas emissions (by 0.13 points on a 1-3 scale), and that carbon taxes are effective at reducing pollution (by 0.10 points) and at minimizing the regressive effects on disadvantaged families (by 0.12 points), as shown in Figure 22. The effect on carbon taxes' ability to reduce local air pollution is statistically significant, that on carbon taxes' ability to reduce greenhouse gas emissions is similar but less precisely estimated.

In Figure 23, we further observe some change in preferences regarding the use of revenues from a carbon tax. In particular, we observe significant increases in the percentages of students believing that the most appropriate uses of the revenues from carbon emission taxation in Italy are: i) the creation of a national climate fund aimed at reducing greenhouse gas emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy; or ii) combining these revenues with those collected by all other governments and using them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources in all countries. Support for both allocations increases by about 6 percentage points.

Finally, in Figure 24, we observe significant effects on students' emotions, with lowered scores of perceived depression (-0.35 points on a 0-10 scale), disgust (-0.41 points), skepticism (-0.38 points), and powerlessness (-0.30 points).

8 Conclusion

Knowledge gaps and biased beliefs regarding both climate change, the problem, and climate policy, the solution, can represent major obstacles to the implementation of policies and behavioral changes needed to tackle greenhouse gas emissions. In this study, we document knowledge gaps and biased beliefs among Italian secondary school teachers and students, and show that climate education can contribute to addressing them at scale.

Against the backdrop of a recent curricular reform of civic education in Italy and the associated requirement for teachers to receive new training, we designed and implemented a nationwide large-scale field experiment, coordinated with the timeline and main features of the reform, whereby we trained thousands of secondary school teachers on climate change and climate policy in a staggered fashion using a proprietary course that was recognized by the Italian government toward the abovementioned requirement.

Our baseline evidence indicates the need for climate education in secondary schools to be accompanied by training of teachers, who otherwise tend to have limited knowledge on the topic, especially regarding the economics and policy of climate change, despite significant interest.

Because it resembles a government effort in both form and scale to train teachers and, through them, students about climate change and climate policy, our randomized intervention directly informs policymakers about the potential of climate education in

schools. Climate education addresses important knowledge gaps among teachers, which also benefit students, and through improved knowledge further leads to changes in beliefs, attitudes, behaviors, preferences, and emotions. By moving beyond the controlled setting of lab and survey experiments and examining the potential of climate education at scale, we offer insights that may inspire efforts to address biased beliefs about other issues at scale, also through civic education, and contribute to ongoing discussions about the role of education in fostering an informed citizenry in contemporary democracies.

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Main Figures on Causal Analysis

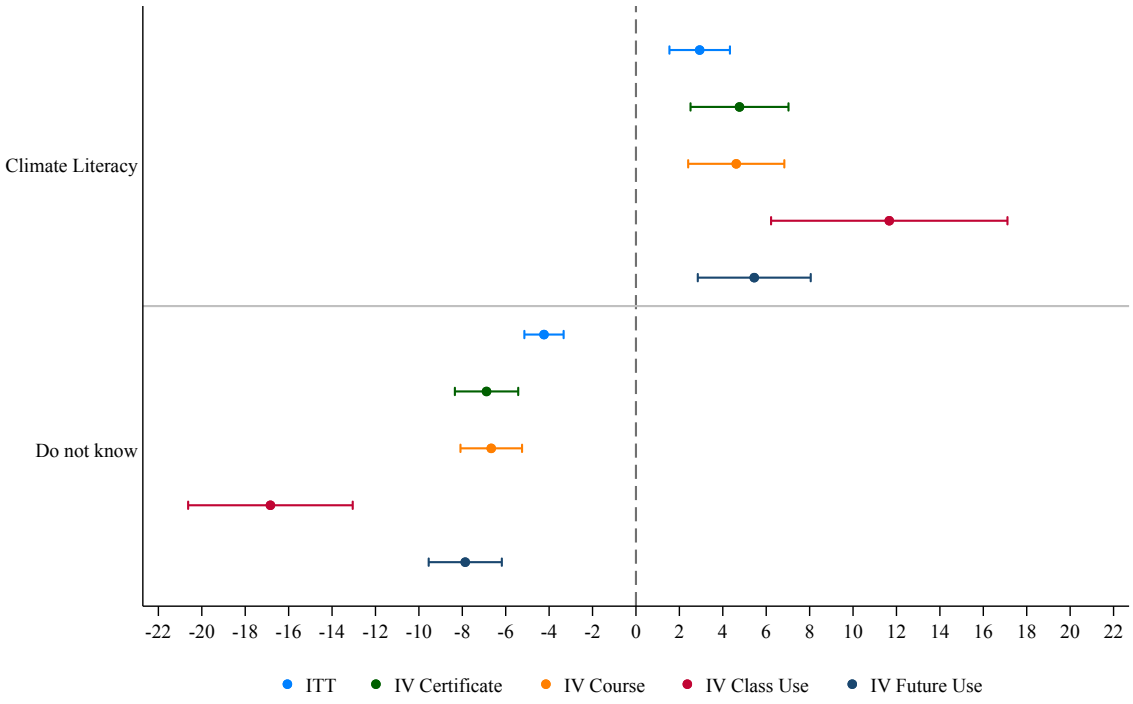

Figure 1: Teachers' treatment effects on climate literacy

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.2. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

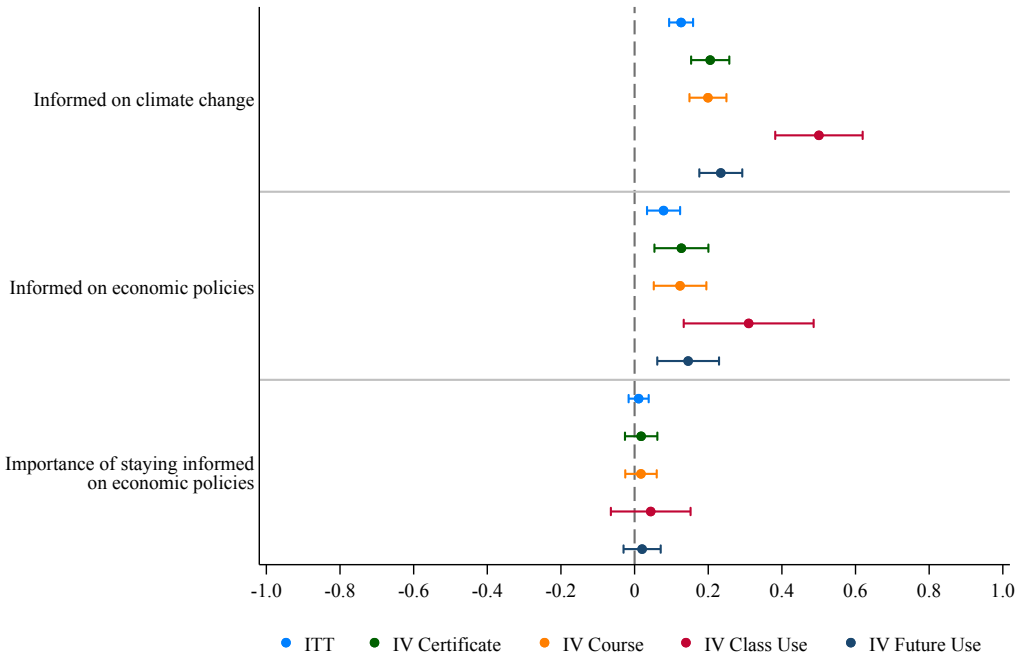

Figure 2: Teachers' treatment effects on perceived preparedness

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.3. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

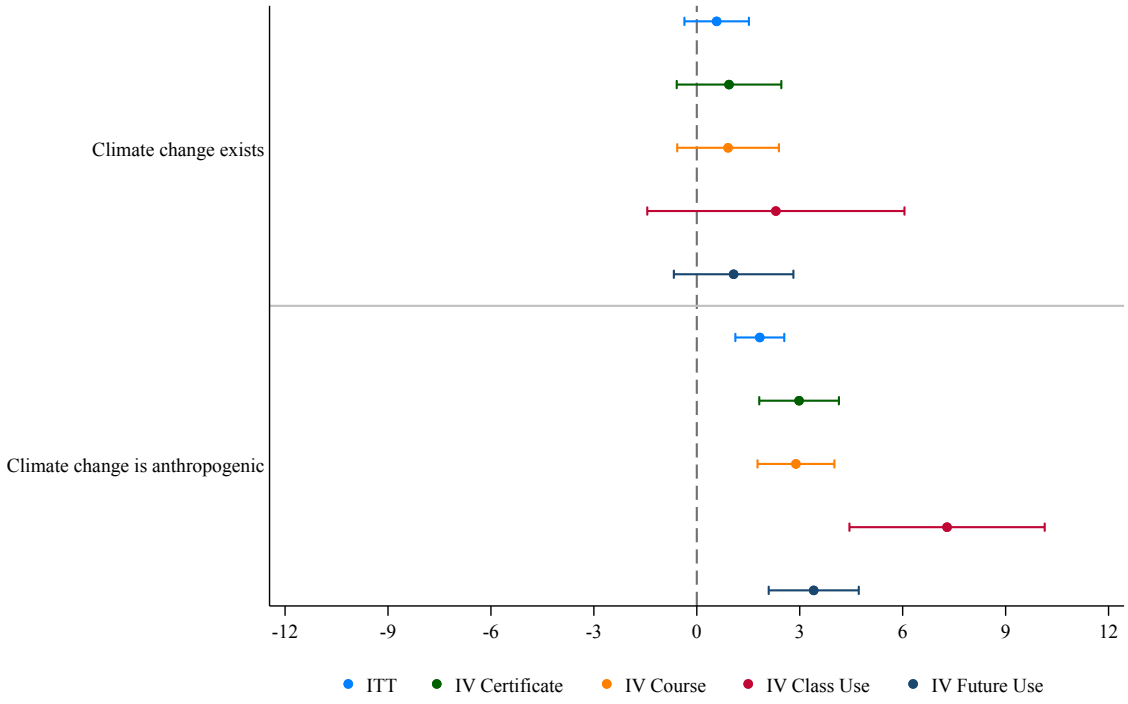

Figure 3: Teachers' treatment effects on climate change beliefs

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.4. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

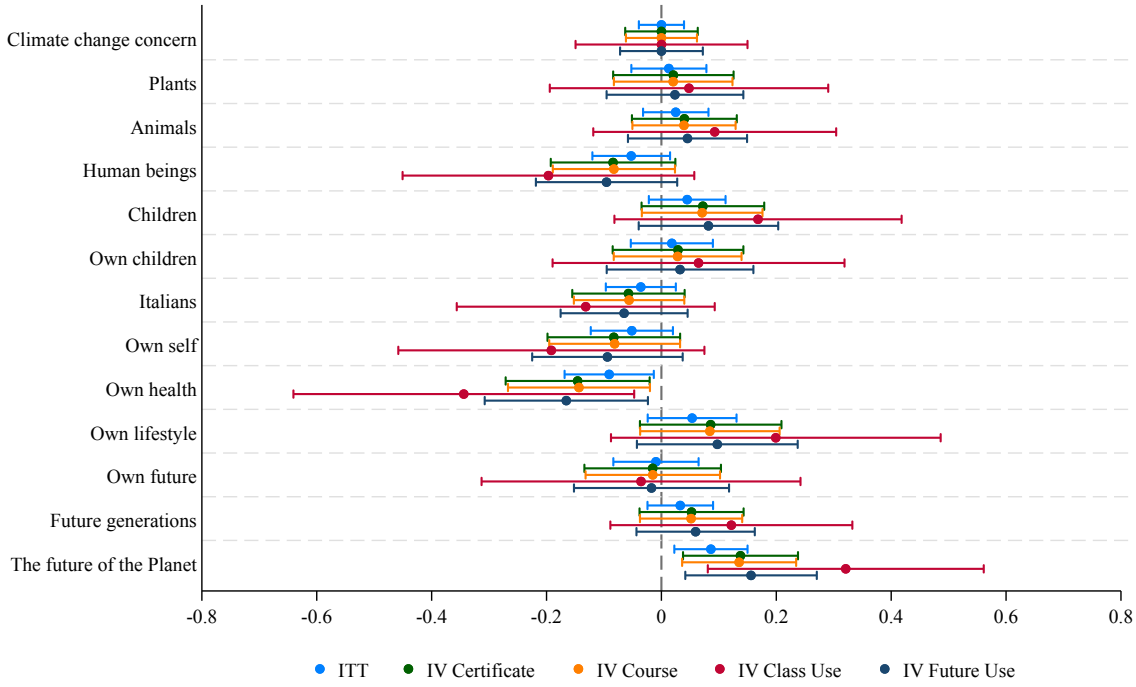

Figure 4: Teachers' treatment effects on concerns about climate change impacts

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.5. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

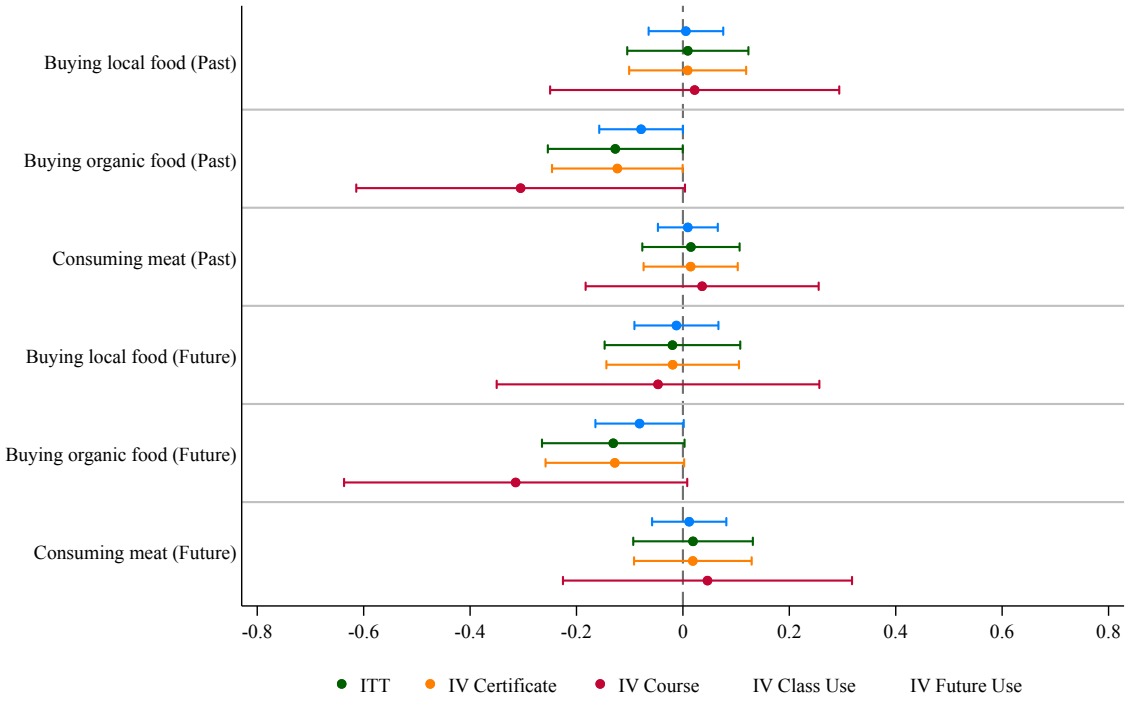

Figure 5: Teachers' treatment effects on eating habits

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.6. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

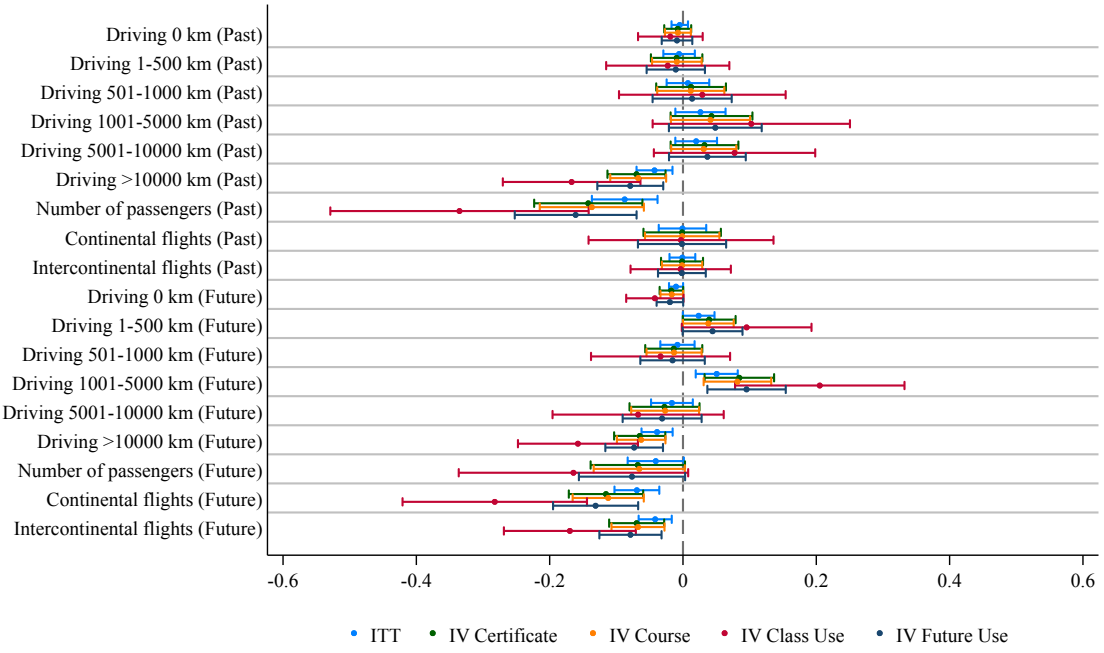

Figure 6: Teachers' treatment effects on traveling habits

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.7. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

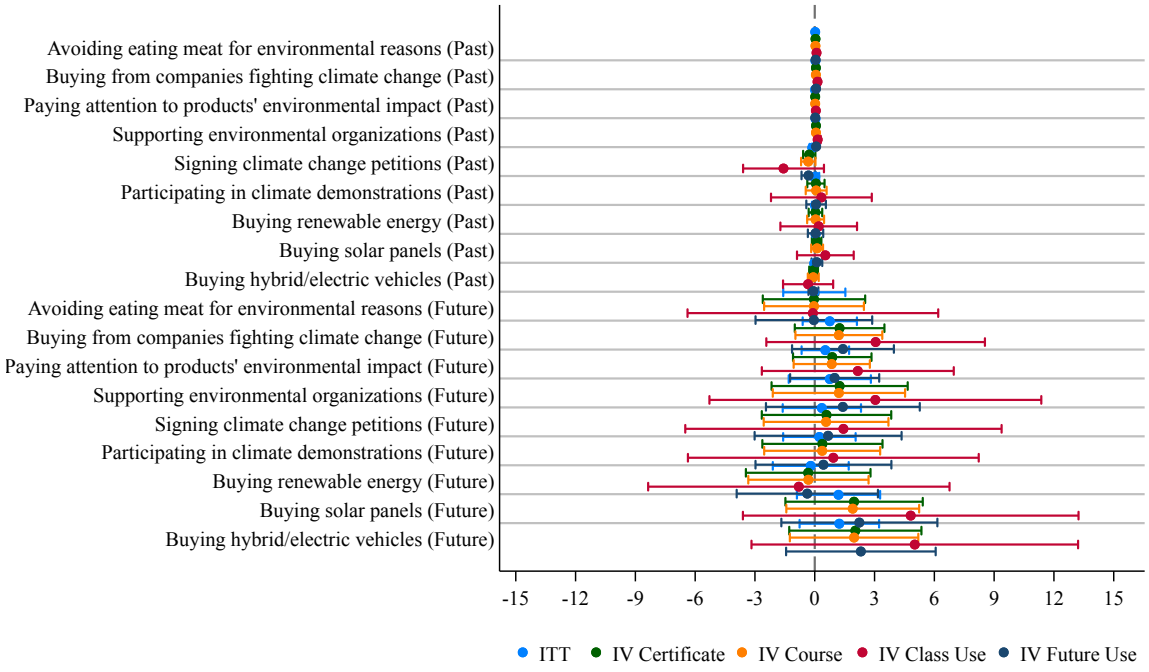

Figure 7: Teachers' treatment effects on climate-friendly behaviors

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.8. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

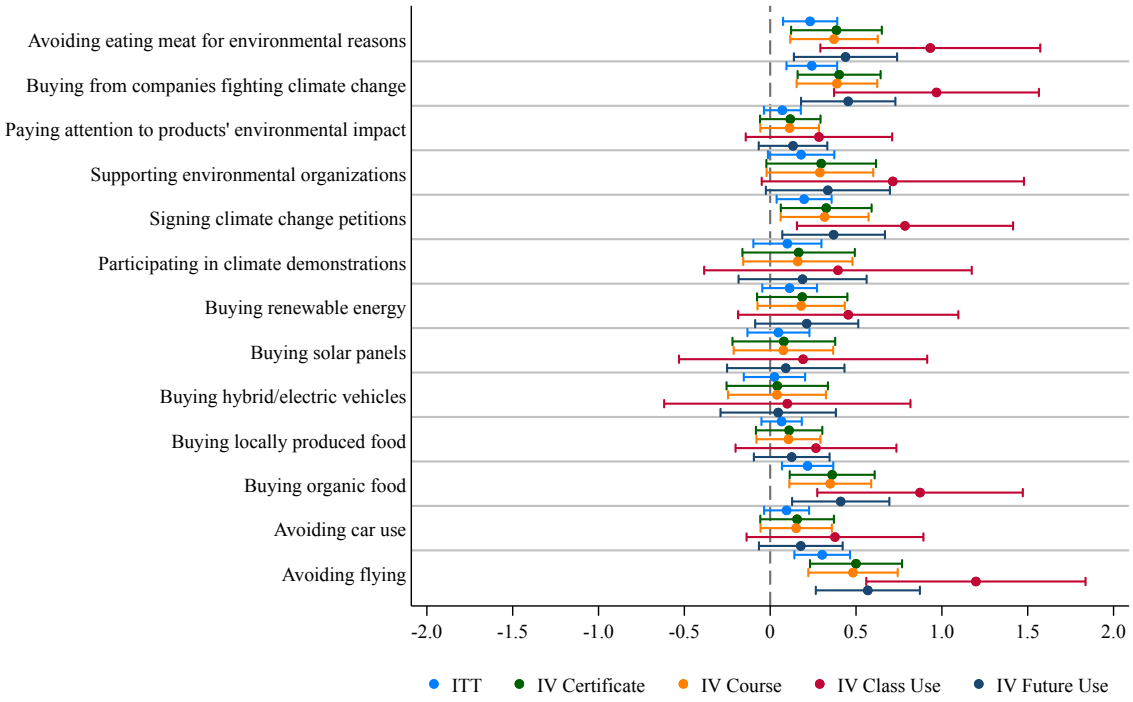

Figure 8: Teachers' treatment effects on behaviors' perceived effectiveness in fighting climate change

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.11. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

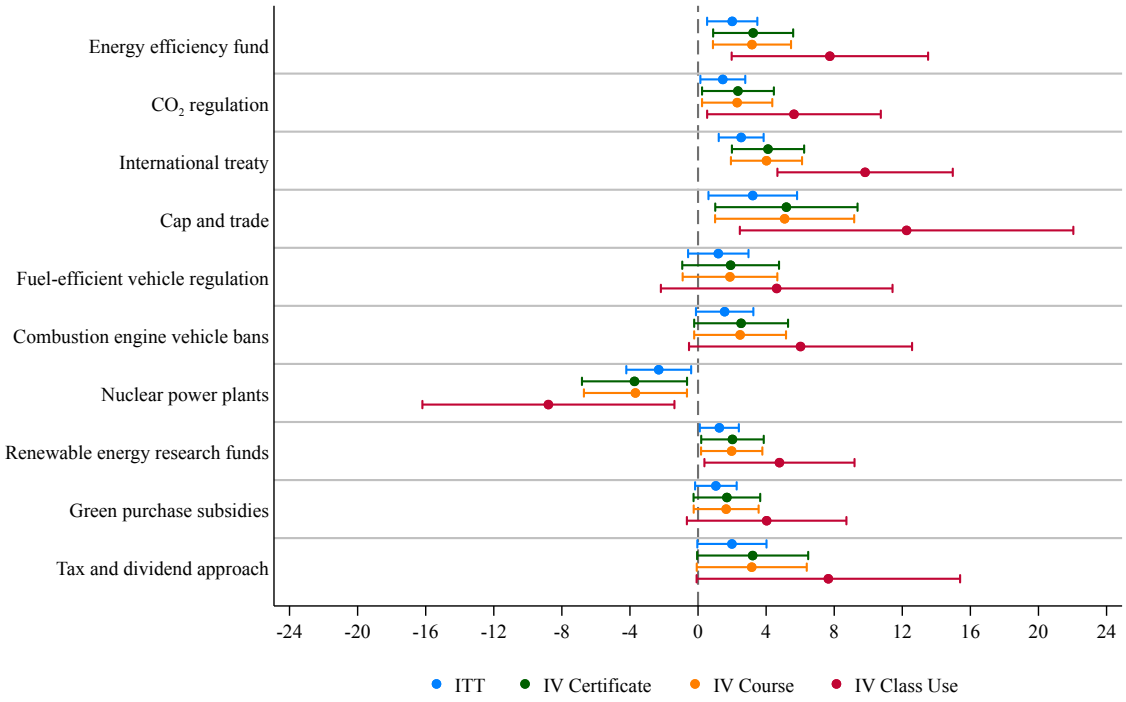

Figure 9: Teachers' treatment effects on support for climate policies

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.12. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

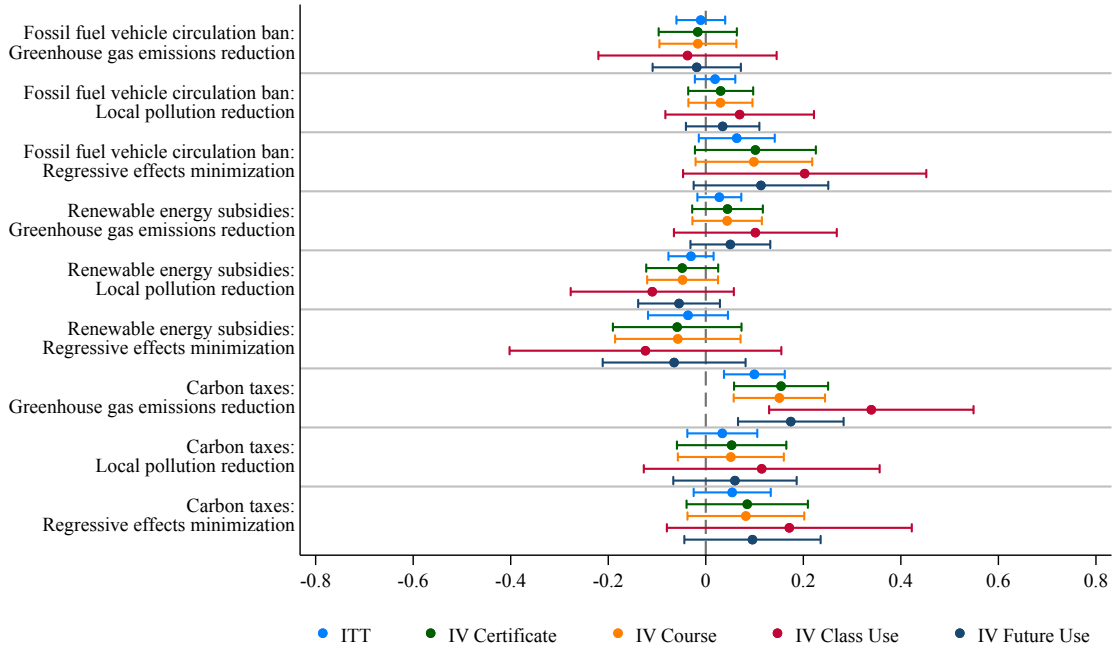

Figure 10: Teachers' treatment effects on policies' effectiveness and distributional effects

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The sample includes teachers that answered both the baseline and the follow-up survey. The variables are defined in Table E.13. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

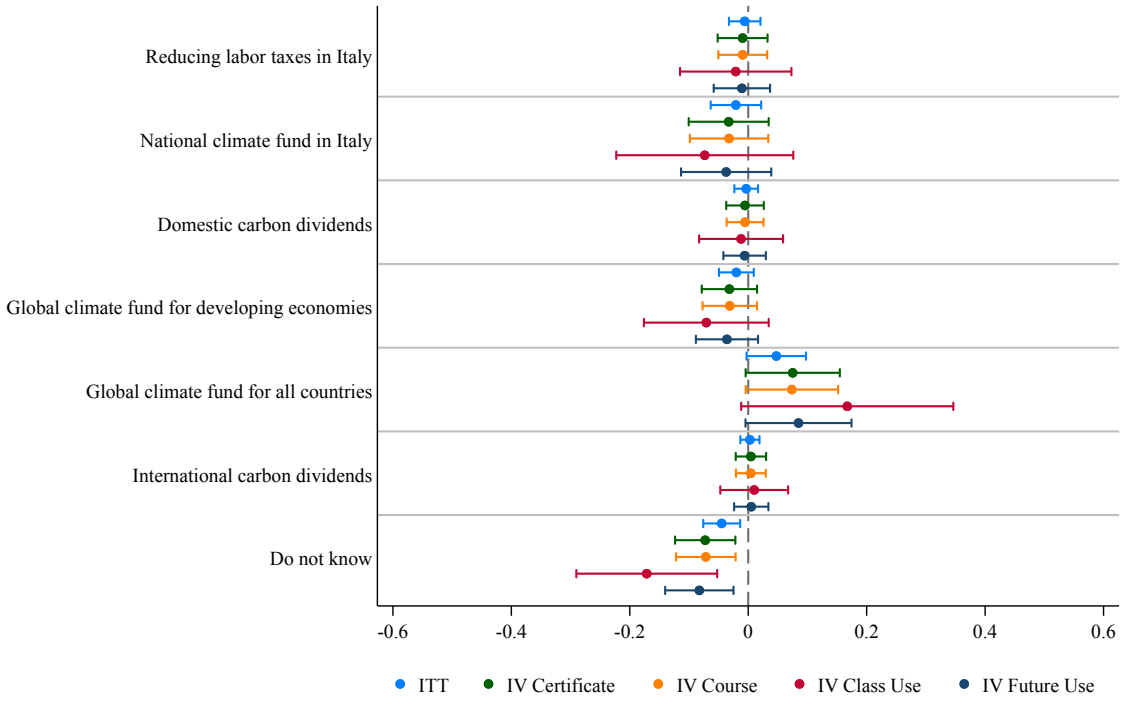

Figure 11: Teachers' treatment effects on the use of revenues from carbon taxation

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.14. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

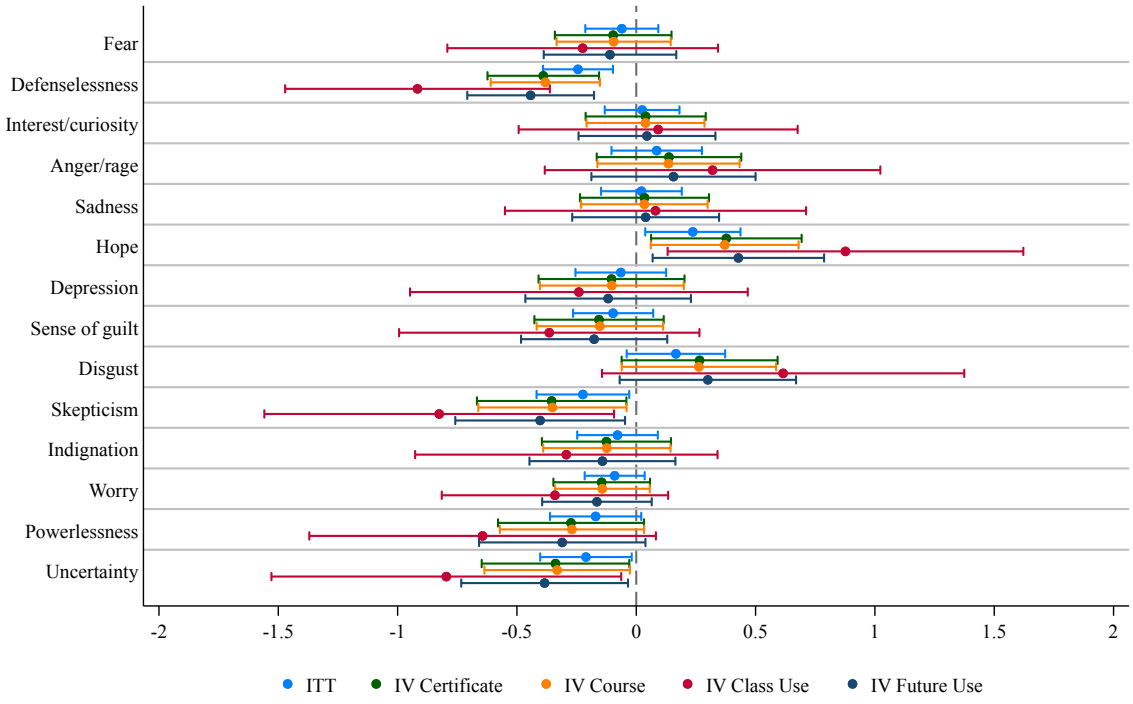

Figure 12: Teachers' treatment effects on emotions

Notes: The figure shows intent-to-treat estimates (ITT) and instrumental variable estimates (IV). "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables are defined in Table E.15. The sample includes teachers that answered both the baseline and the follow-up survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

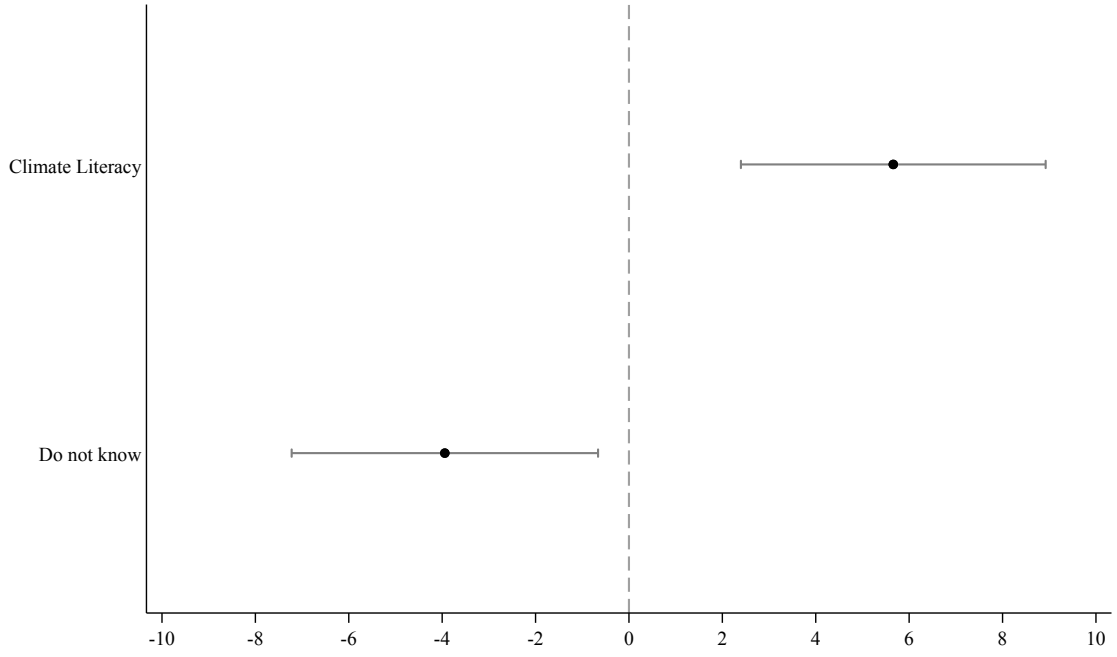

Figure 13: Students' treatment effects on climate literacy

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.16. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

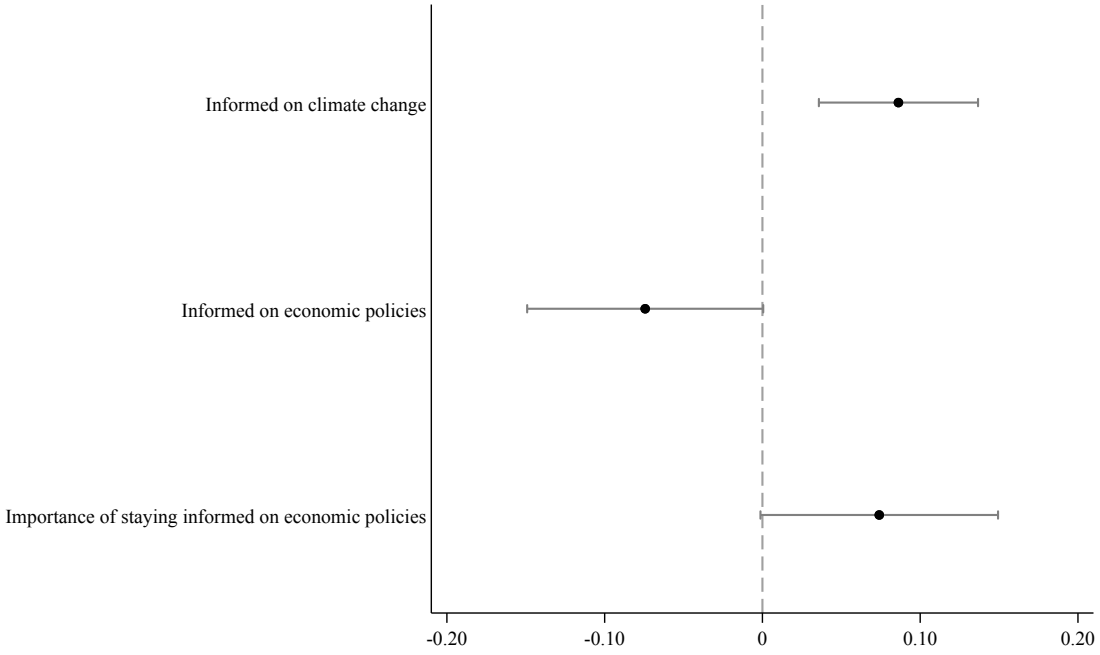

Figure 14: Students' treatment effects on perceived preparedness

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.17. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

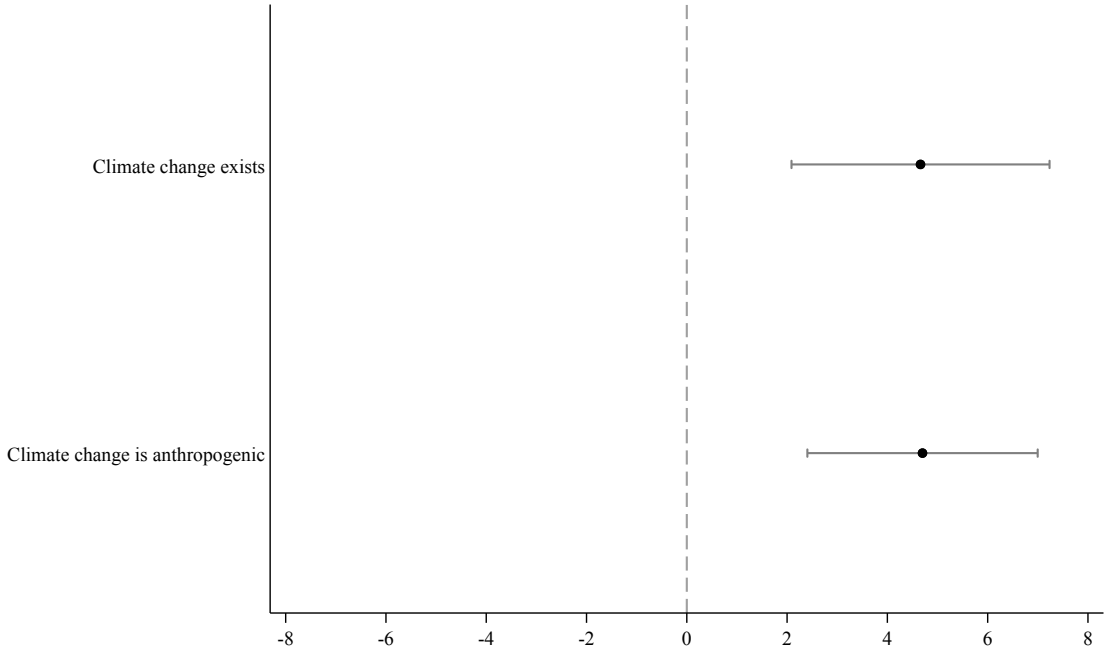

Figure 15: Students' treatment effects on climate change beliefs

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.18. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

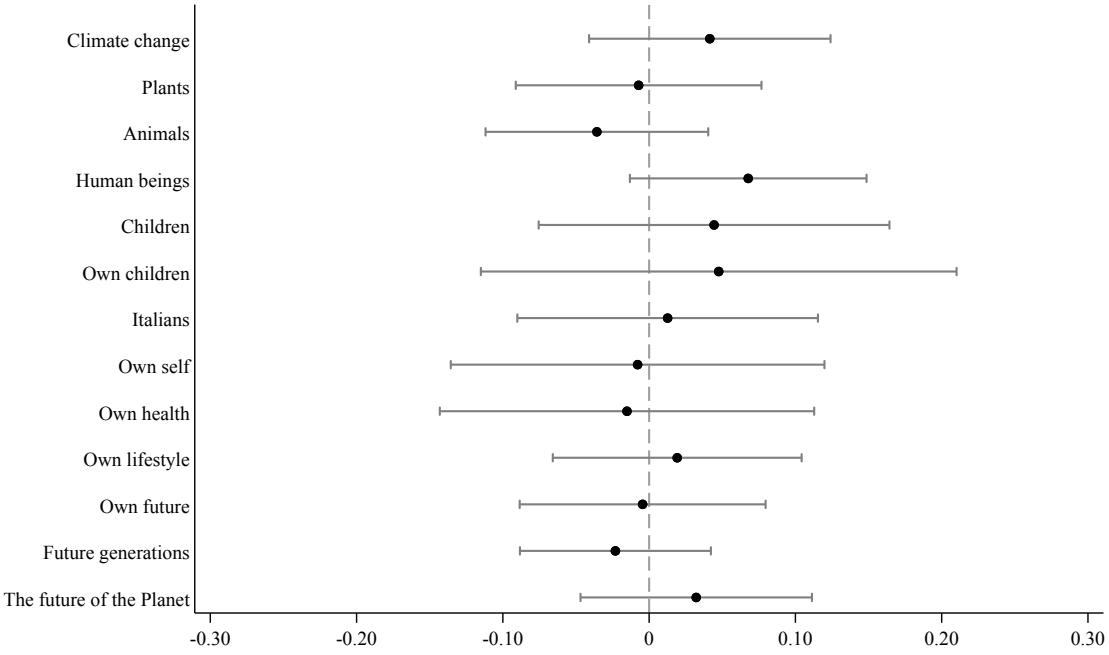

Figure 16: Students' treatment effects on concerns about climate change impacts

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.19. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

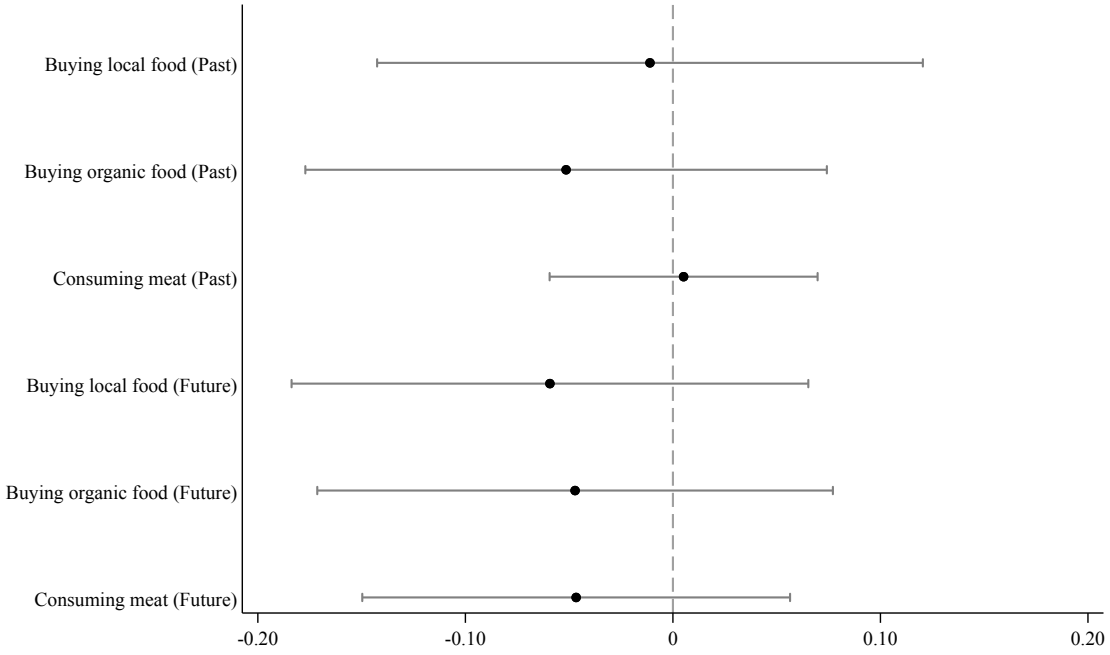

Figure 17: Students' treatment effects on eating habits

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.20. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

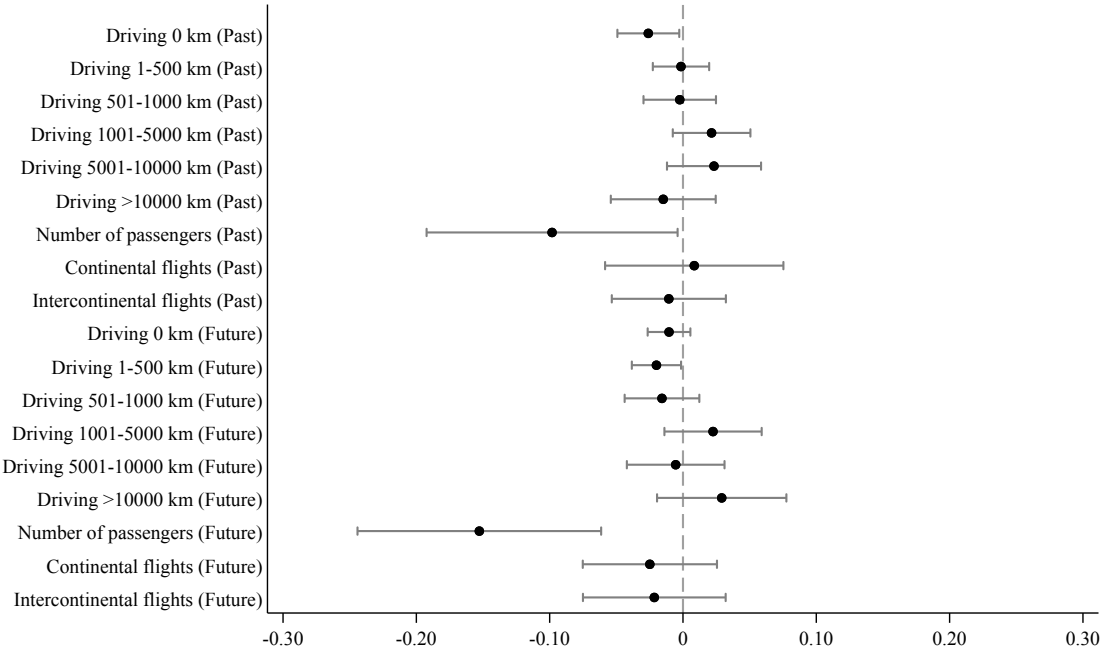

Figure 18: Students' treatment effects on traveling habits

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.21. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

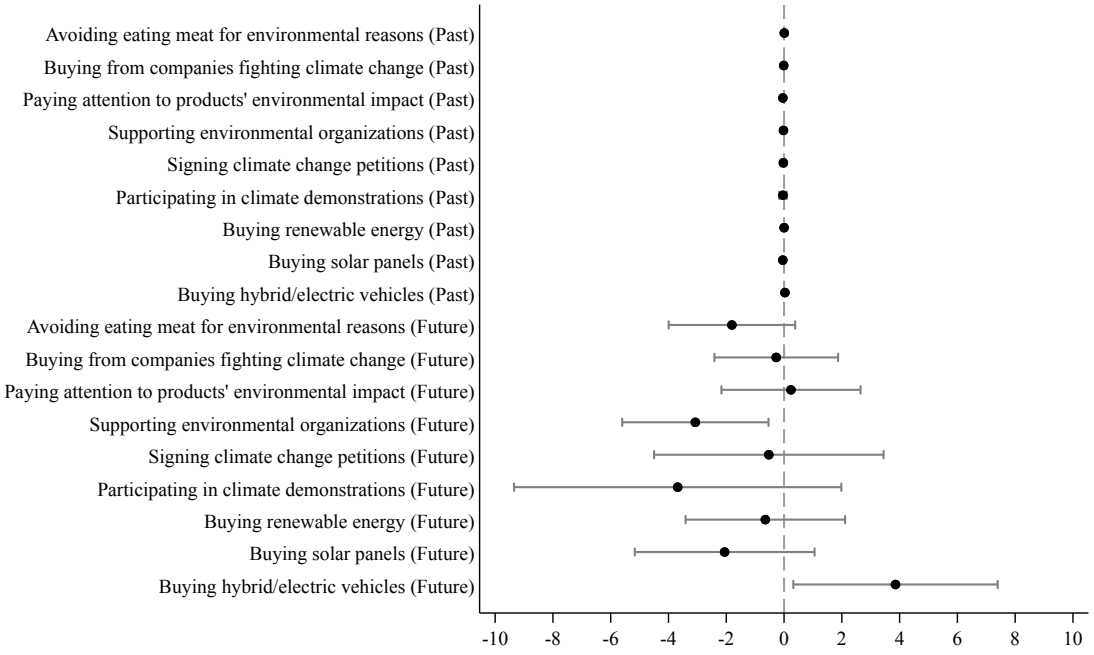

Figure 19: Students' treatment effects on climate-friendly behaviors

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.22. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

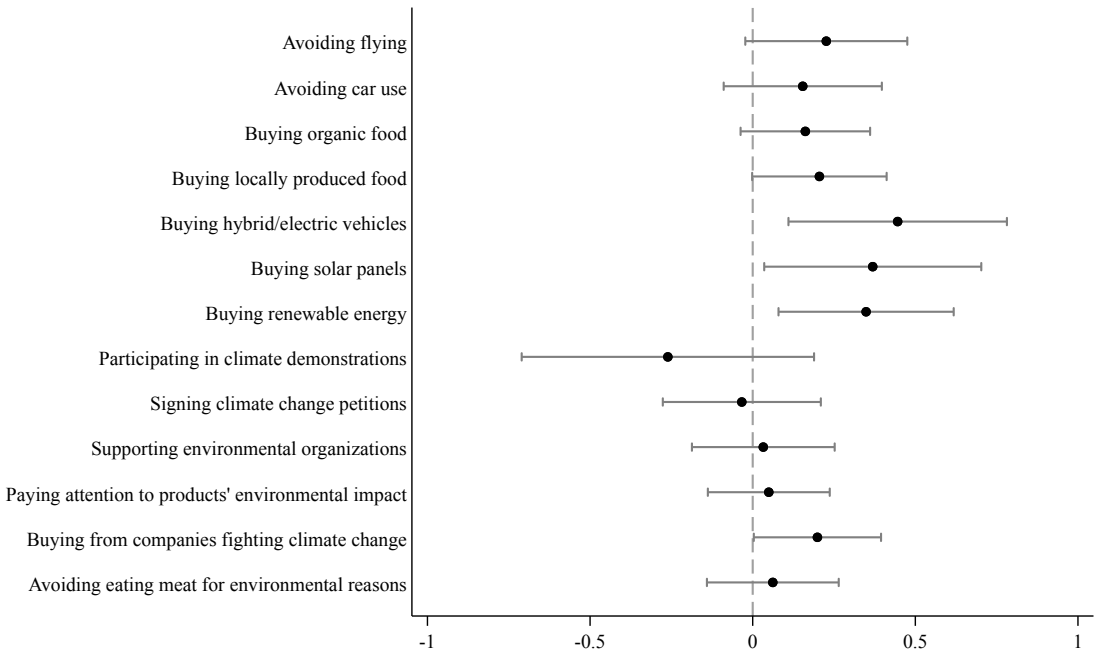

Figure 20: Students' treatment effects on behaviors' perceived effectiveness in fighting climate change

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.25. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

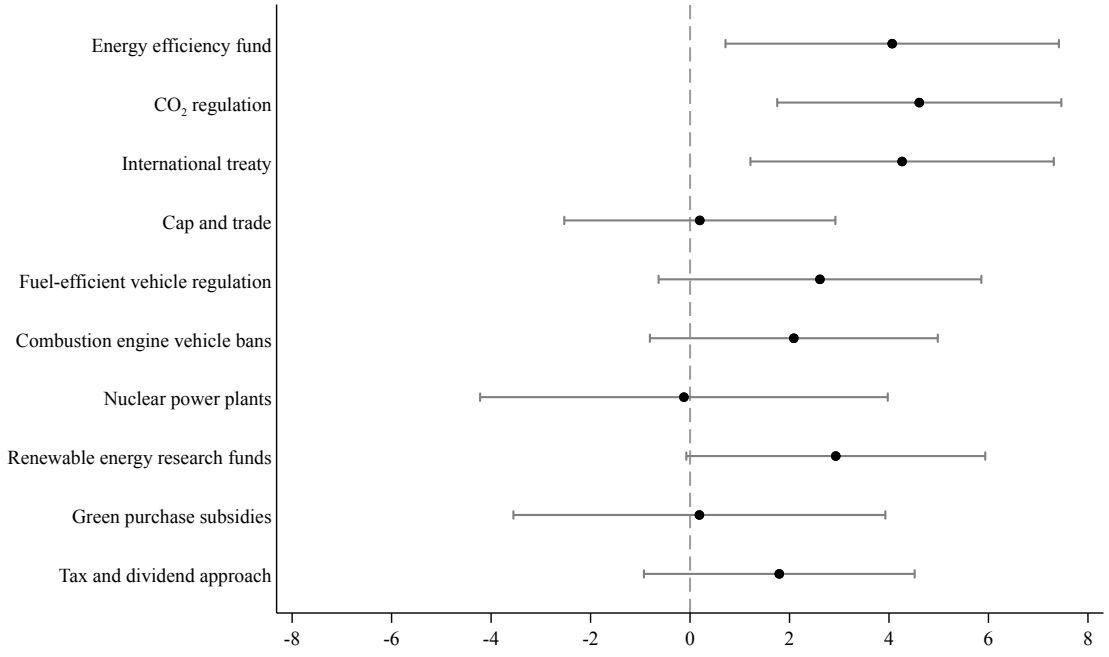

Figure 21: Students' treatment effects on support for climate policies

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.26. The sample includes high school students in their third, fourth, and fifth years that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

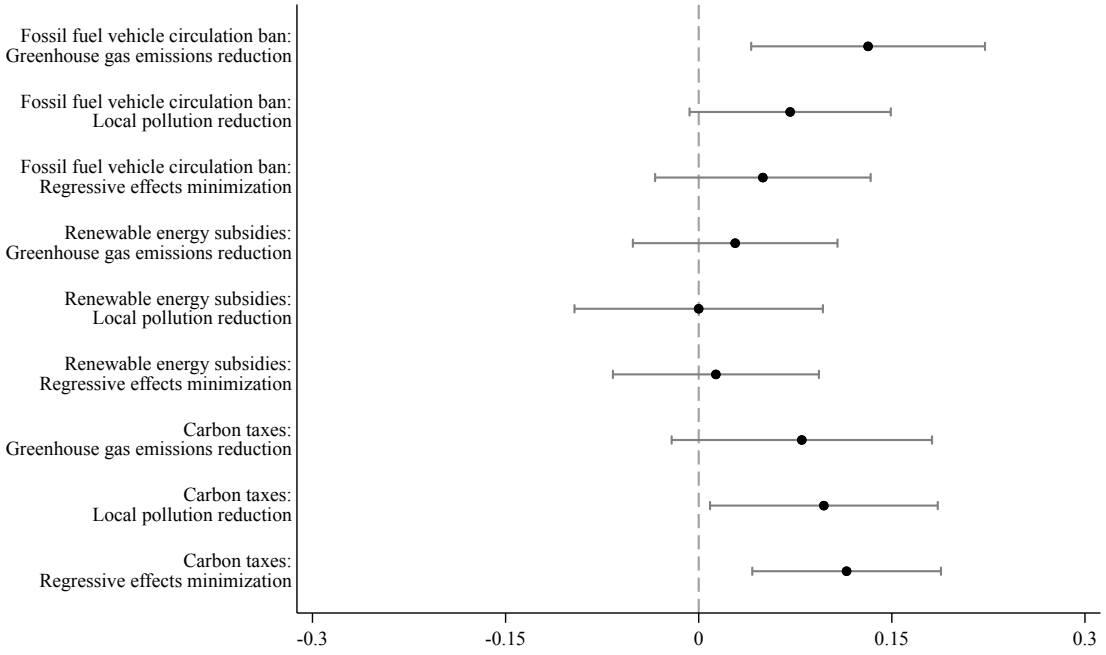

Figure 22: Students' treatment effects on policies' effectiveness and distributional effects

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.27. The sample includes high school students in their third, fourth, and fifth years that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

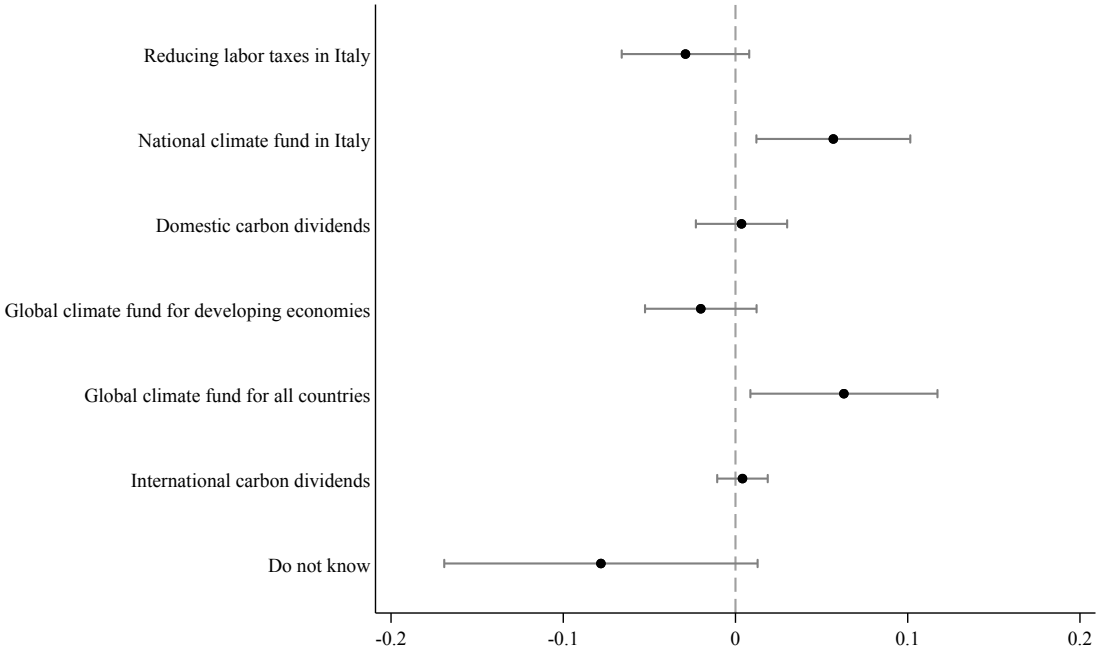

Figure 23: Students' treatment effects on the use of revenues from carbon taxation

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.28. The sample includes high school students in their third, fourth, and fifth years that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

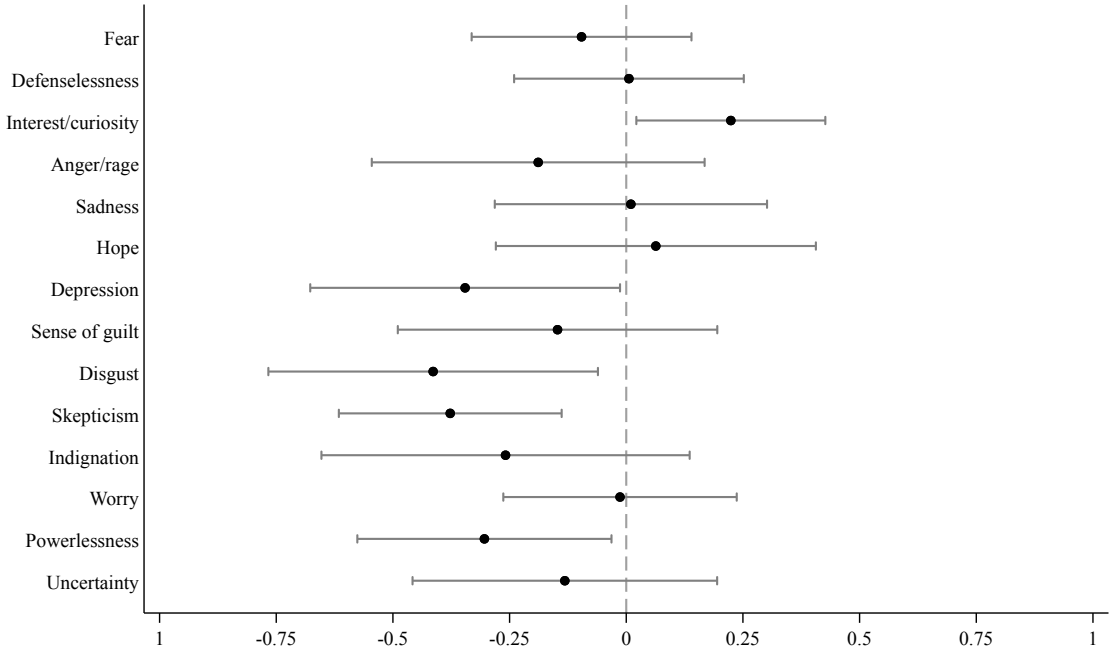

Figure 24: Students' treatment effects on emotions

Notes: The figure shows intent-to-treat estimates (ITT). The variables are defined in Table E.29. The sample includes students that answered the endline survey. Bars denote 90% confidence intervals. Standard errors are clustered at the province level.

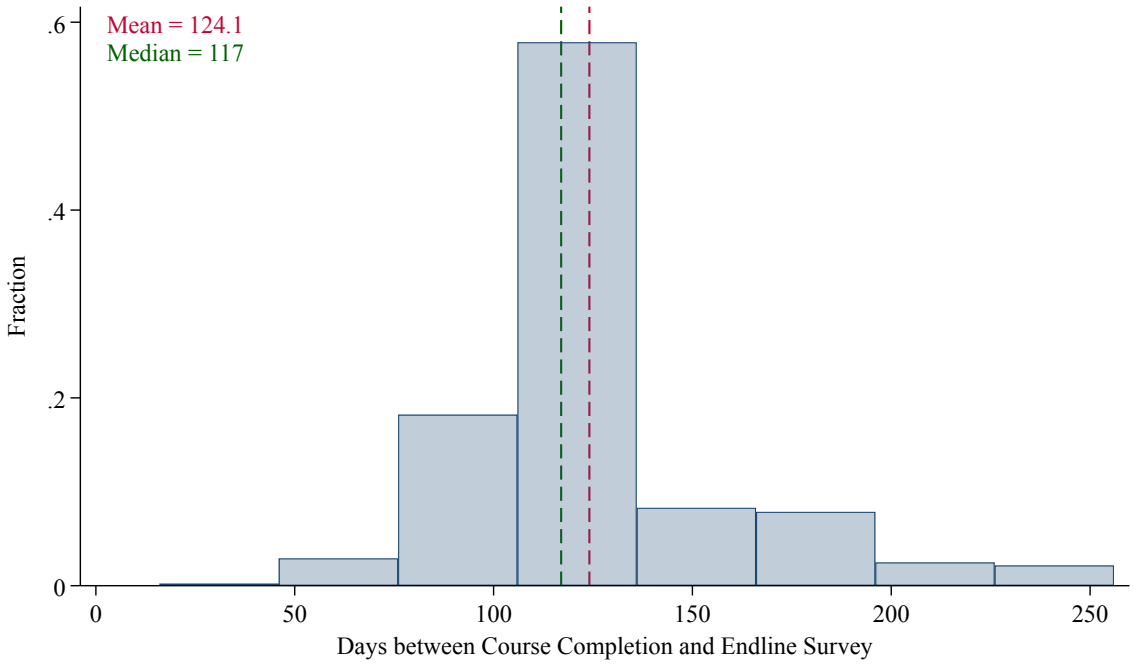

Figure 25: Lag between course completion and endline survey

Supplementary Appendix

A Randomization

Italy has 107 school districts, one per province, managed by 86 superintendents, as 16 of them are responsible for 2 or 3 districts. Hence, in practice, we randomized at the superintendent level, with 43 superintendents randomly assigned to treatment status and 43 to control status. Table A.1 lists all Italian provinces by their assignment status.

In this Appendix, we perform balance tests based on administrative information. Table A.3 shows that there are no significant differences between treatment and control units in terms of geographic location, socio-economic characteristics, school types, and environmental characteristics.

Table A.1: Treated and control provinces

Treated group	Control group
Ancona	Agrigento
Aosta	Alessandria
Arezzo	Ascoli Piceno
Bologna	Asti
Caltanissetta	Avellino
Campobasso	Bari
Chieti	Barletta-Andria-Trani
Cremona	Belluno
Enna	Benevento
Ferrara	Bergamo
Firenze	Biella
Foggia	Bolzano
Frosinone	Brescia
Genova	Brindisi
Grosseto	Cagliari
Imperia	Caserta
Isernia	Catania
L'Aquila	Catanzaro
Latina	Como
Lecce	Cosenza
Lecco	Crotone
Lodi	Cuneo
Messina	Fermo
Milano	Forlì-Cesena
Napoli	Gorizia
Nuoro	La Spezia
Oristano	Livorno
Padova	Lucca
Pavia	Macerata
Perugia	Mantova
Pescara	Massa-Carrara
Pistoia	Matera
Pordenone	Modena
Prato	Monza Brianza
Ragusa	Novara
Ravenna	Palermo
Reggio Emilia	Parma
Rovigo	Pesaro Urbino
Siena	Piacenza
Siracusa	Pisa
Sondrio	Potenza
Taranto	Reggio Calabria
Teramo	Rieti
Terni	Rimini
Torino	Roma
Trapani	Salerno
Trento	Sassari
Udine	Savona
Varese	Sud Sardegna
Verbano-Cusio-Ossola	Treviso
Verona	Trieste
Vicenza	Venezia
	Vercelli
	Vibo Valentia
	Viterbo

Table A.2: Balance table at the superintendent level

	(1)	(2)	(3)	(4)	(5)	(6)
	Control group		Treated group			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Panel A: Geographic location						
North	0.442	0.502	0.488	0.506	0.047	0.670
Center	0.163	0.374	0.186	0.394	0.023	0.779
South	0.256	0.441	0.186	0.394	-0.070	0.441
Panel B: Socio-economic characteristics						
Total population	589,159.000	657,932.312	619,829.562	673,149.625	30,670.531	0.831
Female population	302,046.125	341,893.344	318,417.344	347,051.562	16,371.221	0.826
Male population	287,112.875	316,081.281	301,412.188	326,117.781	14,299.311	0.837
Total foreign population	49,491.316	83,948.81	55,764.945	76,671.770	6,273.628	0.718
Female foreign population	25,555.016	44,182.170	28,829.861	39,373.450	3,274.845	0.718
Male foreign population	23,936.303	39,781.070	26,935.086	37,348.760	2,998.783	0.719
Unemployment rate	10.705	6.018	10.284	5.624	-0.421	0.738
Gross Domestic Product (per capita)	26,113.178	7,671.360	27,432.945	8,007.408	1,319.767	0.437
Population density	280.217	350.729	310.860	485.423	30.643	0.738
Panel C: School characteristics						
Total number of schools	560.713	482.034	539.039	490.368	-21.674	0.837
Kindergartens	233.512	200.775	226.992	206.015	-6.519	0.882
Primary schools	173.128	143.902	165.965	147.901	-7.163	0.820
Grade 1 schools	83.019	68.195	78.054	65.601	-4.965	0.732
Grade 2 schools	71.054	74.675	68.027	75.743	-3.027	0.852
Total enrollment	84,873.648	94,222.640	89,131.930	103,370.453	4,258.279	0.842
Kindergarten enrollment	14,500.104	15,625.470	15,443.569	17,804.880	943.465	0.795
Primary school enrollment	27,019.357	31,166.920	28,370.178	33,172.830	1,350.822	0.846
Grade 1 school enrollment	16,992.500	19,056.720	17,829.094	21,139.020	836.593	0.848
Grade 2 school enrollment	26,361.686	28,541.810	27,489.086	31,459.880	1,127.399	0.862

Table A.3: Balance table (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	Control group		Treated group			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Panel D: Environmental characteristics						
Water use	213.036	38.968	214.601	45.364	1.565	0.864
Electricity use	2,740.956	2,648.08	3,216.373	3,117.770	475.417	0.448
Number of PV installations	7,885.229	6,192.28	8,269.651	5,574.040	384.422	0.763
Total PV capacity	175,101.609	107,561.836	205,626.016	137,872.125	30,524.410	0.256
Waste collected	476.807	88.335	493.940	84.163	17.132	0.360
Public transport	89.785	135.214	81.311	96.962	-8.474	0.739
Bus availability	69.427	33.215	65.724	30.292	-3.703	0.591
Kilometers by bus	2,159.996	1,196.43	2,067.519	1,158.140	-92.477	0.717
Bike route density	33.813	38.852	37.053	40.431	3.240	0.706
Pedestrian zones	40.780	76.316	34.424	36.863	-6.356	0.624
Car density	2,630.674	748.045	2,594.019	800.333	-36.655	0.827
Employees in cooperatives	4.323	1.699	4.434	1.833	0.111	0.771
Ultra-wideband subscriptions	13.721	3.560	14.192	3.948	0.471	0.563
Observations	43		43			

Notes: The sample includes 107 Italian provinces and 86 school district superintendents since 16 superintendents are responsible for 2 or 3 provinces (43 in the control group and 43 in the treated group). Columns (1)-(4) present the mean and the standard deviation of each variable for the control and the treated groups. Column (5) presents the difference in the mean of each variable. Column (6) presents the p-value of tests of difference in means between treatment and control groups. Panel A shows the differences between treated and control groups in the geographic location of each province and panel B in the socio-economic characteristics in 2018. Panel C presents the differences between treatment and control groups in each province's school characteristics in 2018 where kindergartens, grade 1 and grade 2 schools refer to the number of schools, and enrollment refers to the number of students enrolled. Panel D presents the differences between treatment and control groups in environmental characteristics where water use refers to total liters of water per inhabitant per day in 2018, electricity use to the total electricity consumption requested from distribution networks in 2018 (GWh), number of PV installations is the number of photovoltaic panels installed in 2018, total PV capacity is the photovoltaic power (kW) in 2018, waste collected is the total waste collected per inhabitant (kg) in 2017, public transport is the number of annual passengers in public transport per inhabitant in 2017, bus availability is the number of buses per 100,000 inhabitants in 2017, kilometers by bus are the number of kilometers travelled by bus per inhabitant in 2017, bike route density is the number of kilometers per 100 km^2 of bike routes in 2017; pedestrian zones is the number of square meters area as pedestrian zone in 2017, car density is the number of vehicles circulating per km^2 of urbanized area in 2017, employees in cooperatives is the percentage of cooperative company employees out of total employees, and ultra-wideband subscriptions is the number of ultra-wideband subscriptions as a percentage of the resident population. Source: Italian Institute of Statistics ISTAT (http://dati.istat.it/, last accessed, June 27, 2024).

B Power Calculations

In this appendix we present the power calculations related to the results presented in the paper, with the aim of describing as precisely as possible the statistical power of our setting. In the following, we present the minimum detectable effect (MDE) for any of the outcomes presented in Tables F.1 to F.12. Throughout, we always consider one-sided tests with a significance level of 5% and a power of 80%.

Table B.1: Minimum detectable effects on climate literacy

	MDE	Mean	N
Climate literacy	1.631	67.971	5392
Do not know	1.184	16.283	5392

Notes: The variable "Climate literacy" is the percentage of correct responses given by the teacher, that is total number of correct responses divided by six questions. The variable "Do not know" is the percentage of "I do not know" responses, that is the total number of "I do not know" divided by six questions. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.2: Minimum detectable effects on perceived preparedness

	MDE	Mean	N
Informed on climate change	0.048	2.682	5386
Informed on economic policies	0.047	2.259	5230
Importance of staying informed on economic policies	0.045	3.485	5236

Notes: "Informed on climate change" is a variable equal to 1 if the respondent feels not informed at all on climate change, 2 little informed, 3 quite informed, and 4 very informed. "Informed on economic policies" is a variable equal to 1 if the respondent considers herself not informed at all on economic policies, 2 little informed, 3 quite informed, and 4 very informed. "Importance of staying informed on economic policies" is a variable equal to 1 if the respondent thinks it is not important at all to stay informed on economic policy, 2 little important, 3 quite important, and 4 very important. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations. Standard errors clustered at the province level are in parentheses.

Table B.3: Minimum detectable effects on climate change beliefs

	MDE	Mean	N
Climate change exists	1.219	92.070	5306
Climate change is anthropogenic	1.013	87.773	5332

Notes: The variable "Climate change exists" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is a currently existing and ongoing phenomenon?". The variable "Climate change is anthropogenic" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is caused primarily by human activities and behaviors?".

Table B.4: Minimum detectable effects on concerns about climate change impacts

	MDE	Mean	N
Climate change concern	0.054	3.655	5086
Plants	0.065	3.706	4646
Animals	0.066	3.914	4650
Human beings	0.067	4.024	4656
Children	0.067	4.284	4582
Own children	0.075	4.224	3280
Italians	0.073	3.655	4402
Own self	0.089	3.409	4418
Own health	0.084	3.544	4488
Own lifestyle	0.085	2.879	4392
Own future	0.083	3.333	4442
Future generations	0.066	4.383	4588
The future of the Planet	0.078	4.350	4586

Notes: "Climate change concern" is a variable equal to 1 if the respondent has a very low concern on climate change, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Plants" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on plants, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Animals" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on animals, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Children" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on children, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Own children" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on own children, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Italians" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on Italians, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Own self" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on herself, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Own health" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on her own health, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Own lifestyle" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on her own lifestyle, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Own future" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on her own future, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "Future generations" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on future generations, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. "The future of the Planet" is a variable equal to 1 if the respondent has very low concern on the impacts of climate change on the future of the Planet, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.5: Minimum detectable effects on eating habits

	MDE	Mean	N
Panel A: Past behavior			
Buying local food	0.125	2.047	5264
Buying organic food	0.105	2.557	5158
Consuming meat	0.062	1.942	5218
Panel B: Future behavior			
Buying local food	0.119	1.809	4234
Buying organic food	0.105	2.310	4162
Consuming meat	0.071	2.111	4212

Notes: Panel A and panel B refer to how often the respondent has engaged or will engage, respectively, in buying locally produced food, buying organic food, and consuming meat. "Buying local food," "Buying organic food," and "Consuming meat" are variables equal to 1 if the respondent engaged or will engage in this behavior multiple times per week, 2 once per week, 3 every two weeks, 4 once per month, 5 once per year, and 6 never. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.6: Minimum detectable effects on traveling habits

	MDE	Mean	N
Panel A: Past behavior			
Driving 0 km	0.019	0.067	5378
Driving 1-500 km	0.030	0.142	5378
Driving 501-1000 km	0.035	0.154	5378
Driving 1001-5000 km	0.044	0.258	5378
Driving 5001-10000 km	0.039	0.191	5378
Driving >10000 km	0.038	0.189	5378
Number of passengers	0.075	1.884	4946
Continental flights	0.053	0.439	5430
Intercontinental flights	0.028	0.089	5412
Panel B: Future behavior			
Driving 0 km	0.017	0.046	5502
Driving 1-500 km	0.027	0.154	5502
Driving 501-1000 km	0.036	0.170	5502
Driving 1001-5000 km	0.036	0.267	5502
Driving 5001-10000 km	0.035	0.203	5502
Driving >10000 km	0.030	0.160	5502
Number of passengers	0.069	1.895	5208
Continental flights	0.045	0.387	5672
Intercontinental flights	0.027	0.115	5650

Notes: Panel A and panel B refer to traveling behavior in the past and in the future, respectively. The variables "Driving 0 km", "Driving 1-500 km", "Driving 501-1000 km", "Driving 1001-5000 km", "Driving 5001-10000 km", and "Driving >10000 km" are dummy variables equal to 1 if the respondent drove (panel A) or expects to drive (panel B), respectively, 0, 1-500, 501-1000, 1001-5000, 5001-10000, or more than 10000 kilometers, and 0 otherwise. The variable "Number of passengers" is the number of people that typically traveled in the respondent's car (panel A) or the respondent expects to travel in her car in the future (panel B) on a typical trip. "Continental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one domestic or continental (i.e., within Europe) flight, 0 otherwise. "Intercontinental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one intercontinental flight (i.e., to/from non-European continents), 0 otherwise. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.7: Minimum detectable effects on climate-friendly behaviors

	MDE	Mean	N
Panel A: Past behavior (1/0)			
Avoiding eating meat for environmental reasons	0.041	0.473	5262
Buying goods/services from companies fighting climate change	0.040	0.684	5222
Paying attention to products' environmental impact	0.028	0.877	5248
Supporting environmental organizations	0.044	0.316	5190
Signing climate change petitions	0.158	0.590	244
Participating in climate demonstrations	0.152	0.375	240
Buying renewable energy	0.151	0.352	244
Buying solar panels	0.105	0.197	244
Buying hybrid/electric vehicles	0.116	0.187	246
Panel B: Future behavior (0-100)			
Avoiding eating meat for environmental reasons	1.804	58.648	5486
Buying goods/services from companies fighting climate change	1.696	71.640	5496
Paying attention to products' environmental impact	1.417	79.979	5496
Supporting environmental organizations	2.162	49.209	5292
Signing climate change petitions	1.856	69.669	5364
Participating in climate demonstrations	2.244	55.714	5262
Buying renewable energy	2.178	64.520	5320
Buying solar panels	2.925	46.329	5108
Buying hybrid/electric vehicles	2.478	54.144	5172

Notes: The variables in panel A are dummy variables equal to 1 if the respondent has adopted in the past the behavior indicated in each row of panel A, 0 otherwise. The variables in panel B refer to the probability between 0 and 100 percent of adopting in the future the behavior indicated in each row of panel B. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.8: Minimum detectable effects on behaviors' perceived effectiveness in fighting climate change

	MDE	Mean	N
Avoiding eating meat for environmental reasons	0.176	7.016	5372
Buying goods/services from companies fighting climate change	0.157	7.898	5384
Paying attention to products' environmental impact	0.136	8.398	5368
Supporting environmental organizations	0.184	6.063	5216
Signing climate change petitions	0.214	6.027	5234
Participating in climate demonstrations	0.216	5.650	5186
Buying renewable energy	0.170	7.993	5310
Buying solar panels	0.202	7.619	5224
Buying hybrid/electric vehicles	0.191	7.518	5278
Buying locally produced food	0.128	8.722	5408
Buying organic food	0.174	7.419	5332
Avoiding car use	0.183	8.063	5358
Avoiding flying	0.212	7.598	5302

Notes: The variables of this table indicate the respondent's opinion on effective behaviors in fighting climate change on a scale between 0 and 10, where 0 means behavior completely ineffective and 10 extremely effective. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.9: Minimum detectable effects on support for climate policies

	MDE	Mean	N
Energy efficiency fund	1.691	81.056	4914
CO_2 regulation	1.625	83.535	4896
International treaty	1.789	81.524	4866
Cap and trade	2.816	61.348	4550
Fuel-efficient vehicle regulation	1.710	83.218	4852
Combustion engine vehicle bans	1.886	79.571	4790
Nuclear power plants	2.804	30.827	4512
Renewable energy research funds	1.415	88.345	4840
Green purchase subsidies	1.451	87.690	4836
Tax and dividend approach	2.295	61.966	4640

Notes: This table shows the respondent's support for different climate policies on a scale between 0 and 100, where 0 is minimum support and 100 is maximum support. The variable "Energy efficiency fund" refers to the creation of a public fund to support the construction of energy-efficient buildings and to promote methods and behaviors aimed at reducing energy use by citizens. The variable "CO_2 regulation" refers to the regulation of carbon dioxide as a pollutant. The variable "International treaty" refers to the signing of an international treaty that requires Italy to reduce its carbon dioxide emissions by 90% compared to 1990 by 2050. The variable "Cap and trade" refers to the creation of a new international market that allows companies to buy and sell rights to emit greenhouse gases, considered the main cause of global warming. The variable "Fuel-efficient vehicle regulation" refers to the requirement that automakers produce more fuel-efficient cars, trucks, and SUVs. The variable "Combustion engine vehicle bans" refers to the ban on the sale of fossil fuel vehicles from 2035. The variable "Nuclear power plants" refers to the support for the construction of nuclear power plants. The variable "Renewable energy research funds" refers to an increase in funding for renewable energy sources' research, such as solar and wind energy. The variable "Green purchase subsidies" refers to the introduction of tax incentives for those who purchase energy-efficient vehicles or solar panels. The variable "Tax and dividend approach" refers to an increase in taxes on gasoline and other carbon-intensive goods, and returns the tax revenue equally to all taxpayers. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.10: Minimum detectable effects on policies' perceived effectiveness and distributional effects

	MDE	Mean	N
Panel A: Fossil fuel vehicle circulation ban			
Greenhouse gas emissions reduction	0.055	2.515	4228
Local pollution reduction	0.052	2.741	4218
Regressive effects minimization	0.102	1.781	2210
Panel B: Renewable energy subsidies			
Greenhouse gas emissions reduction	0.057	2.573	4168
Local pollution reduction	0.063	2.533	4092
Regressive effects minimization	0.087	2.155	2596
Panel C: Carbon taxes			
Greenhouse gas emissions reduction	0.081	2.184	3390
Local pollution reduction	0.081	2.143	3336
Regressive effects minimization	0.110	1.737	1932

Notes: In panel A, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to minimize the regressive effects on disadvantaged families. In panel B, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to minimize the regressive effects on disadvantaged families local pollution is low, 2 if medium, and 3 if high. In panel C, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to minimize the regressive effects on disadvantaged families local pollution is low, 2 if medium, and 3 if high. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.11: Minimum detectable effects on the use of revenues from carbon taxation

	MDE	Mean	N
Reducing labor taxes in Italy	0.033	0.080	3234
National climate fund in Italy	0.048	0.236	3234
Domestic carbon dividends	0.024	0.036	3234
Global climate fund for developing economies	0.035	0.108	3234
Global climate fund for all countries	0.056	0.517	3234
International carbon dividends	0.036	0.022	3234
Do not know	0.045	0.201	4636

Notes: "Reducing labor taxes in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to reduce labor taxes in Italy, 0 otherwise. "National climate fund in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to create a national climate fund aimed at reducing carbon dioxide emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy, 0 otherwise. "Domestic carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to return them in equal shares to all Italian citizens in the form of annual payments, 0 otherwise. "Global climate fund for developing economies" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in developing countries, 0 otherwise. "Global climate fund for all countries" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in all countries, 0 otherwise. "International carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and then return them in equal shares to the citizens of all countries, including Italy, in the form of annual payments, 0 otherwise. "Do not know" is a dummy variable equal to 1 if the respondent does not know what the most appropriate use of the revenues from carbon taxation is, 0 otherwise. MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

Table B.12: Minimum detectable effects on emotions

	MDE	Mean	N
Fear	0.183	6.800	4808
Feeling of helplessness	0.180	7.274	4794
Interest/curiosity	0.198	7.370	4718
Anger/rage	0.259	5.528	4610
Sadness	0.204	7.193	4742
Hope	0.241	5.570	4644
Depression	0.241	3.716	4452
Sense of guilt	0.193	4.648	4570
Disgust	0.268	4.562	4356
Skepticism	0.322	3.946	4352
Indignation	0.223	6.275	4496
Worry	0.151	8.020	4734
Powerlessness	0.224	6.066	4548
Uncertainty	0.228	6.545	4542

Notes: The variables "Fear," "Feeling of helplessness," "Interest/curiosity," "Anger/rage," "Sadness," "Hope," "Depression," "Sense of guilt," "Disgust," "Skepticism," "Indignation," "Worry," "Powerlessness," and "Uncertainty" are variables between 0 and 10 where 0 means "emotion not present/not perceived" and 10 "emotion extremely strong/perceived intensely." MDE is the minimum detectable effect, computed as described at the beginning of the Appendix. Mean refers to the mean of the variable at the baseline. N is the number of observations.

C Course

As mentioned in the main body of paper, the structure of our proprietary course on climate change and climate policy closely mirrors the organization of the Intergovernmental Panel on Climate Change's working groups. The first module focuses on the hard science of climate change, including origins and causes, measurement, and evolution. The second module focuses on the impacts of climate change. The third module focuses on mitigation, covering systemic approaches through climate policies as well as behavioral change at the individual level, and potential margins of adaptation. The course was delivered asynchronously via online video lectures of an overall duration of 10 hours. In addition to the video lectures and slides, we posted interactive cards and quizzes. The course material was made available to all teachers participating in the course and was ready for use with students. In what follows we describe in detail the organization of the course.

An introductory module, to which we refer as module zero, described the outline of the course, the requirements to receive a certificate, and how the instructors were going to communicate with the class.

The first module covered the following topics on the science of climate change, divided into four parts for the video lectures:
- the difference between climate and weather;
- whether the Earth is currently warming;
- how we know that the Earth is currently warming;
- what is a climate model;
- what are the causes of global warming;
- CO_2, carbon cycle, and climate change;
- climate change throughout history;

- how to know that CO_2 levels have been increasing;
- the Keeling curve;
- CO_2 in the atmosphere over the last 800,000 years;
- how can CO_2 emissions affect global temperatures;
- the greenhouse gas effect;
- greenhouse gases and climate change;
- which sectors contribute to greenhouse gases and thus climate change.

The first module also included, besides the video lectures, a final quiz and the following interactive cards:
- reading a heat map;
- plotting temperature increases from raw data.

The second module covered the following topics on the impacts of climate change, divided into three parts for the video lectures:
- sea level rise;
- ocean warming;
- droughts;
- floods and landslides;
- extreme weather events;
- snow melting;
- glacier retreat;
- sea ice melting;
- permafrost thawing;
- sea level rise;
- ocean acidification;
- climate change impacts on agriculture;

- climate change impacts on water supply;
- climate change impacts on energy demand and supply;
- climate change impacts on human health;
- climate change impacts on flora, fauna, and ecosystems;
- climate change impacts on coastal areas;
- climate change impacts on recreational activities;
- climate change impacts on migration.

The second module also included, besides the video lectures, a final quiz and the following interactive cards:
- thermal expansion model (hands-on activity with plastic bottles and straws);
- modeling the Earth system;
- landslide risk using landslide hazard maps for Italy;
- flood risk using flood maps for Italy;
- land versus sea or how melting land ice affects sea level rise differently from melting sea ice (hands-on activity with plastic containers and actual ice);
- Netflix documentary "Our planet" and guided class discussion;
- online "climate change expedition" examining climate change impacts around the world via the U.S. Environmental Protection Agency's website;
- tracking wildfires with satellite data.

The third module covered the following topics on potential solutions to climate change, divided into four parts for the video lectures:
- own individual behavior and carbon footprints;
- every effort counts;
- what can be done to reduce the carbon footprint;
- own individual behavior and adaptation to climate change;

- economic policies for climate change mitigation: command and control;
- economic policies for climate change mitigation: market-based instruments (overview);
- economic policies for climate change mitigation: other policy instruments;
- more in-depth analysis of carbon taxation;
- the social cost of carbon;
- how to calculate climate damages;
- how to use revenues from carbon taxation;
- more in-depth analysis of cap and trade;
- the European Union Emissions Trading System;
- international climate negotiations;
- the European Union's strategy for climate adaptation;
- climate adaptation in Italy;
- the Declaration on climate adaptation for the Green Cities;
- examples of adaptation measures from around the world.

The third module also included, besides the video lectures, a final quiz and the following interactive cards:
- grocery shopping's carbon footprint;
- documentary "Make the world Greta again" and guided class discussion;
- Participating in a citizen science project;
- Using satellites to examine the potential for solar energy;
- Pedagogical game on cap and trade (with random allocation of allowances, or chairs, through a game of musical chairs), from Carattini et al. (2020).

D Descriptive Statistics

D.1 Teachers' Descriptive Statistics

In this section, we describe our sample of teachers, in terms of their socioeconomic characteristics (keeping in mind that they all share the same job) and their role in the schools where they teach. We provide these statistics based on the panel sample of 2,906 teachers (across 1,749 schools and 106 provinces) who answered both the baseline and endline surveys. The next section (Appendix D.2) compares the panel sample with the baseline sample.

In terms of socioeconomic characteristics, we have information about teachers' gender, age, educational background, origin (most teachers teach in their province of origin), self-reported intention to be a teacher since the completion of their studies, generalized trust, risk, and time preferences. As shown in Table D.1, 78% of panel teachers are female, their average age is 52, 44% have a graduate degree, 73% are married, and 98% are born in Italy. 57% are from Northern Italy, 13% from the center, and 30% from Southern Italy.

The survey targeted teachers in both lower- and upper-secondary schools. About 42% of panel teachers teach in a lower-secondary school and 57% in an upper-secondary school, with the remaining less than 1% teaching in both. About 98% of panel teachers work in a public school. Around 6% teach in more than one school, although teachers working in public schools rarely teach also in private schools and vice versa (0.21%). 79% of panel teachers have a permanent contract and 85% work full time. Their average number of teaching experience is 17. Figure D.1 plots the sample distribution of years of experience.

We also know the number of hours per week panel teachers worked in the school year 2020-2021 and the subjects they taught. The distribution of weekly working hours shown in Figure D.2 has a mean of 16 hours/week. 74% of panel teachers taught civics education, 48% hard sciences, 23% humanities, 6% foreign languages, 5% social sciences, 3% art, and 19% other disciplines. Interestingly, only 38% of panel teachers identify teaching as their main career objective after high school.

OECD and ISTAT sources provide information on few population characteristics, including age, gender, and macroarea. We use this information to compare panel sample teachers with their underlying population of Italian secondary school teachers along those three dimensions. Table D.2 shows that the age and gender distributions are overall similar between sample and population. On the other hand, teachers working in the North tend to be overrepresented in our sample, and teachers working in the Center and South underrepresented.

Tables D.3 and D.4 assess treatment-control balancedness in the panel and baseline sample, respectively. Both samples are overall balanced, but for the control group having a somewhat higher proportion of teachers working full time and teaching civics education.

Table D.1: Teachers' descriptive statistics - Panel sample

Variable	Mean	Std. Dev.
Female	0.778	(0.416)
Age	52.208	(9.481)
Graduate degree	0.443	(0.497)
Married	0.729	(0.445)
Born in Italy	0.975	(0.157)
Generalized trust	5.805	(2.180)
Risk preferences	5.248	(2.380)
Time preferences	7.236	(1.776)
Northern Italy	0.570	(0.495)
Central Italy	0.134	(0.341)
Southern Italy	0.296	(0.456)
Middle school	0.423	(0.494)
Public school	0.976	(0.154)
Permanent contract	0.786	(0.410)
Full time	0.852	(0.355)
Teaching goal	0.384	(0.486)
Teaching years	17.267	(10.675)
Teaching civics	0.739	(0.439)
Teaching sciences	0.478	(0.500)
Teaching humanities	0.231	(0.422)
Teaching foreign languages	0.060	(0.238)
Teaching social sciences	0.051	(0.219)
Teaching art	0.026	(0.159)
Teaching other disciplines	0.186	(0.389)
Observations	2,906	

Notes: The teachers' panel sample includes 2,906 respondents that answered both the baseline and the follow-up survey. Columns (2) and (3) present the mean and the standard deviation of each variable where "Female" is a dummy variable equal to 1 if the respondent is female, 0 otherwise. "Age" is the respondent's age. "Graduate degree" is a dummy variable equal to 1 if the respondent has a master or a Ph.D. degree as the highest education level, 0 otherwise. "Married" is a dummy variable equal to 1 if the respondent is married, 0 otherwise. "Born in Italy" is a dummy variable equal to 1 if the respondent is born in Italy, 0 otherwise. "Generalized trust" refers to the question "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please, use a scale from 0 to 10 where 0 means you can't be too careful, and 10 that most people can be trusted." "Risk preferences" refers to the question "In general, how willing or not willing are you to take risks? Please use a scale from 0 to 10, where a 0 means 'you are completely unwilling to take risks' and a 10 means 'you are completely willing to take risks.'" "Time preferences" refers to the question "In general, how willing are you to give up something that benefits you today in order to benefit more from it in the future? Please use a scale from 0 to 10, where 0 means 'not at all willing' and 10 means 'very willing'". "Northern Italy" is a dummy variable equal to 1 if the respondent teaches in Northern Italy, 0 otherwise. "Central Italy" is a dummy variable equal to 1 if the respondent teaches in Central Italy, 0 otherwise. "Southern Italy" is a dummy variable equal to 1 if the respondent teaches in Southern Italy, 0 otherwise. "Middle school" is a dummy variable equal to 1 if the respondent teaches in a middle school, 0 otherwise. "Public school" is a dummy variable equal to 1 if the respondent teaches in a public school, 0 otherwise. "Permanent contract" is a dummy variable equal to 1 if the respondent has a permanent contract, 0 otherwise. "Full time" is a dummy variable equal to 1 if the respondent teaches full time, 0 otherwise. "Teaching goal" is a dummy variable equal to 1 if the respondent had teaching as an objective after high school, 0 otherwise. "Teaching years" is the total number of years of work as a teacher. "Teaching civics" is a dummy variable equal to 1 if the respondent taught civics in the past year, 0 otherwise. "Teaching sciences" is a dummy variable equal to 1 if the respondent teaches science, math, physics, or informatics, 0 otherwise. "Teaching humanities" is a dummy variable equal to 1 if the respondent teaches Italian, history, geography, philosophy, latin, or greek, 0 otherwise. "Teaching foreign languages" is a dummy variable equal to 1 if the respondent teaches foreign languages, 0 otherwise. "Teaching social sciences" is a dummy variable equal to 1 if the respondent teaches business, law, human sciences, or tourism, 0 otherwise. "Teaching art" is a dummy variable equal to 1 if the respondent teaches art, 0 otherwise. "Teaching other disciplines" is a dummy variable equal to 1 if the respondent teaches other disciplines, 0 otherwise.

Table D.2: Teachers' panel sample vs. Italian population

	Panel sample			Italian population			
	Middle school teachers	High school teachers	Middle and high school teachers	Middle school teachers	High school teachers	Middle and high school teachers	Italian population (working age 25 - 65)
Age	50.7	53.5	52.2	49	53	50	45.2
Age < 30 (%)	0.9	0.9	1	2	2	2	9.88
Age 30-39 (%)	12.8	8.6	10.7	14	11	12	21.93
Age 40-49 (%)	29	20.8	24.3	30	24	26	28.68
Age > 49 (%)	57.3	69.7	64.1	54	63	60	39.52
Female (%)	84.1	72.9	77.8	77	63.6	68.6	50.44
Male (%)	15.9	27.1	22.2	23	36.4	31.4	49.56
Northern Italy (%)	62.1	53.5	57	41	39	40	45.87
Central Italy (%)	10.3	15.7	13.4	27	27	20.2	19.92
Southern Italy (%)	27.7	30.8	29.6	32	33	39.8	34.22

Notes: This table compares our panel sample with the Italian population of middle and high school teachers and with the working age Italian population. Sources: Istat (https://esploradati.istat.it; http://dati-censimentipermanenti.istat.it/, last accessed, January 2, 2026); MIUR (https://dati.istruzione.it/espscu/index.html?area=anagScu, last accessed, January 2, 2026); OECD "Education at a Glance", 2019 (https://www.oecd.org/en/publications/education-at-a-glance-2019_f8d7880d-en.html; https://gpseducation.oecd.org/CountryProfile?plotter=h5&primaryCountry=ITA&treshold=5&topic=TA, last accessed, January 2, 2026).

Table D.3: Teachers' balance table - Panel sample

	Control group		Treatment group			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.784	(0.412)	0.773	(0.419)	-0.011	0.553
Age	51.901	(9.667)	52.479	(9.308)	0.578	0.274
Graduate degree	0.455	(0.498)	0.432	(0.496)	-0.022	0.266
Married	0.730	(0.444)	0.727	(0.445)	-0.003	0.884
Born in Italy	0.975	(0.155)	0.974	(0.159)	-0.001	0.831
Generalized trust	5.832	(2.155)	5.780	(2.201)	-0.052	0.537
Risk preferences	5.325	(2.365)	5.179	(2.392)	-0.147	0.104
Time preferences	7.254	(1.723)	7.220	(1.822)	-0.034	0.651
Northern Italy	0.519	(0.500)	0.615	(0.487)	0.096	0.469
Central Italy	0.157	(0.364)	0.114	(0.318)	-0.044	0.649
Southern Italy	0.324	(0.468)	0.271	(0.445)	-0.053	0.661
Middle school	0.432	(0.495)	0.415	(0.493)	-0.017	0.633
Public school	0.982	(0.132)	0.970	(0.170)	-0.012	0.107
Permanent contract	0.782	(0.413)	0.789	(0.408)	0.007	0.805
Full time	0.891	(0.312)	0.818	(0.386)	-0.073	0.002***
Teaching goal	0.381	(0.486)	0.386	(0.487)	0.005	0.824
Teaching years	17.200	(10.647)	17.325	(10.703)	0.125	0.822
Teaching civics	0.801	(0.399)	0.684	(0.465)	-0.117	0.000***
Teaching sciences	0.493	(0.500)	0.465	(0.499)	-0.028	0.160
Teaching humanities	0.232	(0.422)	0.230	(0.421)	-0.002	0.901
Teaching foreign languages	0.054	(0.227)	0.065	(0.247)	0.011	0.225
Teaching social sciences	0.051	(0.220)	0.050	(0.219)	0.000	0.973
Teaching art	0.023	(0.149)	0.028	(0.166)	0.006	0.303
Teaching other disciplines	0.182	(0.386)	0.190	(0.393)	0.009	0.568
Observations	1,360		1,546			

Notes: The sample includes 2,906 respondents that answered both the baseline and the follow-up survey. Columns (2)-(5) present the mean and the standard deviation of each variable for the control and the treatment groups. Column (6) presents the difference in the mean of each variable. Column (7) presents the p-value of tests of difference in means between treatment and control groups. The variables are described in Table D.1.

Table D.4: Teachers' balance table - Baseline sample

	Control group		Treatment group			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.778	(0.416)	0.765	(0.424)	-0.013	0.382
Age	51.097	(9.992)	51.239	(9.627)	0.142	0.782
Graduate degree	0.469	(0.499)	0.453	(0.498)	-0.016	0.365
Married	0.704	(0.457)	0.721	(0.449)	0.017	0.252
Born in Italy	0.979	(0.144)	0.977	(0.151)	-0.002	0.626
Generalized trust	5.805	(2.178)	5.784	(2.159)	-0.021	0.776
Risk preferences	5.273	(2.423)	5.203	(2.409)	-0.070	0.353
Time preferences	7.222	(1.802)	7.186	(1.802)	-0.036	0.535
Northern Italy	0.491	(0.500)	0.589	(0.492)	0.099	0.463
Central Italy	0.161	(0.367)	0.130	(0.337)	-0.030	0.753
Southern Italy	0.348	(0.477)	0.281	(0.449)	-0.068	0.587
Middle school	0.438	(0.496)	0.454	(0.498)	0.016	0.612
Public school	0.975	(0.155)	0.969	(0.172)	-0.006	0.435
Permanent contract	0.736	(0.441)	0.758	(0.428)	0.022	0.480
Full time	0.886	(0.318)	0.809	(0.393)	-0.077	0.000***
Teaching goal	0.393	(0.489)	0.392	(0.488)	-0.001	0.963
Teaching years	16.117	(10.777)	16.083	(10.553)	-0.035	0.949
Teaching civics	0.795	(0.404)	0.684	(0.465)	-0.110	0.000***
Teaching sciences	0.462	(0.499)	0.445	(0.497)	-0.018	0.336
Teaching humanities	0.240	(0.427)	0.229	(0.420)	-0.010	0.515
Teaching foreign languages	0.059	(0.236)	0.069	(0.253)	0.010	0.238
Teaching social sciences	0.049	(0.217)	0.055	(0.228)	0.006	0.376
Teaching art	0.023	(0.151)	0.032	(0.175)	0.008	0.052*
Teaching other disciplines	0.199	(0.399)	0.203	(0.402)	0.004	0.755
Observations	2,474		3,742			

Notes: The sample includes 6,216 respondents that answered the baseline survey. Columns (2)-(5) present the mean and the standard deviation of each variable for the control and the treatment groups. Column (6) presents the difference in the mean of each variable. Column (7) presents the p-value of tests of difference in means between treatment and control groups clustering at the province level. The variables are described in Table D.1.

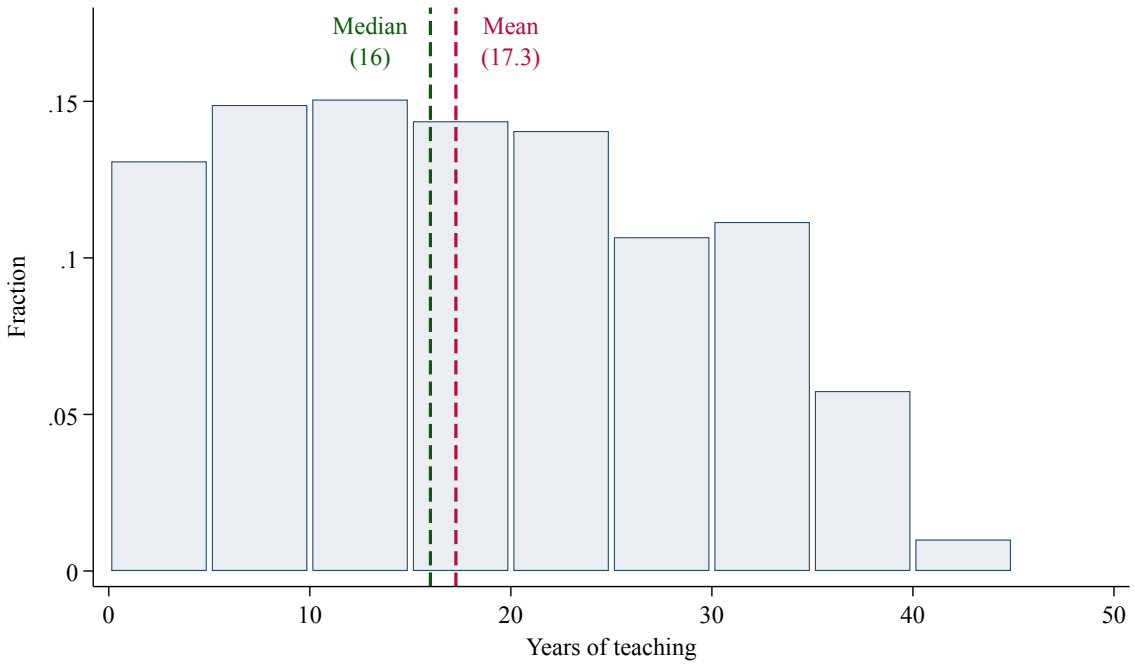

Figure D.1: Experience in teaching

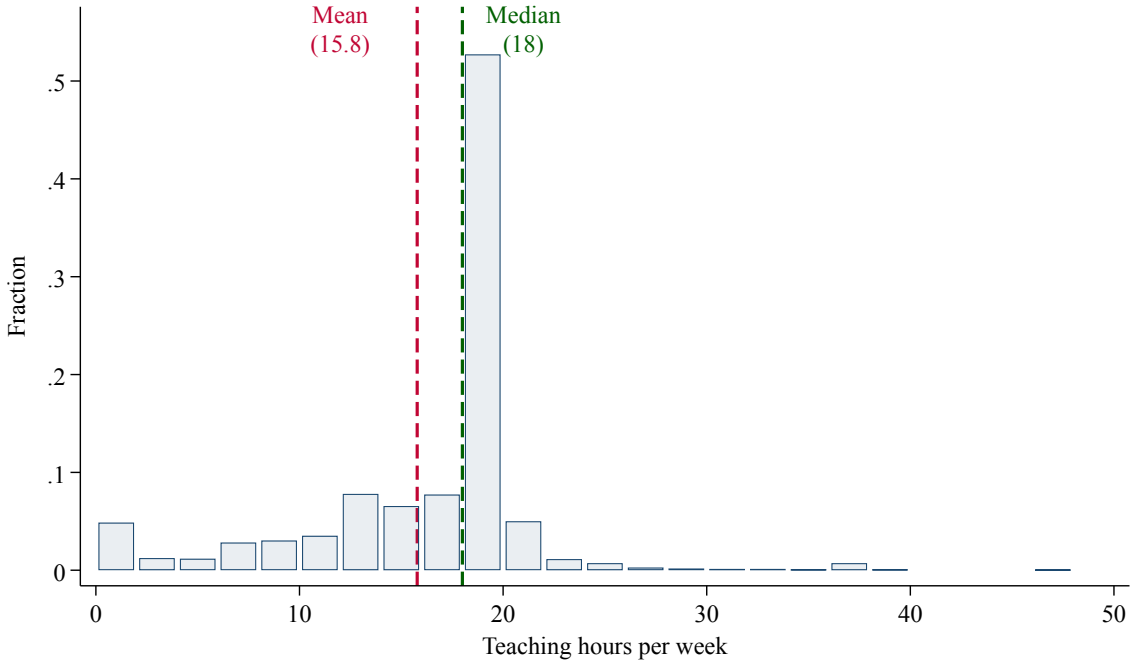

Figure D.2: Teaching hours per week

D.2 Teachers' attrition

Given the panel nature of our teachers' sample, it is important to analyze attrition between baseline and endline samples.

We start by reporting response rates to the endline survey among those teachers who answered the baseline survey: 47% overall, 41% in the treated group, and 55% in the control group.

We then proceed to compare the characteristics of panel teachers with those of baseline teachers, overall and by assignment status. We do so in Tables D.5, D.6, and D.7. While we observe differences between panel and baseline samples along few dimensions, such as age, educational degree, marital status, and teaching hours, their magnitude is very small. Further, we do not find any striking evidence of differential attrition between treatment and control groups.

Table D.5: Teachers' panel sample versus baseline sample

	Panel sample		Baseline sample			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.778	(0.416)	0.770	(0.421)	-0.008	0.140
Age	52.208	(9.481)	51.182	(9.775)	-1.027	0.000***
Graduate degree	0.443	(0.497)	0.459	(0.498)	0.017	0.007***
Married	0.729	(0.445)	0.714	(0.452)	-0.015	0.039**
Born in Italy	0.975	(0.157)	0.978	(0.148)	0.003	0.132
Generalized trust	5.805	(2.180)	5.793	(2.167)	-0.012	0.708
Risk preferences	5.248	(2.380)	5.231	(2.415)	-0.017	0.539
Time preferences	7.236	(1.776)	7.201	(1.802)	-0.035	0.118
Northern Italy	0.570	(0.495)	0.550	(0.498)	-0.020	0.127
Central Italy	0.134	(0.341)	0.143	(0.350)	0.008	0.348
Southern Italy	0.296	(0.456)	0.308	(0.462)	0.012	0.311
Middle school	0.423	(0.494)	0.448	(0.497)	0.025	0.001***
Public school	0.976	(0.154)	0.972	(0.166)	-0.004	0.071*
Permanent contract	0.786	(0.410)	0.749	(0.434)	-0.037	0.000***
Full time	0.852	(0.355)	0.840	(0.367)	-0.012	0.006***
Teaching goal	0.384	(0.486)	0.393	(0.488)	0.009	0.184
Teaching years	17.267	(10.675)	16.097	(10.642)	-1.170	0.000***
Teaching civics	0.739	(0.439)	0.729	(0.445)	-0.010	0.100
Teaching sciences	0.478	(0.500)	0.452	(0.498)	-0.027	0.000***
Teaching humanities	0.231	(0.422)	0.233	(0.423)	0.002	0.699
Teaching foreign languages	0.060	(0.238)	0.065	(0.247)	0.005	0.088*
Teaching social sciences	0.051	(0.219)	0.053	(0.224)	0.002	0.479
Teaching art	0.026	(0.159)	0.028	(0.166)	0.003	0.211
Teaching other disciplines	0.186	(0.389)	0.201	(0.401)	0.015	0.005***
Observations	2,906		6,216			

Notes: Columns (2)-(5) present the mean and the standard deviation of each variable for the control and the treatment groups. Column (6) presents the difference in the mean of each variable. Column (7) presents the p-value of tests of difference in means between treatment and control groups. The variables are described in Table D.1.

Table D.6: Teachers' control group - Panel sample vs baseline sample

	Panel sample		Baseline sample			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.784	(0.412)	0.778	(0.416)	-0.006	0.488
Age	51.901	(9.667)	51.097	(9.992)	-0.804	0.000***
Graduate degree	0.455	(0.498)	0.469	(0.499)	0.015	0.106
Married	0.730	(0.444)	0.704	(0.457)	-0.026	0.001***
Born in Italy	0.975	(0.155)	0.979	(0.144)	0.004	0.237
Generalized trust	5.832	(2.155)	5.805	(2.178)	-0.027	0.513
Risk preferences	5.325	(2.365)	5.273	(2.423)	-0.053	0.231
Time preferences	7.254	(1.723)	7.222	(1.802)	-0.031	0.356
Northern Italy	0.519	(0.500)	0.491	(0.500)	-0.028	0.002***
Central Italy	0.157	(0.364)	0.161	(0.367)	0.004	0.421
Southern Italy	0.324	(0.468)	0.348	(0.477)	0.025	0.009***
Middle school	0.432	(0.495)	0.438	(0.496)	0.007	0.525
Public school	0.982	(0.132)	0.975	(0.155)	-0.007	0.009***
Permanent contract	0.782	(0.413)	0.736	(0.441)	-0.046	0.000***
Full time	0.891	(0.312)	0.886	(0.318)	-0.005	0.409
Teaching goal	0.381	(0.486)	0.393	(0.489)	0.012	0.253
Teaching years	17.200	(10.647)	16.117	(10.777)	-1.083	0.000***
Teaching civics	0.801	(0.399)	0.795	(0.404)	-0.006	0.338
Teaching sciences	0.493	(0.500)	0.462	(0.499)	-0.031	0.000***
Teaching humanities	0.232	(0.422)	0.240	(0.427)	0.007	0.318
Teaching foreign languages	0.054	(0.227)	0.059	(0.236)	0.005	0.190
Teaching social sciences	0.051	(0.220)	0.049	(0.217)	-0.001	0.693
Teaching art	0.023	(0.149)	0.023	(0.151)	0.001	0.778
Teaching other disciplines	0.182	(0.386)	0.199	(0.399)	0.017	0.024**
Observations	1,360		2,474			

Notes: See Table D.5.

Table D.7: Teachers' treatment group - Panel sample vs baseline sample

	Panel sample		Baseline sample			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.773	(0.419)	0.765	(0.424)	-0.008	0.185
Age	52.479	(9.308)	51.239	(9.627)	-1.240	0.000***
Graduate degree	0.432	(0.496)	0.453	(0.498)	0.021	0.008***
Married	0.727	(0.445)	0.721	(0.449)	-0.006	0.535
Born in Italy	0.974	(0.159)	0.977	(0.151)	0.003	0.348
Generalized trust	5.780	(2.201)	5.784	(2.159)	0.004	0.924
Risk preferences	5.179	(2.392)	5.203	(2.409)	0.024	0.518
Time preferences	7.220	(1.822)	7.186	(1.802)	-0.033	0.314
Northern Italy	0.615	(0.487)	0.589	(0.492)	-0.026	0.024**
Central Italy	0.114	(0.318)	0.130	(0.337)	0.017	0.036**
Southern Italy	0.271	(0.445)	0.281	(0.449)	0.010	0.352
Middle school	0.415	(0.493)	0.454	(0.498)	0.039	0.000***
Public school	0.970	(0.170)	0.969	(0.172)	-0.001	0.848
Permanent contract	0.789	(0.408)	0.758	(0.428)	-0.031	0.000***
Full time	0.818	(0.386)	0.809	(0.393)	-0.009	0.201
Teaching goal	0.386	(0.487)	0.392	(0.488)	0.006	0.459
Teaching years	17.325	(10.703)	16.083	(10.553)	-1.242	0.000***
Teaching civics	0.684	(0.465)	0.684	(0.465)	0.001	0.959
Teaching sciences	0.465	(0.499)	0.445	(0.497)	-0.020	0.030**
Teaching humanities	0.230	(0.421)	0.229	(0.420)	-0.001	0.911
Teaching foreign languages	0.065	(0.247)	0.069	(0.253)	0.004	0.437
Teaching social sciences	0.050	(0.219)	0.055	(0.228)	0.005	0.324
Teaching art	0.028	(0.166)	0.032	(0.175)	0.003	0.354
Teaching other disciplines	0.190	(0.393)	0.203	(0.402)	0.013	0.081*
Observations	1,546		3,742			

Notes: See Table D.5.

D.3 Overlap between survey respondents and course participants

The course and survey samples need not coincide exactly. Teachers were invited through school principals and provincial school boards to respond to the survey and register for the course, without any obligation to do either or both. In addition, teachers registered for our course were directly invited to participate in the baseline survey through an announcement on the Moodle platform.

In this section, we analyze the overlap between survey respondents and course participants. In treatment provinces, we have 3,337 teachers registered for the first edition of the course, 3,742 teachers who took the baseline survey, and 1,546 teachers who took both baseline and endline surveys. Table D.8 examines the overlap between these groups based on their characteristics. We do not observe any patterns pointing to potential systematic differences between teachers only in the course, teachers in the course and having responded to the baseline survey, and teachers in the course and having responded to both survey waves.

Table D.8: Overlap between survey and course participation

	(1) C	(2) CB	(3) CP	(4) C vs CB	(5) C vs CP	(6) CB vs CP
A) Teachers who completed the course						
Female	0.788	0.768	0.772	0.020	0.016	-0.004
	(0.409)	(0.422)	(0.420)			
Age	52.256	51.972	52.456	0.284	-0.200	-0.484
	(9.376)	(9.134)	(9.072)			
Born in Italy	0.978	0.975	0.971	0.004	0.007	0.003
	(0.146)	(0.158)	(0.167)			
Married		0.734	0.733			0.001
		(0.442)	(0.443)			
Northern Italy	0.612	0.604	0.617	0.008	-0.006	-0.014
	(0.487)	(0.489)	(0.486)			
Central Italy	0.127	0.126	0.119	0.001	0.008	0.007
	(0.333)	(0.332)	(0.323)			
Southern Italy	0.261	0.270	0.264	-0.009	-0.003	0.006
	(0.440)	(0.444)	(0.441)			
Observations	2,467	1,224	928			
B) Teachers who started the course						
Female	0.800	0.777	0.784	0.022*	0.016	-0.006
	(0.400)	(0.416)	(0.412)			
Age	52.303	52.310	52.620	-0.008	-0.317	-0.309
	(9.367)	(9.273)	(9.229)			
Born in Italy	0.978	0.977	0.974	0.002	0.004	0.002
	(0.145)	(0.152)	(0.159)			
Married		0.733	0.738			-0.005
		(0.442)	(0.440)			
Northern Italy	0.609	0.593	0.612	0.016	-0.003	-0.019
	(0.488)	(0.491)	(0.488)			
Central Italy	0.131	0.130	0.124	0.001	0.007	0.006
	(0.338)	(0.337)	(0.330)			
Southern Italy	0.260	0.276	0.264	-0.017	-0.004	0.012
	(0.439)	(0.447)	(0.441)			
Observations	2,895	1,672	1,368			

Notes: In Panel A, C denotes the sample of teachers who completed the course, while, in Panel B, C denotes the sample of teachers who started the course. In both panels, CB denotes the sample of teachers who participated in the course (either completed or just started, respectively) and participated in the baseline survey, while CP denotes the sample of teachers who participated in the course (either completed or just started, respectively) and participated in both surveys of the panel. The table presents means and standard deviations for the first three columns. The last three columns report the results of a t-test between the samples denoted in the first row, with *, **, *** denoting significance at the 10%, 5%, and 1% levels, respectively.

D.4 Students' descriptive statistics

Table D.10 provides descriptive statistics for the students' baseline sample and D.9 for the students' endline sample, including respectively 5,363 and 2,413 students. Both samples show that the average age of students is 18 years and 60% of students are female. The majority of students were born in Italy and live in Northern Italy. Approximately 20% of the students are from lower-secondary schools.

Table D.11 presents balance tests comparing baseline characteristics between treated and controls in the endline sample, which we use for causal analysis. Overall, the two groups are well balanced. The share of female students, country of birth, regional location, educational attainment, and measures of generalized trust, risk preferences, and time preferences are very similar between groups, with none of the corresponding mean differences being statistically significant at conventional levels. The only difference concerns age: students in the treatment group are on average slightly younger than those in the control group (17.9 vs. 18.5 years), with a difference of 0.59 years that is marginally significant at the 10% statistical level.

Table D.9: Students' descriptive statistics (endline sample)

Variable	Mean	Std. Dev.
Female	0.602	(0.490)
Age	18.175	(2.089)
Born in Italy	0.954	(0.210)
Generalized trust	5.048	(2.448)
Risk preferences	6.221	(2.201)
Time preferences	6.543	(2.190)
Northern Italy	0.678	(0.467)
Central Italy	0.132	(0.338)
Southern Italy	0.190	(0.393)
Middle school	0.185	(0.389)
Observations	2,413	

Notes: The sample includes 2,413 students that answered the endline survey. Columns (2) and (3) present the mean and the standard deviation of each variable. The variables are described in Table D.1.

Table D.10: Students' descriptive statistics (baseline sample)

Variable	Mean	Std. Dev.
Female	0.585	(0.493)
Age	18.258	(2.142)
Born in Italy	0.948	(0.222)
Generalized trust	2.602	(5.581)
Risk preferences	3.822	(6.050)
Time preferences	4.001	(6.121)
Northern Italy	0.547	(0.498)
Central Italy	0.162	(0.368)
Southern Italy	0.292	(0.455)
Middle school	0.202	(0.402)
Observations	5,363	

Notes: The sample includes 5,363 students that answered the baseline survey. Columns (2) and (3) present the mean and the standard deviation of each variable. The variables are described in Table D.1.

Table D.11: Students' balance table

	Control group		Treatment group			
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Difference	p-value
Female	0.609	(0.488)	0.595	(0.491)	-0.013	0.811
Age	18.478	(2.081)	17.887	(2.057)	-0.591	0.085*
Born in Italy	0.960	(0.196)	0.947	(0.223)	-0.013	0.131
Generalized trust	5.149	(2.431)	4.960	(2.461)	-0.190	0.243
Risk preferences	6.278	(2.246)	6.171	(2.160)	-0.108	0.282
Time preferences	6.581	(2.210)	6.510	(2.174)	-0.071	0.540
Northern Italy	0.722	(0.448)	0.636	(0.481)	-0.086	0.564
Central Italy	0.099	(0.299)	0.163	(0.369)	0.063	0.542
Southern Italy	0.178	(0.383)	0.201	(0.401)	0.023	0.834
Middle school	0.153	(0.360)	0.217	(0.412)	0.064	0.377
Observations	1,177		1,236			

Notes: The sample includes 2,413 students that answered the endline survey. Columns (2)-(5) present the mean and the standard deviation of each variable for the control and the treatment groups. Column (6) presents the difference in the mean of each variable. Column (7) presents the p-value of tests of difference in means between treatment and control groups. The variables are described in Table D.1.

D.5 Attrition within surveys

In this section, we discuss attrition within each of the main surveys of our study, namely, teachers' and students' baseline and endline surveys. The surveys are divided into blocks, each of them containing a separate set of questions. For each survey, we present different tables discussing how covariates vary among respondents, according to the block they reached in the survey. For the purpose of these tables, we consider a respondent reaching a certain block if s/he exited the survey at that block. That is, a respondent is classified in block N if the last question s/he answered in the survey belongs to block N. On the other hand, respondents are classified as "Completed" if they completed the survey answering all the questions of the entire survey. For each survey, we show summary statistics of covariates for respondents in the control and treatment groups, as well as on how they may vary from block to block within these groups, and how such variations may differ between the control and treatment groups.

We do not observe any specific pattern leading to attrition within a survey and in particular we do not observe any specific pattern in how attrition may differ between the control and treatment groups. The number of comparisons that are significantly different seems consistent with what one would obtain by pure chance, confirming the absence of systematic differences.

Table D.12: Teachers' attrition in baseline: Means by block reached in baseline survey.

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Completed
A) Control							
Female	1.000	0.889	0.917	0.740	0.720	0.800	0.782
	-	(0.319)	(0.289)	(0.443)	(0.458)	(0.422)	(0.413)
Age	49.000	51.972	47.000	52.078	49.760	49.900	52.003
	-	(11.405)	(7.148)	(9.363)	(9.057)	(8.582)	(9.668)
Born in Italy	1.000	0.971	1.000	0.980	0.960	1.000	0.975
	-	(0.169)	(0.000)	(0.140)	(0.200)	(0.000)	(0.156)
Married	0.000	0.771	0.833	0.766	0.680	0.800	0.728
	-	(0.426)	(0.389)	(0.428)	(0.476)	(0.422)	(0.445)
Northern Italy	0.000	0.583	0.583	0.518	0.423	0.500	0.519
	-	(0.500)	(0.515)	(0.504)	(0.504)	(0.527)	(0.500)
Central Italy	1.000	0.167	0.083	0.125	0.192	0.000	0.159
	-	(0.378)	(0.289)	(0.334)	(0.402)	(0.000)	(0.366)
Southern Italy	0.000	0.250	0.333	0.357	0.385	0.500	0.322
	-	(0.439)	(0.492)	(0.483)	(0.496)	(0.527)	(0.467)
Observations	1	36	12	56	26	10	1219
B) Treated							
Female	0.500	0.860	0.867	0.741	0.761	1.000	0.770
	(0.707)	(0.351)	(0.352)	(0.442)	(0.431)	(0.000)	(0.421)
Age	54.000	53.744	52.200	53.569	54.978	47.714	52.333
	(0.000)	(9.754)	(8.529)	(9.171)	(8.191)	(12.698)	(9.324)
Born in Italy	1.000	0.976	1.000	0.983	1.000	1.000	0.972
	(0.000)	(0.154)	(0.000)	(0.131)	(0.000)	(0.000)	(0.164)
Married	1.000	0.721	0.600	0.764	0.690	0.714	0.728
	(0.000)	(0.454)	(0.507)	(0.429)	(0.468)	(0.488)	(0.445)
Northern Italy	1.000	0.614	0.800	0.621	0.588	0.857	0.612
	(0.000)	(0.493)	(0.414)	(0.489)	(0.497)	(0.378)	(0.487)
Central Italy	0.000	0.136	0.067	0.182	0.196	0.000	0.108
	(0.000)	(0.347)	(0.258)	(0.389)	(0.401)	(0.000)	(0.311)
Southern Italy	0.000	0.250	0.133	0.197	0.216	0.143	0.280
	(0.000)	(0.438)	(0.352)	(0.401)	(0.415)	(0.378)	(0.449)
Observations	2	44	15	66	51	7	1361

Notes: Standard deviations in parentheses. A dash indicates that the standard deviation is undefined because only one observation is available.

Table D.13: Teachers' attrition in baseline: Comparison with respondents reaching next block in baseline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
A) Control						
Female	0.111	-0.028	0.177	0.020	-0.080	0.018
Age	-2.972	4.972	-5.078*	2.318	-0.140	-2.103
Born in Italy	0.029	-0.029	0.020	0.020	-0.040	0.025
Married	-0.771	-0.062	0.067	0.086	-0.120	0.072
Northern Italy	-0.583	0.000	0.065	0.095	-0.077	-0.019
Central Italy	0.833	0.083	-0.042	-0.067	0.192	-0.159
Southern Italy	-0.250	-0.083	-0.024	-0.027	-0.115	0.178
Observations	1	36	12	56	26	10
B) Treated						
Female	-0.360	-0.006	0.125	-0.019	-0.239	0.230
Age	0.256	1.544	-1.369	-1.409	7.264**	-4.619
Born in Italy	0.024	-0.024	0.017	-0.017	0.000	0.028
Married	0.279	0.121	-0.164	0.073	-0.024	-0.014
Northern Italy	0.386	-0.186	0.179	0.033	-0.269	0.245
Central Italy	-0.136	0.070	-0.115	-0.014	0.196	-0.108
Southern Italy	-0.250	0.117	-0.064	-0.019	0.073	-0.137
Observations	2	44	15	66	51	7
C) Diff-in-Diff						
Female	-0.472	0.022	-0.051	-0.039	-0.159	0.212
Age	3.228	-3.428	3.709	-3.728	7.404	-2.516
Born in Italy	-0.005	0.005	-0.002	-0.038	0.040	0.003
Married	1.050*	0.183	-0.231	-0.013	0.096	-0.086
Northern Italy	0.970	-0.186	0.113	-0.062	-0.192	0.264
Central Italy	-0.970**	-0.014	-0.073	0.053	0.004	0.051
Southern Italy	0.000	0.200	-0.040	0.009	0.188	-0.316
Observations	3	80	27	122	77	17

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who reached the next block, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.14: Teachers' attrition in baseline: Comparison with respondents completing the baseline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
A) Control						
Female	0.218	0.107	0.135	-0.042	-0.062	0.018
Age	-3.003	-0.031	-5.003*	0.075	-2.243	-2.103
Born in Italy	0.025	-0.004	0.025	0.005	-0.015	0.025
Married	-0.728	0.044	0.106	0.038	-0.048	0.072
Northern Italy	-0.519	0.064	0.064	-0.001	-0.096	-0.019
Central Italy	0.841	0.008	-0.076	-0.034	0.033	-0.159
Southern Italy	-0.322	-0.072	0.012	0.036	0.063	0.178
Observations	1	36	12	56	26	10
B) Treated						
Female	-0.270	0.090	0.097	-0.029	-0.009	0.230
Age	1.667	1.411	-0.133	1.236	2.645*	-4.619
Born in Italy	0.028	0.004	0.028	0.011	0.028	0.028
Married	0.272	-0.007	-0.128	0.035	-0.038	-0.014
Northern Italy	0.388	0.002	0.188	0.009	-0.024	0.245
Central Italy	-0.108	0.028	-0.041	0.074*	0.088**	-0.108
Southern Italy	-0.280	-0.030	-0.147	-0.083	-0.064	-0.137
Observations	2	44	15	66	51	7
C) Diff-in-Diff						
Female	-0.488	-0.016	-0.038	0.013	0.053	0.212
Age	4.670	1.442	4.870	1.161	4.888**	-2.516
Born in Italy	0.003	0.008	0.003	0.005	0.043	0.003
Married	0.999*	-0.051	-0.234	-0.003	0.010	-0.086
Northern Italy	0.907	-0.062	0.124	0.011	0.072	0.264
Central Italy	-0.949**	0.021	0.034	0.108*	0.055	0.051
Southern Italy	0.042	0.042	-0.158	-0.119	-0.127	-0.316
Observations	3	80	27	122	77	17

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who completed the survey, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.15: Teachers' attrition in endline: Means by block reached in endline survey.

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Completed
A) Control							
Female	0.769	0.500	0.892	0.842	0.667	0.889	0.782
	(0.427)	(0.522)	(0.315)	(0.375)	(0.492)	(0.333)	(0.413)
Age	51.231	53.583	49.444	51.526	51.083	49.444	52.031
	(9.407)	(6.273)	(10.030)	(12.501)	(9.229)	(10.690)	(9.700)
Born in Italy	1.000	1.000	0.972	0.950	1.000	1.000	0.974
	(0.000)	(0.000)	(0.167)	(0.224)	(0.000)	(0.000)	(0.160)
Married	0.657	0.727	1.000	0.333	0.500	0.667	0.736
	(0.482)	(0.467)	(0.000)	(0.577)	(0.707)	(0.500)	(0.441)
Northern Italy	0.385	0.250	0.432	0.500	0.583	0.556	0.526
	(0.493)	(0.452)	(0.502)	(0.513)	(0.515)	(0.527)	(0.500)
Central Italy	0.179	0.167	0.162	0.200	0.167	0.111	0.157
	(0.389)	(0.389)	(0.374)	(0.410)	(0.389)	(0.333)	(0.364)
Southern Italy	0.436	0.583	0.405	0.300	0.250	0.333	0.317
	(0.502)	(0.515)	(0.498)	(0.470)	(0.452)	(0.500)	(0.465)
Observations	39	12	37	20	12	9	1162
B) Treated							
Female	0.820	0.778	0.765	0.896	0.786	0.889	0.764
	(0.388)	(0.441)	(0.431)	(0.308)	(0.426)	(0.333)	(0.425)
Age	52.118	45.444	55.559	50.515	52.571	56.111	52.418
	(9.425)	(9.462)	(8.746)	(9.748)	(7.978)	(9.943)	(9.311)
Born in Italy	1.000	1.000	1.000	1.000	0.929	0.875	0.972
	(0.000)	(0.000)	(0.000)	(0.000)	(0.267)	(0.354)	(0.166)
Married	0.638	0.667	0.800	0.750	1.000	0.667	0.730
	(0.486)	(0.500)	(0.447)	(0.463)	(0.000)	(0.500)	(0.444)
Northern Italy	0.571	0.571	0.448	0.607	0.462	0.778	0.650
	(0.500)	(0.535)	(0.506)	(0.493)	(0.519)	(0.441)	(0.477)
Central Italy	0.082	0.000	0.069	0.098	0.154	0.222	0.117
	(0.277)	(0.000)	(0.258)	(0.300)	(0.376)	(0.441)	(0.322)
Southern Italy	0.347	0.429	0.483	0.295	0.385	0.000	0.233
	(0.481)	(0.535)	(0.509)	(0.460)	(0.506)	(0.000)	(0.423)
Observations	51	9	35	69	15	9	1264

Notes: Standard deviations in parentheses.

Table D.16: Teachers' attrition in endline: Comparison with respondents reaching next block in endline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
A) Control						
Female	0.269*	-0.392***	0.050	0.175	-0.222	0.107
Age	-2.353	4.139	-2.082	0.443	1.639	-2.587
Born in Italy	0.000	0.028	0.022	-0.050	0.000	0.026
Married	-0.070	-0.273	0.667	-0.167	-0.167	-0.070
Northern Italy	0.135	-0.182	-0.068	-0.083	0.028	0.030
Central Italy	0.013	0.005	-0.038	0.033	0.056	-0.046
Southern Italy	-0.147	0.178	0.105	0.050	-0.083	0.017
Observations	39	12	37	20	12	9
B) Treated						
Female	0.042	0.013	-0.131*	0.110	-0.103	0.125
Age	6.673*	-10.114***	5.044**	-2.057	-3.540	3.693
Born in Italy	0.000	0.000	0.000	0.071**	0.054	-0.097
Married	-0.028	-0.133	0.050	-0.250	0.333	-0.064
Northern Italy	0.000	0.123	-0.158	0.145	-0.316	0.128
Central Italy	0.082	-0.069	-0.029	-0.055	-0.068	0.105
Southern Italy	-0.082	-0.054	0.188*	-0.090	0.385**	-0.233*
Observations	51	9	35	69	15	9
C) Diff-in-Diff						
Female	-0.227	0.405**	-0.181	-0.066	0.119	0.018
Age	9.026**	-14.253***°°	7.126**	-2.500	-5.179	6.279
Born in Italy	0.000	-0.028	-0.022	0.121**	0.054	-0.123
Married	0.042	0.139	-0.617	-0.083	0.500	0.006
Northern Italy	-0.135	0.306	-0.091	0.228	-0.344	0.098
Central Italy	0.069	-0.073	0.008	-0.089	-0.124	0.152
Southern Italy	0.066	-0.232	0.082	-0.140	0.468*	-0.250
Observations	90	21	72	89	27	18

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who reached the next block, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.17: Teachers' attrition in endline: Comparison with respondents reaching final block in endline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
A) Control						
Female	-0.013	-0.282**	0.110	0.060	-0.115	0.107
Age	-0.800	1.552	-2.587	-0.505	-0.948	-2.587
Born in Italy	0.026	0.026	-0.002	-0.024	0.026	0.026
Married	-0.079	-0.009	0.264	-0.403	-0.236	-0.070
Northern Italy	-0.141*	-0.276*	-0.093	-0.026	0.058	0.030
Central Italy	0.022	0.009	0.005	0.043	0.009	-0.046
Southern Italy	0.119	0.267**	0.089	-0.017	-0.067	0.017
Observations	39	12	37	20	12	9
B) Treated						
Female	0.056	0.014	0.001	0.132**	0.022	0.125
Age	-0.301	-6.974**	3.140*	-1.904	0.153	3.693
Born in Italy	0.028	0.028	0.028	0.028	-0.043	-0.097
Married	-0.092	-0.064	0.070	0.020	0.270	-0.064
Northern Italy	-0.078	-0.078	-0.202**	-0.043	-0.188	0.128
Central Italy	-0.035	-0.117	-0.048	-0.019	0.037	0.105
Southern Italy	0.114*	0.195	0.250***	0.062	0.151	-0.233*
Observations	51	9	35	69	15	9
C) Diff-in-Diff						
Female	0.069	0.296	-0.109	0.072	0.137	0.018
Age	0.500	-8.526**	5.727**°	-1.399	1.101	6.279
Born in Italy	0.002	0.002	0.030	0.052	-0.069	-0.123
Married	-0.013	-0.055	-0.194	0.423	0.506	0.006
Northern Italy	0.063	0.197	-0.108	-0.017	-0.246	0.098
Central Italy	-0.057	-0.126	-0.053	-0.061	0.028	0.152
Southern Italy	-0.005	-0.071	0.161	0.079	0.218	-0.250
Observations	90	21	72	89	27	18

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who completed the survey, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.18: Students' attrition in baseline: Means by block reached in baseline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Completed
A) Control								
Female	1.000	0.800	0.677	0.697	0.547	0.438	0.652	0.597
	(0.000)	(0.447)	(0.469)	(0.461)	(0.499)	(0.512)	(0.487)	(0.491)
Age	17.333	19.000	18.388	18.169	17.939	17.267	17.435	17.846
	(2.517)	(2.345)	(2.108)	(2.085)	(1.999)	(2.187)	(1.879)	(2.118)
Born in Italy	0.667	1.000	0.953	0.961	0.971	0.941	0.958	0.962
	(0.577)	(0.000)	(0.211)	(0.195)	(0.169)	(0.243)	(0.204)	(0.191)
Northern Italy	0.333	0.800	0.415	0.399	0.368	0.353	0.458	0.415
	(0.577)	(0.447)	(0.494)	(0.491)	(0.483)	(0.493)	(0.509)	(0.493)
Central Italy	0.333	0.000	0.220	0.235	0.289	0.412	0.333	0.205
	(0.577)	(0.000)	(0.415)	(0.426)	(0.455)	(0.507)	(0.482)	(0.404)
Southern Italy	0.333	0.200	0.364	0.366	0.343	0.235	0.208	0.381
	(0.577)	(0.447)	(0.482)	(0.483)	(0.476)	(0.437)	(0.415)	(0.486)
Observations	3	5	236	153	204	17	24	1158
B) Treated								
Female	1.000	0.714	0.569	0.567	0.512	0.556	0.417	0.583
	(0.000)	(0.463)	(0.496)	(0.496)	(0.501)	(0.504)	(0.500)	(0.493)
Age	19.000	17.667	18.803	18.859	18.515	17.879	17.176	18.314
	(2.000)	(2.331)	(2.199)	(2.156)	(2.227)	(2.205)	(1.930)	(2.101)
Born in Italy	1.000	0.952	0.940	0.923	0.945	0.833	0.972	0.944
	(0.000)	(0.218)	(0.237)	(0.267)	(0.228)	(0.378)	(0.167)	(0.230)
Northern Italy	0.333	0.389	0.575	0.661	0.673	0.750	0.583	0.615
	(0.577)	(0.502)	(0.495)	(0.474)	(0.470)	(0.439)	(0.500)	(0.487)
Central Italy	0.333	0.333	0.166	0.100	0.103	0.167	0.222	0.127
	(0.577)	(0.485)	(0.372)	(0.301)	(0.304)	(0.378)	(0.422)	(0.333)
Southern Italy	0.333	0.278	0.259	0.239	0.224	0.083	0.194	0.258
	(0.577)	(0.461)	(0.439)	(0.427)	(0.418)	(0.280)	(0.401)	(0.438)
Observations	3	21	402	300	346	36	36	2419

Notes: Standard deviations in parentheses.

Table D.19: Students' attrition in baseline: Comparison with respondents reaching next block in baseline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
A) Control							
Female	0.200	0.123	-0.021	0.151***	0.109	-0.215	0.055
Age	-1.667	0.612	0.219	0.230	0.672	-0.168	-0.411
Born in Italy	-0.333	0.047	-0.007	-0.010	0.029	-0.017	-0.004
Northern Italy	-0.467	0.385*	0.017	0.031	0.015	-0.105	0.044
Central Italy	0.333	-0.220	-0.015	-0.054	-0.123	0.078	0.129
Southern Italy	0.133	-0.164	-0.002	0.023	0.108	0.027	-0.172*
Observations	3	5	236	153	204	17	24
B) Treated							
Female	0.286	0.145	0.002	0.055	-0.044	0.139	-0.166**
Age	1.333	-1.136**	-0.055	0.343*	0.636	0.702	-1.138***
Born in Italy	0.048	0.012	0.017	-0.022	0.112***	-0.139**	0.028
Northern Italy	-0.056	-0.186	-0.086**	-0.012	-0.077	0.167	-0.032
Central Italy	0.000	0.168*	0.065**	-0.002	-0.064	-0.056	0.095*
Southern Italy	0.056	0.019	0.020	0.014	0.141**	-0.111	-0.063
Observations	3	21	402	300	346	36	36
C) Diff-in-Diff							
Female	0.086	0.022	0.023	-0.096	-0.153	0.354	-0.221
Age	3.000	-1.748	-0.275	0.113	-0.036	0.870	-0.727
Born in Italy	0.381	-0.035	0.024	-0.012	0.082	-0.122	0.032
Northern Italy	0.411	-0.571	-0.102	-0.043	-0.092	0.272	-0.075
Central Italy	-0.333	0.388	0.080	0.051	0.059	-0.134	-0.034
Southern Italy	-0.078	0.183	0.022	-0.008	0.033	-0.138	0.109
Observations	6	26	638	453	550	53	60

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who reached the next block, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.20: Students' attrition in baseline: Comparison with respondents completing the baseline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
A) Control							
Female	0.403	0.203	0.080**	0.100**	-0.050	-0.160	0.055
Age	-0.512	1.154	0.543***	0.323*	0.093	-0.579	-0.411
Born in Italy	-0.295***	0.038	-0.009	-0.001	0.009	-0.021	-0.004
Northern Italy	-0.081	0.385*	0.001	-0.016	-0.047	-0.062	0.044
Central Italy	0.129	-0.205	0.016	0.031	0.085***	0.207**	0.129
Southern Italy	-0.047	-0.181	-0.016	-0.015	-0.038	-0.146	-0.172*
Observations	3	5	236	153	204	17	24
B) Treated							
Female	0.417	0.132	-0.014	-0.016	-0.071**	-0.027	-0.166**
Age	0.686	-0.648	0.489***	0.544***	0.201	-0.435	-1.138***
Born in Italy	0.056	0.009	-0.003	-0.020	0.001	-0.110***	0.028
Northern Italy	-0.282	-0.226**	-0.040	0.046	0.058**	0.135*	-0.032
Central Italy	0.206	0.206***	0.039**	-0.027	-0.024	0.039	0.095*
Southern Italy	0.076	0.020	0.001	-0.019	-0.034	-0.174**	-0.063
Observations	3	21	402	300	346	36	36
C) Diff-in-Diff							
Female	0.014	-0.071	-0.093	-0.116	-0.021	0.132	-0.221
Age	1.198	-1.802	-0.054	0.221	0.108	0.144	-0.727
Born in Italy	0.352	-0.029	0.005	-0.019	-0.007	-0.090	0.032
Northern Italy	-0.200	-0.612	-0.041	0.062	0.105	0.197	-0.075
Central Italy	0.077	0.411	0.023	-0.057	-0.109	-0.168	-0.034
Southern Italy	0.123	0.201	0.018	-0.004	0.004	-0.029	0.109
Observations	6	26	638	453	550	53	60

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who completed the survey, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.21: Students' attrition in endline: Means by block reached in endline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Completed
A) Control								
Female	0.722	0.579	0.684	0.628	0.643	0.200	0.556	0.605
	(0.461)	(0.496)	(0.468)	(0.486)	(0.497)	(0.422)	(0.527)	(0.489)
Age	18.556	18.323	19.038	18.758	18.333	17.200	18.200	18.429
	(1.977)	(2.003)	(1.720)	(2.006)	(2.225)	(2.821)	(1.619)	(2.117)
Born in Italy	0.722	0.939	0.962	0.930	0.933	1.000	1.000	0.970
	(0.461)	(0.240)	(0.191)	(0.256)	(0.258)	(0.000)	(0.000)	(0.170)
Northern Italy	0.667	0.657	0.800	0.740	0.467	0.700	0.500	0.729
	(0.485)	(0.477)	(0.403)	(0.441)	(0.516)	(0.483)	(0.527)	(0.445)
Central Italy	0.111	0.101	0.050	0.100	0.133	0.200	0.300	0.099
	(0.323)	(0.303)	(0.219)	(0.302)	(0.352)	(0.422)	(0.483)	(0.299)
Southern Italy	0.222	0.242	0.150	0.160	0.400	0.100	0.200	0.172
	(0.428)	(0.431)	(0.359)	(0.368)	(0.507)	(0.316)	(0.422)	(0.377)
Observations	18	99	80	100	15	10	10	845
B) Treated								
Female	0.489	0.560	0.565	0.714	0.545	0.286	0.630	0.597
	(0.506)	(0.500)	(0.500)	(0.454)	(0.506)	(0.488)	(0.492)	(0.491)
Age	18.174	18.421	18.645	18.570	17.970	19.333	16.000	17.744
	(1.889)	(2.168)	(1.959)	(1.890)	(2.352)	(1.366)	(1.519)	(2.028)
Born in Italy	0.783	0.975	0.925	0.989	0.939	1.000	0.963	0.950
	(0.417)	(0.158)	(0.265)	(0.103)	(0.242)	(0.000)	(0.192)	(0.218)
Northern Italy	0.717	0.570	0.567	0.606	0.636	0.429	0.889	0.640
	(0.455)	(0.498)	(0.499)	(0.491)	(0.489)	(0.535)	(0.320)	(0.480)
Central Italy	0.130	0.127	0.149	0.149	0.152	0.143	0.074	0.173
	(0.341)	(0.335)	(0.359)	(0.358)	(0.364)	(0.378)	(0.267)	(0.379)
Southern Italy	0.152	0.304	0.284	0.245	0.212	0.429	0.037	0.187
	(0.363)	(0.463)	(0.454)	(0.432)	(0.415)	(0.535)	(0.192)	(0.390)
Observations	46	79	67	94	33	7	27	883

Notes: Standard deviations in parentheses.

Table D.22: Students' attrition in endline: Comparison with respondents reaching next block in endline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
A) Control							
Female	0.143	-0.105	0.056	-0.015	0.443**	-0.356	-0.050
Age	0.233	-0.715**	0.280	0.424	1.133	-1.000	-0.229
Born in Italy	-0.217***	-0.023	0.032	-0.003	-0.067	0.000	0.030
Northern Italy	0.010	-0.143**	0.060	0.273**	-0.233	0.200	-0.229
Central Italy	0.010	0.051	-0.050	-0.033	-0.067	-0.100	0.201**
Southern Italy	-0.020	0.092	-0.010	-0.240**	0.300	-0.100	0.028
Observations	18	99	80	100	15	10	10
B) Treated							
Female	-0.071	-0.005	-0.150*	0.169*	0.260	-0.344	0.033
Age	-0.247	-0.224	0.075	0.600	-1.364	3.333***	-1.744***
Born in Italy	-0.192***	0.049	-0.064**	0.050	-0.061	0.037	0.013
Northern Italy	0.148	0.002	-0.039	-0.030	0.208	-0.460***	0.249***
Central Italy	0.004	-0.023	0.000	-0.003	0.009	0.069	-0.099
Southern Italy	-0.152*	0.020	0.039	0.033	-0.216	0.392***	-0.150**
Observations	46	79	67	94	33	7	27
C) Diff-in-Diff							
Female	-0.214	0.100	-0.206	0.184	-0.183	0.012	0.082
Age	-0.480	0.491	-0.205	0.176	-2.497	4.333	-1.514
Born in Italy	0.025	0.072	-0.096	0.053	0.006	0.037	-0.017
Northern Italy	0.138	0.146	-0.099	-0.303	0.441	-0.660	0.478
Central Italy	-0.006	-0.074	0.050	0.031	0.075	0.169	-0.300
Southern Italy	-0.131	-0.072	0.049	0.273	-0.516	0.492	-0.178
Observations	64	178	147	194	48	17	37

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who reached the next block, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

Table D.23: Students' attrition in endline: Comparison with respondents completing the endline survey

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
A) Control							
Female	0.117	-0.026	0.078	0.022	0.037	-0.405***	-0.050
Age	0.126	-0.106	0.609**	0.328	-0.096	-1.229*	-0.229
Born in Italy	-0.248***	-0.031	-0.008	-0.040**	-0.037	0.030	0.030
Northern Italy	-0.062	-0.072	0.071	0.011	-0.262**	-0.029	-0.229
Central Italy	0.012	0.002	-0.049	0.001	0.034	0.101	0.201**
Southern Italy	0.051	0.071*	-0.022	-0.012	0.228**	-0.072	0.028
Observations	18	99	80	100	15	10	10
B) Treated							
Female	-0.108	-0.037	-0.032	0.117**	-0.052	-0.311*	0.033
Age	0.430	0.677***	0.901***	0.826***	0.226	1.590*	-1.744***
Born in Italy	-0.168***	0.025	-0.025	0.039*	-0.011	0.050	0.013
Northern Italy	0.078	-0.070	-0.073	-0.033	-0.004	-0.211	0.249***
Central Italy	-0.043	-0.047	-0.024	-0.024	-0.022	-0.030	-0.099
Southern Italy	-0.035	0.117**	0.097*	0.058	0.025	0.242	-0.150**
Observations	46	79	67	94	33	7	27
C) Diff-in-Diff							
Female	-0.225	-0.011	-0.111	0.095	-0.089	0.094	0.082
Age	0.304	0.784	0.293	0.498	0.322	2.819	-1.514
Born in Italy	0.081	0.056	-0.017	0.080	0.026	0.020	-0.017
Northern Italy	0.140	0.002	-0.144	-0.044	0.259	-0.182	0.478
Central Italy	-0.055	-0.048	0.025	-0.025	-0.056	-0.131	-0.300
Southern Italy	-0.085	0.046	0.118	0.069	-0.203	0.313	-0.178
Observations	64	178	147	194	48	17	37

Notes: Panels A and B report the differences in means between the respondents who reached the reported blocks and the respondents who completed the survey, for subjects in the control and treated group, respectively. Panel C report the differences between differences in means, between treated and control. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. °, °°, °°° denote significance at the 10%, 5%, and 1% levels, respectively, after implementing a Bonferroni correction for multiple hypotheses testing with six hypotheses.

E Descriptive Results

E.1 Teachers' descriptive results

Table E.1: Teachers' teaching of climate change in the school year 2019-2020

Topic	Mean	Std. dev.	N
Panel A: The science of climate change			
Measurement of land and ocean temperatures	0.098	0.298	1914
Climate models	0.051	0.221	1904
The difference between climate and weather	0.120	0.325	1928
The carbon cycle	0.073	0.260	1913
Climate changes in human history	0.101	0.302	1914
The greenhouse effect	0.164	0.370	1941
Greenhouse gases	0.126	0.332	1933
The Keeling curve	0.006	0.076	1894
Increase in temperatures	0.146	0.353	1930
Panel B: The impacts of climate change			
Ocean warming	0.137	0.344	1928
Changes in rainfall and snowfall	0.100	0.299	1909
Droughts	0.099	0.298	1914
Flood and landslides	0.112	0.316	1927
Extreme weather events	0.086	0.281	1910
Reduction in snow cover	0.055	0.227	1904
Melting of glaciers	0.149	0.356	1924
Reduction of sea ice	0.051	0.221	1903
Thawing of permafrost	0.068	0.252	1907
Sea level rise	0.127	0.333	1918
Ocean acidification	0.040	0.197	1904
Human migrations	0.091	0.288	1927
Panel C: Solutions to climate change			
How to calculate your carbon emissions	0.035	0.184	1900
Reducing your environmental impact	0.140	0.347	1931
Climate adaptation at the individual level	0.051	0.221	1903
Climate adaptation at the societal level	0.052	0.221	1898
Contact of humans with animal diseases	0.040	0.196	1901
Panel D: Economic measures to mitigate climate change			
Command and control	0.036	0.186	1902
Environmental subsidies	0.012	0.110	1893
Carbon taxes	0.015	0.123	1896
International climate negotiations	0.073	0.260	1904
Other topic	0.036	0.187	1903
No topic	0.069	0.254	868

Table E.2: Teachers' climate literacy

	Correct response (%)	Do not know (%)
Mean	67.971	16.283
Std. dev.	18.539	15.532
None	0.445	31.491
1/6	1.929	48.257
2/6	6.194	14.318
3/6	16.951	3.895
4/6	36.424	1.261
5/6	31.380	0.593
All	6.677	0.185
N	2696	2696

Notes: The variable "Correct response" is the percentage of correct responses given by the teacher, that is total number of correct responses divided by six questions. The variable "Do not know" is the percentage of "I do not know" responses, that is total number of "I do not know" divided by six questions.

Table E.3: Teachers' perceived preparedness

	Mean	Std. Dev.	N
Panel A: Informed on climate change			
Not at all informed	0.005	0.069	13
Little informed	0.356	0.479	958
Quite informed	0.592	0.492	1594
Very informed	0.048	0.213	128
Panel B: Informed on economic policies			
Not at all informed	0.073	0.260	190
Little informed	0.624	0.485	1631
Quite informed	0.276	0.447	722
Very informed	0.028	0.164	72
Panel C: Importance of staying informed on economic policies			
Not at all important	0.001	0.028	2
Little important	0.011	0.106	30
Quite important	0.490	0.500	1282
Very important	0.498	0.500	1304

Notes: Panel A refers to the question "There are problems or issues about which we feel we have all the information we need (...), and others about which we wish we had more information than we currently have. In this regard, how do you feel about the issue of climate change?". "Not at all informed" is a dummy variable equal to 1 if the respondent feels not at all informed, 0 otherwise. "Little informed" is a dummy variable equal to 1 if the respondent feels little informed, 0 otherwise. "Quite informed" is a dummy variable equal to 1 if the respondent feels quite informed, 0 otherwise. "Very informed" is a dummy variable equal to 1 if the respondent feels very informed, 0 otherwise. Panel B refers to the question "How informed do you consider yourself to be on economic policies?". "Not at all informed" is a dummy variable equal to 1 if the respondent considers herself to be not at all informed, 0 otherwise. "Little informed" is a dummy variable equal to 1 if the respondent considers herself to be little informed, 0 otherwise. "Quite informed" is a dummy variable equal to 1 if the respondent considers herself to be quite informed, 0 otherwise. "Very informed" is a dummy variable equal to 1 if the respondent considers herself to be very informed, 0 otherwise. Panel C refers to the question "How important do you think it is to stay informed on economic policies?" "Not at all important" is a dummy variable equal to 1 if the respondent thinks that it is not at all important, 0 otherwise. "Little important" is a dummy variable equal to 1 if the respondent thinks that it is little important, 0 otherwise. "Quite important" is a dummy variable equal to 1 if the respondent thinks that it is quite important, 0 otherwise. "Very important" is a dummy variable equal to 1 if the respondent thinks that it is very important, 0 otherwise. N is the number of observations.

Table E.4: Teachers' beliefs about climate change

	Mean	Std. dev.	N
Panel A: Climate change existence			
Teachers' own beliefs	92.070	13.710	2653
Scientists' beliefs (min. %)	56.024	31.332	2641
Scientists' beliefs (max. %)	84.918	20.055	2620
Italian citizens' beliefs (min. %)	49.107	25.987	2603
Italian citizens' beliefs (max. %)	77.319	19.693	2611
Panel B: Anthropogenic climate change			
Teachers' own beliefs	87.773	14.179	2666
Scientists' beliefs (min. %)	62.176	27.949	2375
Scientists' beliefs (max. %)	85.940	17.261	2378
Italian citizens' beliefs (min. %)	53.033	25.374	2429
Italian citizens' beliefs (max. %)	78.836	18.689	2445

Notes: Panel A refers to the existence of climate change. The variable "Teachers' own beliefs" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is a currently existing and ongoing phenomenon?" The variables "Scientists' beliefs (min. %)" and "Scientists' beliefs (max. %)" refer to the question "To your knowledge, what percentage (between 0% and 100%) of scientists (climatologists) believe that climate change is a currently existing and ongoing phenomenon? If you are not sure you can indicate a minimum and maximum percentage." The variables "Italian citizens' beliefs (min. %)" and "Italian citizens' beliefs (max. %)" refer to the question "As far as you know, what percentage of Italians (between 0% and 100%) believe that climate change is a currently existing and ongoing phenomenon? If you are not sure you can indicate a minimum and maximum percentage." Panel B refers to the potential causes of climate change among the teachers that believe in the existence of climate change. The variable "teachers' own beliefs" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is caused primarily by human activities and behaviors?" The variables "Scientists' beliefs (min. %)" and "Scientists' beliefs (max. %)" refer to the question "As far as you know, among scientists (climatologists) who believe in the existence of climate change, what percentage (between 0% and 100%) believe that climate change is caused mainly by human activities and behavior? If you are not sure you can indicate a minimum and maximum percentage." The variables "Italian citizens' beliefs (min. %)" and "Italian citizens' beliefs (max. %)" refer to the question "As far as you know, among Italians who believe in the existence of climate change, what percentage (between 0% and 100%) believe that climate change is mainly caused by human activities and behaviors? If you are not sure you can indicate a minimum and maximum percentage." N is the number of observations.

Table E.5: Teachers' concerns about climate change impacts

	Very low		Low		Medium		High		Very high		
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	N
Climate change	0.001	0.028	0.029	0.168	0.419	0.494	0.416	0.493	0.134	0.341	2543
Plants	0.009	0.095	0.067	0.250	0.313	0.464	0.430	0.495	0.180	0.385	2323
Animals	0.002	0.046	0.027	0.161	0.274	0.446	0.448	0.497	0.249	0.432	2325
Human beings	0.005	0.069	0.027	0.161	0.216	0.412	0.445	0.497	0.308	0.462	2328
Children	0.003	0.055	0.016	0.126	0.144	0.351	0.367	0.482	0.470	0.499	2291
Own children	0.005	0.070	0.021	0.145	0.161	0.368	0.370	0.483	0.443	0.497	1640
Italians	0.010	0.102	0.060	0.237	0.355	0.479	0.413	0.492	0.162	0.368	2201
Own self	0.022	0.146	0.132	0.339	0.400	0.490	0.308	0.462	0.139	0.346	2209
Own health	0.016	0.127	0.115	0.319	0.366	0.482	0.314	0.464	0.189	0.392	2244
Own lifestyle	0.056	0.229	0.319	0.466	0.379	0.485	0.184	0.388	0.062	0.242	2196
Own future	0.019	0.138	0.163	0.369	0.414	0.493	0.275	0.446	0.130	0.336	2221
Future generations	0.002	0.047	0.014	0.117	0.115	0.319	0.336	0.472	0.533	0.499	2294
The future of the Planet	0.017	0.131	0.031	0.173	0.110	0.313	0.266	0.442	0.575	0.494	2293

Notes: The variable "Climate change" refers to the question "How concerned are you about climate change?". The other variables (e.g., "Plants", "Animals") refer to the question "how concerned are you about the consequences of global warming and climate change on that category?" "Very low" is a dummy variable equal to 1 if the respondent has very low concern, 0 otherwise. "Low" is a dummy variable equal to 1 if the respondent has low concern, 0 otherwise. "Medium" is a dummy variable equal to 1 if the respondent has medium concern, 0 otherwise. "High" is a dummy variable equal to 1 if the respondent has high concern, 0 otherwise. "Very high" is a dummy variable equal to 1 if the respondent has very high concern, 0 otherwise.

Table E.6: Teachers' eating habits

	Past behavior			Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Panel A: Buying locally produced food						
Multiple times per week	0.438	0.496	2632	0.547	0.498	2117
Once per week	0.325	0.469	2632	0.267	0.442	2117
Every two weeks	0.071	0.256	2632	0.073	0.261	2117
Once per month	0.108	0.310	2632	0.074	0.262	2117
Once per year	0.032	0.177	2632	0.020	0.141	2117
Never	0.026	0.159	2632	0.018	0.135	2117
Panel B: Buying organic food						
Multiple times per week	0.316	0.465	2579	0.391	0.488	2081
Once per week	0.292	0.455	2579	0.278	0.448	2081
Every two weeks	0.100	0.301	2579	0.106	0.308	2081
Once per month	0.174	0.379	2579	0.138	0.345	2081
Once per year	0.044	0.206	2579	0.026	0.160	2081
Never	0.073	0.260	2579	0.060	0.238	2081
Panel C: Consuming meat						
Multiple times per week	0.428	0.495	2609	0.323	0.468	2106
Once per week	0.396	0.489	2609	0.463	0.499	2106
Every two weeks	0.079	0.270	2609	0.099	0.299	2106
Once per month	0.044	0.205	2609	0.057	0.231	2106
Once per year	0.007	0.083	2609	0.010	0.099	2106
Never	0.046	0.209	2609	0.048	0.214	2106

Notes: The table refers to the question "Now think about your food shopping habits. For each of the behaviors listed below: Buying locally produced food ('zero-kilometer' products), buying organic food, and consuming meat, reflect on 2019 and indicate how often you engaged in that behavior during the course of 2019. Look ahead to 2021 and indicate how often you think you will engage in that behavior during the course of 2021." N is the number of observations.

Table E.7: Teachers' traveling habits

	Past behavior			Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Panel A: Driving (km)						
0	0.067	0.250	2689	0.046	0.210	2751
1-500	0.142	0.349	2689	0.154	0.361	2751
501-1000	0.154	0.361	2689	0.170	0.375	2751
1001-5000	0.258	0.437	2689	0.267	0.443	2751
5001-10000	0.191	0.393	2689	0.203	0.402	2751
>10000	0.189	0.391	2689	0.160	0.366	2751
Number of passengers	1.884	0.939	2473	1.895	0.946	2604
Panel B: Flying						
Continental flights	0.439	0.496	2715	0.387	0.487	2836
Intercontinental flights	0.089	0.285	2706	0.115	0.319	2825

Notes: Panel A "Past behavior" and "Future behavior" refer to traveling by car in 2019 and 2021, respectively, and to the question "Now think about your habits regarding traveling by car. Reflect on 2019 and look ahead to 2021, then answer the following questions. Approximately how many kilometers did you drive in 2019? And how many kilometers do you expect to drive in 2021? If you don't drive or usually don't travel by car, select zero." The variable "Number of passengers" refers to the question "During 2019, including yourself, how many people typically traveled in your car on a typical trip?" "In 2021, including yourself, how many people do you expect will travel by car with you on a typical trip?" Panel B - Past behavior refers to air travel in 2019. "Continental flights" is a dummy variable equal to 1 if the respondent took at least one domestic or continental (i.e., within Europe) flight in 2019, 0 otherwise. "Intercontinental flights" is a dummy variable equal to 1 if the respondent took at least one intercontinental flight (i.e., to/from non-European continents) in 2019, 0 otherwise. Panel B - Future behavior refers to air travel in 2021. The variable "Continental flights" is a dummy variable equal to 1 if the respondent expects to take at least one domestic or continental (i.e., within Europe) flight in 2021, 0 otherwise. The variable "Intercontinental flights" is a dummy variable equal to 1 if the respondent expects to take at least one intercontinental flights (i.e., to/from non-European continents) in 2021, 0 otherwise. N is the number of observations.

Table E.8: Teachers' climate-friendly behaviors

	Panel A: Past behavior (yes/no)			Panel B: Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Avoiding eating meat for environmental reasons	0.473	0.499	2631	58.648	28.223	2743
Buying from companies fighting climate change	0.684	0.465	2611	71.640	23.245	2748
Paying attention to products' environmental impact	0.877	0.328	2624	79.979	19.455	2748
Supporting environmental organizations	0.316	0.465	2595	49.209	29.859	2646
Signing climate change petitions	0.590	0.494	122	69.669	28.134	2682
Participating in climate demonstrations	0.375	0.486	120	55.714	31.418	2631
Buying renewable energy	0.352	0.480	122	64.520	28.600	2660
Buying solar panels	0.197	0.399	122	46.329	34.397	2554
Buying hybrid/electric vehicles	0.187	0.391	123	54.144	33.095	2586

Notes: Panel A refers to whether the respondent has adopted in the past the behavior indicated in each row of the panel. Panel B refers to the probaility between 0% and 100% of adopting in the future the behavior indicated in each row of the panel. N is the number of observations.

Table E.9: Teachers' norms and subjective probability on climate-friendly behavior

	Mean	Std. dev.	N
Panel A: 80% Italians			
Avoiding buying meat	55.119	30.577	2601
Avoiding car use	60.290	29.619	2445
Avoiding flying	59.901	30.142	2392
Signing climate change petitions	57.709	29.000	2424
Buying hybrid/electric vehicles	62.351	27.664	2390
Panel B: 20% Italians			
Avoiding buying meat	56.718	28.959	2502
Avoiding car use	57.473	27.499	2424
Avoiding flying	57.395	29.223	2365
Signing climate change petitions	55.205	29.586	2360
Buying hybrid/electric vehicles	56.522	28.258	2356
Panel C: 80% World population			
Avoiding buying meat	59.429	30.368	2435
Avoiding car use	61.710	29.639	2387
Avoiding flying	61.046	30.596	2343
Signing climate change petitions	59.186	28.594	2341
Buying hybrid/electric vehicles	62.260	28.089	2347
Panel D: 20% World population			
Avoiding buying meat	57.252	28.158	2412
Avoiding car use	57.911	27.193	2369
Avoiding flying	57.659	28.841	2332
Signing climate change petitions	55.307	29.280	2307
Buying hybrid/electric vehicles	56.121	27.873	2324

Notes: This table refers to the question "For each behavior, imagine each of the following scenarios: 80% of the Italian/world population adopts the behavior. 20% of the Italian/world population adopts the behavior." "What is the probability (between 0% and 100%) that you would adopt each of the following behaviors in each of the scenarios indicated?" where the behaviors are avoiding buying meat, avoiding car use, avoiding flying, signing climate change petitions, and buying hybrid/electric vehicles. N is the number of observations.

Table E.10: Teachers' subjective probability of others' climate-friendly behavior

	Panel A: % Italians			Panel B: % World population		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Avoiding buying meat	36.820	20.658	2611	37.177	21.775	2586
Avoiding car use	34.705	21.938	2597	36.286	22.693	2568
Avoiding flying	35.897	23.319	2568	34.411	23.723	2543
Signing climate change petitions	50.776	24.403	2489	50.830	24.564	2460
Buying hybrid/electric vehicles	52.325	23.776	2493	51.880	24.510	2476

Notes: This table refers to the question "In your opinion, what percentage (between 0% and 100%) of the Italian and world population will adopt each of the following behaviors: Avoiding buying meat, avoiding car use, avoiding flying, signing climate change petitions, and buying hybrid/electric vehicles?" N is the number of observations.

Table E.11: Teachers' opinion on behaviors' perceived effectiveness in fighting climate change

	Mean	Std. dev.	N
Avoiding eating meat for environmental reasons	7.016	2.549	2686
Buying from companies fighting climate change	7.898	2.043	2692
Paying attention to products' environmental impact	8.398	1.741	2684
Supporting environmental organizations	6.063	2.716	2608
Signing climate change petitions	6.027	2.846	2617
Participating in climate demonstrations	5.650	2.849	2593
Buying renewable energy	7.993	2.167	2655
Buying solar panels	7.619	2.578	2612
Buying hybrid/electric vehicles	7.518	2.552	2639
Buying locally produced food	8.722	1.680	2704
Buying organic food	7.419	2.448	2666
Avoiding car use	8.063	2.153	2679
Avoiding flying	7.598	2.623	2651

Notes: This table refers to the question "In your opinion, which of these individual behaviors are more or less effective in combating climate change? Please rate the effectiveness of each behavior using a scale from 0 to 10, where 0 indicates the behavior is completely ineffective and 10 indicates the behavior is extremely effective." N is the number of observations.

Table E.12: Teachers' support for climate policies

	Mean	Std. dev.	N
Energy efficiency fund	81.056	19.060	2457
CO_2 regulation	83.535	18.479	2448
International treaty	81.524	20.757	2433
Cap and trade	61.348	30.955	2275
Fuel-efficient vehicle regulation	83.218	19.906	2426
Combustion engine vehicle bans	79.571	23.867	2395
Nuclear power plants	30.827	30.953	2256
Renewable energy research funds	88.345	16.394	2420
Green purchase subsidies	87.690	16.617	2418
Tax and dividend approach	61.966	29.148	2320

Notes: This table shows the respondent's support for different climate policies on a scale between 0 and 100, where 0 is minimum support and 100 is maximum support. The variable "Energy efficiency fund" refers to the creation of a public fund to support the construction of energy-efficient buildings and to promote methods and behaviors aimed at reducing energy use by citizens. The variable "CO_2 regulation" refers to the regulation of carbon dioxide as a pollutant. The variable "International treaty" refers to the signing of an international treaty that requires Italy to reduce its carbon dioxide emissions by 90% compared to 1990 by 2050. The variable "Cap and trade" refers to the creation of a new international market that allows companies to buy and sell rights to emit greenhouse gases, considered the main cause of global warming. The variable "Fuel-efficient vehicle regulation" refers to the requirement that automakers produce more fuel-efficient cars, trucks, and SUVs. The variable "Combustion engine vehicle bans" refers to the ban on the sale of fossil fuel vehicles from 2035. The variable "Nuclear power plants" refers to the support for the construction of nuclear power plants. The variable "Renewable energy research funds" refers to an increase in funding for renewable energy sources' research, such as solar and wind energy. The variable "Green purchase subsidies" refers to the introduction of tax incentives for those who purchase energy-efficient vehicles or solar panels. The variable "Tax and dividend approach" refers to an increase in taxes on gasoline and other carbon-intensive goods, and returns the tax revenue equally to all taxpayers. N is the number of observations.

Table E.13: Teachers' opinion on policies' perceived effectiveness and distributional effects

	Low		Medium		High		Do Not Know		
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	N
Panel A: Fossil fuel vehicle circulation ban									
Greenhouse gas emissions reduction	0.073	0.260	0.327	0.469	0.576	0.494	0.025	0.156	2213
Local pollution reduction	0.035	0.184	0.183	0.387	0.764	0.425	0.017	0.131	2185
Regressive effects minimization	0.271	0.445	0.279	0.449	0.121	0.326	0.328	0.470	2026
Panel B: Renewable energy subsidies									
Greenhouse gas emissions reduction	0.038	0.190	0.342	0.474	0.597	0.491	0.024	0.153	2180
Local pollution reduction	0.052	0.222	0.349	0.477	0.572	0.495	0.028	0.164	2162
Regressive effects minimization	0.154	0.361	0.340	0.474	0.262	0.440	0.244	0.429	2015
Panel C: Carbon taxes									
Greenhouse gas emissions reduction	0.176	0.381	0.368	0.482	0.323	0.468	0.133	0.340	2146
Local pollution reduction	0.191	0.393	0.375	0.484	0.305	0.460	0.129	0.336	2117
Regressive effects minimization	0.290	0.454	0.229	0.420	0.107	0.309	0.375	0.484	1989

Notes: Panels A, B, and C refer, respectively, to the respondent's opinion on the effectiveness of (A) a ban on the circulation of fossil fuel vehicles from 2035, (B) renewable energy subsidies, and (C) carbon taxes in achieving three objectives: (i) greenhouse gas emissions reduction; (ii) local pollution reduction; and (iii) minimization of regressive effects on disadvantaged families. The levels of effectivenes are low, medium, or high. "Do Not Know" denotes the respondent selected the "I do not know" option. N is the number of observations.

Table E.14: Teachers' opinion on the use of revenues from global taxation of carbon emissions

	Mean	Std. dev.	N
Reducing labor taxes in Italy	0.069	0.254	2318
National climate fund in Italy	0.193	0.395	2318
Domestic carbon dividends	0.030	0.170	2318
Global climate fund for developing economies	0.086	0.280	2318
Global climate fund for all countries	0.402	0.490	2318
International carbon dividends	0.020	0.139	2318
Do not know	0.201	0.401	2318

Notes: This table refers to the question "Think about the tax revenues generated from carbon emissions taxation. In your opinion, how should these revenues be used? Select the option you find most appropriate." "Reducing labor taxes in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to reduce labor taxes in Italy, 0 otherwise. "National climate fund in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to create a national climate fund aimed at reducing carbon dioxide emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy, 0 otherwise. "Domestic carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to return them in equal shares to all Italian citizens in the form of annual payments, 0 otherwise. "Global climate fund for developing economies" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in developing countries, 0 otherwise. "Global climate fund for all countries" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in all countries, 0 otherwise. "International carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon emissions taxation in Italy is to combine them with those collected by all other governments and then return them in equal shares to the citizens of all countries, including Italy, in the form of annual payments, 0 otherwise. "Do not know" is a dummy variable equal to 1 if the respondent does not know what the most appropriate use of the revenues from carbon emissions taxation is, 0 otherwise. N is the number of observations.

Table E.15: Teachers' emotions

	Mean	Std. dev.	N
Fear	6.800	2.392	2404
Defenselessness	7.274	2.238	2397
Interest/curiosity	7.370	2.328	2359
Anger/rage	5.528	3.066	2305
Sadness	7.193	2.588	2371
Hope	5.570	2.813	2322
Depression	3.716	2.928	2226
Sense of guilt	4.648	2.661	2285
Disgust	4.562	3.269	2178
Skepticism	3.946	3.097	2176
Indignation	6.275	2.945	2248
Worry	8.020	2.065	2367
Powerlessness	6.066	2.720	2274
Uncertainty	6.545	2.569	2271

Notes: This table refers to the question "What emotion(s) does thinking about climate change cause in you? Please indicate the intensity with which thinking about climate change evokes each of the emotions. Use a scale from 0 to 10, where 0 means emotion not present/not perceived and 10 means emotion extremely strong/perceived intensely." N is the number of observations.

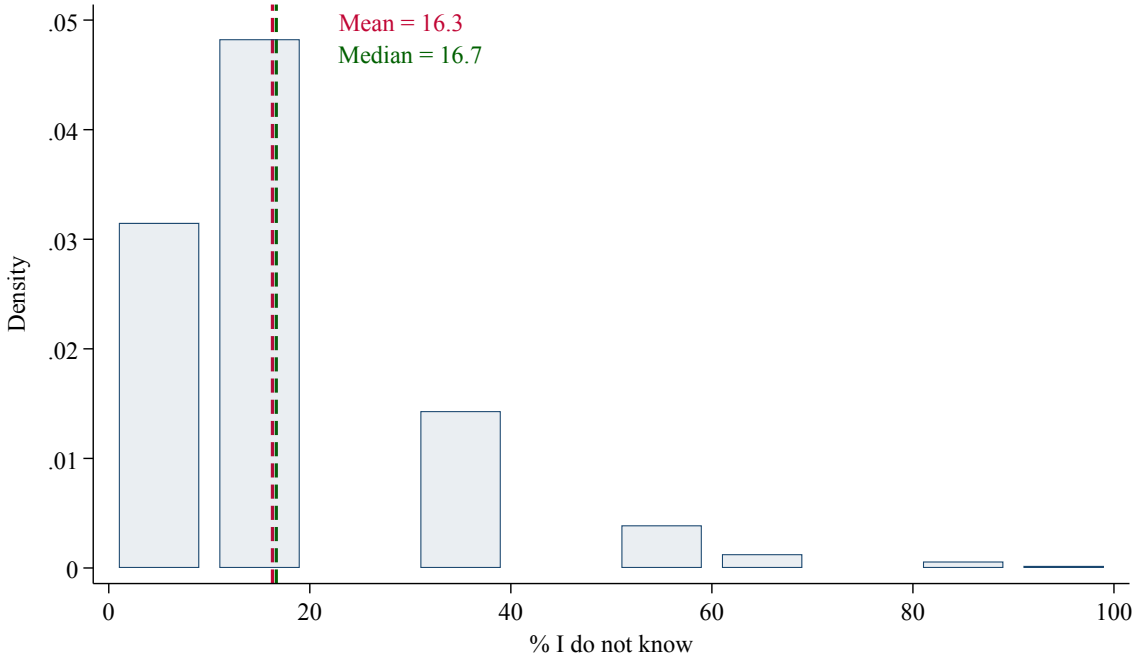

Figure E.1: Teachers' climate literacy - "I do not know"

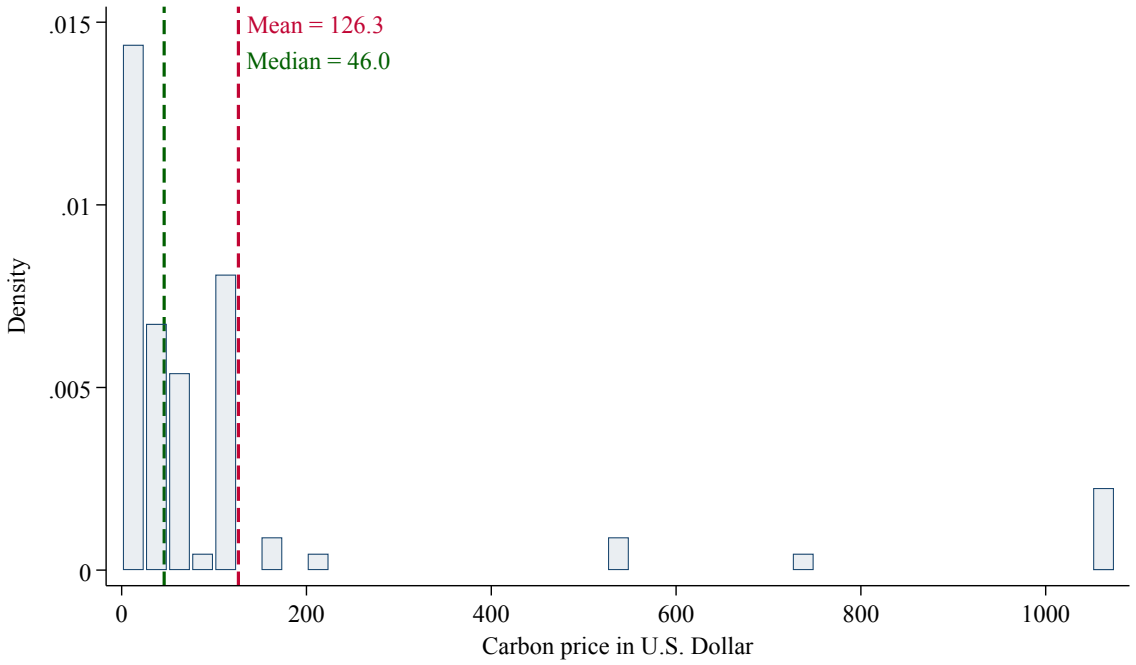

Figure E.2: Teachers' opinion on carbon price (tCO_2)

E.2 Students' descriptive results

Table E.16: Students' climate literacy

	Correct response (%)	Do not know (%)
Mean	45.451	35.758
Std. dev.	23.181	26.187
None	7.200	13.926
1/6	12.186	26.349
2/6	22.437	23.060
3/6	27.960	17.816
4/6	20.309	9.349
5/6	8.919	5.760
All	0.989	3.740

Notes: The variable "correct response" is the percentage of correct responses given by the student, that is total number of correct responses divided by six questions. The variable "Do not know" is the percentage of "I do not know" responses, that is total number of "I do not know" divided by six questions.

Table E.17: Students' perceived preparedness

	Mean	Std. dev.	N
Panel A: Informed on climate change			
Not at all informed	0.020	0.142	95
Little informed	0.311	0.463	1445
Quite informed	0.602	0.490	2794
Very informed	0.066	0.249	308
Panel B: Informed on economic policies			
Not at all informed	0.200	0.400	708
Little informed	0.585	0.493	2068
Quite informed	0.193	0.394	681
Very informed	0.023	0.149	80
Panel C: Importance of staying informed on economic policies			
Not at all important	0.011	0.103	38
Little important	0.074	0.261	260
Quite important	0.620	0.485	2189
Very important	0.295	0.456	1043

Notes: Panel A refers to the question "There are problems or issues about which we feel we have all the information we need (...), and others about which we wish we had more information than we currently have. In this regard, how do you feel about the issue of climate change?". "Not at all informed" is a dummy variable equal to 1 if the respondent feels not at all informed, 0 otherwise. "Little informed" is a dummy variable equal to 1 if the respondent feels little informed, 0 otherwise. "Quite informed" is a dummy variable equal to 1 if the respondent feels quite informed, 0 otherwise. "Very informed" is a dummy variable equal to 1 if the respondent feels very informed, 0 otherwise. Panel B refers to the question "How informed do you consider yourself to be on economic policies?". "Not at all informed" is a dummy variable equal to 1 if the respondent considers herself to be not at all informed, 0 otherwise. "Little informed" is a dummy variable equal to 1 if the respondent considers herself to be little informed, 0 otherwise. "Quite informed" is a dummy variable equal to 1 if the respondent considers herself to be quite informed, 0 otherwise. "Very informed" is a dummy variable equal to 1 if the respondent considers herself to be very informed, 0 otherwise. Panel C refers to the question "How important do you think it is to stay informed on economic policies?" "Not at all important" is a dummy variable equal to 1 if the respondent thinks that it is not at all important, 0 otherwise. "Little important" is a dummy variable equal to 1 if the respondent thinks that it is little important, 0 otherwise. "Quite important" is a dummy variable equal to 1 if the respondent thinks that it is quite important, 0 otherwise. "Very important" is a dummy variable equal to 1 if the respondent thinks that it is very important, 0 otherwise. N is the number of observations.

Table E.18: Students' climate change beliefs

	Mean	Std. dev.	N
Climate change exists	86.325	19.859	4633
Climate change is anthropogenic	85.363	18.450	4594

Notes: The variable "Climate change exists" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is a currently existing and ongoing phenomenon?". The variable "Climate change is anthropogenic" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is caused primarily by human activities and behaviors?".

Table E.19: Students' concerns about climate change impacts

	Very low		Low		Medium		High		Very high	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Climate change	0.017	0.131	0.100	0.301	0.451	0.498	0.333	0.471	0.098	0.297
Plants	0.020	0.140	0.081	0.273	0.396	0.489	0.353	0.478	0.150	0.357
Animals	0.008	0.090	0.035	0.183	0.230	0.421	0.404	0.491	0.323	0.468
Human beings	0.034	0.181	0.074	0.262	0.246	0.431	0.341	0.474	0.304	0.460
Children	0.029	0.167	0.055	0.227	0.227	0.419	0.350	0.477	0.341	0.474
Own children	0.044	0.205	0.038	0.190	0.151	0.358	0.303	0.459	0.465	0.499
Italians	0.046	0.210	0.108	0.310	0.367	0.482	0.311	0.463	0.168	0.374
Own self	0.038	0.192	0.105	0.306	0.294	0.456	0.278	0.448	0.285	0.451
Own health	0.027	0.161	0.083	0.276	0.259	0.438	0.294	0.456	0.337	0.473
Own lifestyle	0.057	0.232	0.206	0.405	0.373	0.484	0.227	0.419	0.137	0.343
Own future	0.017	0.131	0.056	0.231	0.227	0.419	0.313	0.464	0.385	0.487
Future generations	0.025	0.157	0.044	0.205	0.193	0.395	0.297	0.457	0.441	0.497
The future of the Planet	0.016	0.126	0.028	0.165	0.134	0.340	0.215	0.411	0.607	0.488

Notes: The variable "Climate change" refers to the question "How concerned are you about climate change?". The other variables (e.g., "Plants", "Animals") refer to the question "how concerned are you about the consequences of global warming and climate change on that category?" "Very low" is a dummy variable equal to 1 if the respondent has very low concern, 0 otherwise. "Low" is a dummy variable equal to 1 if the respondent has low concern, 0 otherwise. "Medium" is a dummy variable equal to 1 if the respondent has medium concern, 0 otherwise. "High" is a dummy variable equal to 1 if the respondent has high concern, 0 otherwise. "Very high" is a dummy variable equal to 1 if the respondent has very high concern, 0 otherwise.

Table E.20: Students' eating habits

	Past behavior			Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Panel A: Buying locally produced food						
Multiple times per week	0.437	0.496	4894	0.494	0.500	3857
Once per week	0.274	0.446	4894	0.256	0.437	3857
Every two weeks	0.103	0.304	4894	0.102	0.303	3857
Once per month	0.099	0.299	4894	0.080	0.271	3857
Once per year	0.026	0.160	4894	0.022	0.145	3857
Never	0.060	0.238	4894	0.047	0.211	3857
Panel B: Buying organic food						
Multiple times per week	0.281	0.450	4869	0.342	0.475	3843
Once per week	0.252	0.434	4869	0.249	0.432	3843
Every two weeks	0.127	0.332	4869	0.130	0.337	3843
Once per month	0.142	0.349	4869	0.116	0.320	3843
Once per year	0.045	0.207	4869	0.039	0.193	3843
Never	0.153	0.360	4869	0.124	0.330	3843
Panel C: Consuming meat						
Multiple times per week	0.733	0.442	4937	0.676	0.468	3880
Once per week	0.209	0.407	4937	0.246	0.431	3880
Every two weeks	0.037	0.189	4937	0.041	0.199	3880
Once per month	0.010	0.098	4937	0.017	0.130	3880
Once per year	0.003	0.051	4937	0.003	0.056	3880
Never	0.009	0.092	4937	0.016	0.127	3880

Notes: The table refers to the question "Now think about your food shopping habits. For each of the behaviors listed below: Buying locally produced food ('zero-kilometer' products), buying organic food, and consuming meat, reflect on 2019 and indicate how often you engaged in that behavior during the course of 2019. Look ahead to 2021 and indicate how often you think you will engage in that behavior during the course of 2021." N is the number of observations.

Table E.21: Students' traveling habits

	Past behavior			Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Panel A: Driving (km)						
0	0.028	0.165	3609	0.022	0.146	3452
1-500	0.027	0.163	3609	0.063	0.242	3452
501-1000	0.082	0.275	3609	0.129	0.335	3452
1001-5000	0.214	0.410	3609	0.233	0.423	3452
5001-10000	0.249	0.432	3609	0.250	0.433	3452
>10000	0.400	0.490	3609	0.304	0.460	3452
Number of passengers	3.326	1.063	5261	3.226	1.105	5242
Panel B: Flying						
Continental flights	0.438	0.496	5317	0.451	0.498	5251
Intercontinental flights	0.153	0.360	5307	0.243	0.429	5173

Notes: Panel A "Past behavior" and "Future behavior" refer to traveling by car in 2019 and 2021, respectively, and to the question "Now think about your habits regarding traveling by car. Reflect on 2019 and look ahead to 2021, then answer the following questions. Approximately how many kilometers did you drive in 2019? And how many kilometers do you expect to drive in 2021? If you don't drive or usually don't travel by car, select zero." The variable "Number of passengers" refers to the question "During 2019, including yourself, how many people typically traveled in your car on a typical trip?" "In 2021, including yourself, how many people do you expect will travel by car with you on a typical trip?" Panel B - Past behavior refers to air travel in 2019. "Continental flights" is a dummy variable equal to 1 if the respondent took at least one domestic or continental (i.e., within Europe) flight in 2019, 0 otherwise. "Intercontinental flights" is a dummy variable equal to 1 if the respondent took at least one intercontinental flight (i.e., to/from non-European continents) in 2019, 0 otherwise. Panel B - Future behavior refers to air travel in 2021. The variable "Continental flights" is a dummy variable equal to 1 if the respondent expects to take at least one domestic or continental (i.e., within Europe) flight in 2021, 0 otherwise. The variable "Intercontinental flights" is a dummy variable equal to 1 if the respondent expects to take at least one intercontinental flights (i.e., to/from non-European continents) in 2021, 0 otherwise. N is the number of observations.

Table E.22: Students' climate-friendly behaviors

	Panel A: Past behavior (yes/no)			Panel B: Future behavior		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Avoiding eating meat for environmental reasons	0.194	0.395	4956	33.806	28.427	4946
Buying from companies fighting climate change	0.424	0.494	4912	50.873	28.112	4957
Paying attention to products' environmental impact	0.667	0.471	4927	62.254	27.374	4957
Supporting environmental organizations	0.268	0.443	4922	38.416	30.415	4882
Signing climate change petitions	0.273	0.446	4864	50.326	32.817	4810
Participating in climate demonstrations	0.466	0.499	4841	53.152	33.492	4816
Buying renewable energy	0.356	0.479	4815	0.000	0.000	0
Buying solar panels	0.255	0.436	4799	48.414	35.162	4787
Buying hybrid/electric vehicles	0.169	0.374	4807	48.675	33.343	4773

Notes: Panel A refers to whether the respondent has adopted in the past the behavior indicated in each row of the panel. Panel B refers to the probability between 0% and 100% of adopting in the future the behavior indicated in each row of the panel. N is the number of observations.

Table E.23: Students' norms and subjective probability on climate-friendly behavior

	Mean	Std. dev.	N
Panel A: 80% Italians			
Avoiding buying meat	50.311	31.022	2191
Avoiding car use	58.153	28.408	2159
Avoiding flying	57.292	30.324	2131
Signing climate change petitions	57.360	30.632	2068
Buying hybrid/electric vehicles	62.241	28.149	2064
Panel B: 20% Italians			
Avoiding buying meat	41.011	29.747	2161
Avoiding car use	45.669	28.529	2143
Avoiding flying	47.464	30.800	2124
Signing climate change petitions	48.540	31.036	2053
Buying hybrid/electric vehicles	51.389	29.326	2056
Panel C: 80% Word population			
Avoiding buying meat	57.583	31.666	2153
Avoiding car use	63.644	28.781	2142
Avoiding flying	60.570	30.864	2126
Signing climate change petitions	62.263	30.338	2049
Buying hybrid/electric vehicles	65.942	28.002	2056
Panel C: 20% Word population			
Avoiding buying meat	43.685	29.290	2142
Avoiding car use	48.656	28.293	2134
Avoiding flying	50.067	30.592	2125
Signing climate change petitions	51.301	30.270	2042
Buying hybrid/electric vehicles	53.872	28.677	2054

Notes: This table refers to the question "For each behavior, imagine each of the following scenarios: 80% of the Italian/world population adopts the behavior. 20% of the Italian/world population adopts the behavior." "What is the probability (between 0% and 100%) that you would adopt or would you ask your family to adopt each of the following behaviors in each of the scenarios indicated?" where the behaviors are avoiding buying meat, avoiding car use, avoiding flying, signing climate change petitions, and buying hybrid/electric vehicles. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations.

Table E.24: Students' subjective probability of others' climate-friendly behavior

	Panel A: % Italians			Panel B: % World population		
	Mean	Std. dev.	N	Mean	Std. dev.	N
Avoiding buying meat	32.010	22.093	2134	36.365	22.963	2134
Avoiding car use	33.271	23.092	2127	36.676	23.965	2126
Avoiding flying	35.915	24.463	2127	34.593	24.585	2124
Signing climate change petitions	47.822	25.164	2069	51.276	24.676	2060
Buying hybrid/electric vehicles	49.480	23.858	2062	54.191	24.625	2065

Notes: This table refers to the question "In your opinion, what percentage (between 0% and 100%) of the Italian and world population will adopt each of the following behaviors: Avoiding buying meat, avoiding car use, avoiding flying, signing climate change petitions, and buying hybrid/electric vehicles?" The sample includes high school students in their third, fourth, and fifth years. N is the number of observations.

Table E.25: Students' opinion on behaviors' perceived effectiveness in fighting climate change

	Mean	Std. dev.	N
Avoiding eating meat for environmental reasons	4.647	3.023	4747
Buying from companies fighting climate change	6.312	2.738	4761
Paying attention to products' environmental impact	7.099	2.605	4769
Supporting environmental organizations	5.625	2.953	4732
Signing climate change petitions	5.286	3.043	4721
Participating in climate demonstrations	5.470	3.114	4717
Buying renewable energy	7.321	2.709	4752
Buying solar panels	7.012	2.942	4747
Buying hybrid/electric vehicles	6.745	3.004	4748
Buying locally produced food	7.284	2.595	4757
Buying organic food	6.380	2.861	4742
Avoiding car use	6.412	3.051	4761
Avoiding flying	6.103	3.203	4736

Notes: This table refers to the question "In your opinion, which of these individual behaviors are more or less effective in combating climate change? Please rate the effectiveness of each behavior using a scale from 0 to 10, where 0 indicates the behavior is completely ineffective and 10 indicates the behavior is extremely effective." N is the number of observations.

Table E.26: Students' support for climate policies

	Mean	Std. dev.	N
Energy efficiency fund	69.438	22.116	1939
CO_2 regulation	71.117	22.876	1931
International treaty	71.784	24.138	1929
Cap and trade	57.867	27.241	1893
Fuel-efficient vehicle regulation	72.121	23.121	1925
Combustion engine vehicle bans	64.987	27.586	1922
Nuclear power plants	37.443	30.144	1896
Renewable energy research funds	75.549	22.859	1919
Green purchase subsidies	63.054	28.288	1897
Tax and dividend approach	51.159	28.411	1903

Notes: This table shows the respondent's support for different climate policies on a scale between 0 and 100, where 0 is minimum support and 100 is maximum support. The variable "Energy efficiency fund" refers to the creation of a public fund to support the construction of energy-efficient buildings and to promote methods and behaviors aimed at reducing energy use by citizens. The variable "CO_2 regulation" refers to the regulation of carbon dioxide as a pollutant. The variable "International treaty" refers to the signing of an international treaty that requires Italy to reduce its carbon dioxide emissions by 90% compared to 1990 by 2050. The variable "Cap and trade" refers to the creation of a new international market that allows companies to buy and sell rights to emit greenhouse gases, considered the main cause of global warming. The variable "Fuel-efficient vehicle regulation" refers to the requirement that automakers produce more fuel-efficient cars, trucks, and SUVs. The variable "Combustion engine vehicle bans" refers to the ban on the sale of fossil fuel vehicles from 2035. The variable "Nuclear power plants" refers to the support for the construction of nuclear power plants. The variable "Renewable energy research funds" refers to an increase in funding for renewable energy sources' research, such as solar and wind energy. The variable "Green purchase subsidies" refers to the introduction of tax incentives for those who purchase energy-efficient vehicles or solar panels. The variable "Tax and dividend approach" refers to an increase in taxes on gasoline and other carbon-intensive goods, and returns the tax revenue equally to all taxpayers. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations.

Table E.27: Students' opinion on policies' perceived effectiveness and distributional effects

	Low		Medium		High		
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	N
Panel A: Fossil fuel vehicle circulation ban							
Greenhouse gas emissions reduction	0.106	0.308	0.406	0.491	0.487	0.500	1639
Local pollution reduction	0.062	0.242	0.307	0.461	0.631	0.483	1649
Regressive effects minimization	0.194	0.396	0.410	0.492	0.396	0.489	1456
Panel B: Renewable energy subsidies							
Greenhouse gas emissions reduction	0.088	0.283	0.451	0.498	0.462	0.499	1562
Local pollution reduction	0.107	0.310	0.446	0.497	0.447	0.497	1565
Regressive effects minimization	0.340	0.474	0.412	0.492	0.248	0.432	1377
Panel C: Carbon taxes							
Greenhouse gas emissions reduction	0.206	0.404	0.473	0.499	0.321	0.467	1395
Local pollution reduction	0.223	0.416	0.487	0.500	0.290	0.454	1395
Regressive effects minimization	0.225	0.418	0.346	0.476	0.429	0.495	1243

Notes: Panels A, B, and C refer, respectively, to the respondent's opinion on the effectiveness of (A) a ban on the circulation of fossil fuel vehicles from 2035, (B) renewable energy subsidies, and (C) carbon taxes in achieving three objectives: (i) greenhouse gas emissions reduction; (ii) local pollution reduction; and (iii) minimization of regressive effects on disadvantaged families. The levels of effectivenes are low, medium, or high. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations.

Table E.28: Students' opinion on the use of revenues from global taxation of carbon emissions

	Mean	Std. dev.	N
Reducing labor taxes in Italy	0.104	0.305	1861
National climate fund in Italy	0.202	0.402	1861
Domestic carbon dividends	0.062	0.241	1861
Global climate fund for developing economies	0.070	0.256	1861
Global climate fund for all countries	0.183	0.387	1861
International carbon dividends	0.019	0.138	1861
Do not know	0.360	0.480	1861

Notes: This table refers to the question "Think about the tax revenues generated from carbon taxation. In your opinion, how should these revenues be used? Select the option you find most appropriate." "Reducing labor taxes in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to reduce labor taxes in Italy, 0 otherwise. "National climate fund in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to create a national climate fund aimed at reducing carbon dioxide emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy, 0 otherwise. "Domestic carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to return them in equal shares to all Italian citizens in the form of annual payments, 0 otherwise. "Global climate fund for developing economies" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in developing countries, 0 otherwise. "Global climate fund for all countries" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in all countries, 0 otherwise. "International carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and then return them in equal shares to the citizens of all countries, including Italy, in the form of annual payments, 0 otherwise. "Do not know" is a dummy variable equal to 1 if the respondent does not know what the most appropriate use of the revenues from carbon taxation is, 0 otherwise. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations.

Table E.29: Students' emotions

	Mean	Std. dev.	N
Fear	5.935	2.772	4193
Defenselessness	5.632	2.886	4153
Interest/curiosity	6.695	2.500	4177
Anger/rage	5.253	3.158	4138
Sadness	5.916	3.074	4152
Hope	5.173	2.921	4137
Depression	3.095	3.044	4067
Sense of guilt	4.373	2.999	4107
Disgust	4.658	3.313	4066
Skepticism	2.898	2.816	3929
Indignation	4.683	3.176	4000
Worry	6.904	2.730	4138
Powerlessness	5.446	3.062	4057
Uncertainty	5.188	2.986	4043

Notes: This table refers to the question "What emotion(s) does thinking about climate change cause in you? Please indicate the intensity with which thinking about climate change evokes each of the emotions. Use a scale from 0 to 10, where 0 means emotion not present/not perceived and 10 means emotion extremely strong/perceived intensely." N is the number of observations.

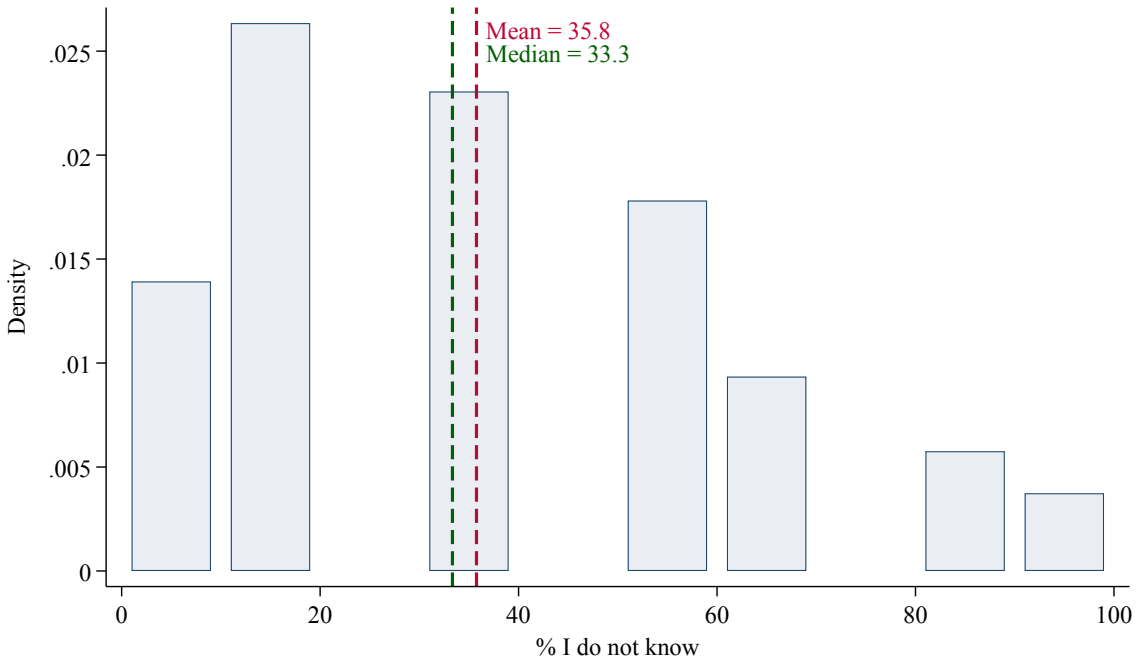

Figure E.3: Students' climate literacy - "I do not know"

F Causal Results

F.1 Teachers' causal results

Table F.1: Teachers' treatment effects on climate literacy

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Climate literacy	2.936***	5392	4.769***	5392	4.619***	5392	11.668***	5392	5.449***	5392
	(0.847)		(1.372)		(1.346)		(3.309)		(1.581)	
Do not know	-4.236***	5392	-6.883***	5392	-6.666***	5392	-16.839***	5392	-7.864***	5392
	(0.550)		(0.887)		(0.862)		(2.304)		(1.024)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variable "Climate literacy" is the percentage of correct responses given by the teacher, that is total number of correct responses divided by six questions. The variable "Do not know" is the percentage of "I do not know" responses, that is the total number of "I do not know" divided by six questions. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.2: Teachers' treatment effects on perceived preparedness

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Informed on climate change	0.126***	5386	0.205***	5386	0.199***	5386	0.501***	5386	0.234***	5386
	(0.020)		(0.032)		(0.031)		(0.072)		(0.035)	
Informed on economic policies	0.079***	5230	0.127***	5230	0.124***	5230	0.310***	5230	0.145***	5230
	(0.027)		(0.045)		(0.043)		(0.107)		(0.051)	
Importance of staying informed on economic policies	0.011	5236	0.018	5236	0.017	5236	0.044	5236	0.020	5236
	(0.017)		(0.027)		(0.026)		(0.066)		(0.031)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. "Informed on climate change" is a variable equal to 1 if the respondent feels not informed at all on climate change, 2 little informed, 3 quite informed, and 4 very informed. "Informed on economic policies" is a variable equal to 1 if the respondent considers herself not informed at all on economic policies, 2 little informed, 3 quite informed, and 4 very informed. "Importance of staying informed on economic policies" is a variable equal to 1 if the respondent thinks it is not important at all to stay informed on economic policy, 2 little important, 3 quite important, and 4 very important. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.3: Teachers' treatment effects on climate change beliefs

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Climate change exists	0.578	5306	0.939	5306	0.911	5306	2.304	5306	1.073	5306
	(0.571)		(0.926)		(0.901)		(2.278)		(1.059)	
Climate change is anthropogenic	1.836***	5332	2.981***	5332	2.890***	5332	7.294***	5332	3.408***	5332
	(0.433)		(0.706)		(0.681)		(1.730)		(0.798)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variable "Climate change exists" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is a currently existing and an ongoing phenomenon?". The variable "Climate change is anthropogenic" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is caused primarily by human activities and behaviors?". N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.4: Teachers' treatment effects on concerns about climate change impacts

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Climate change	0.000	5086	0.000	5086	0.000	5086	0.000	5086	0.000	5086
	(0.024)		(0.038)		(0.038)		(0.091)		(0.044)	
Plants	0.013	4646	0.021	4646	0.021	4646	0.048	4646	0.024	4646
	(0.040)		(0.064)		(0.063)		(0.147)		(0.072)	
Animals	0.025	4650	0.040	4650	0.039	4650	0.093	4650	0.045	4650
	(0.035)		(0.055)		(0.055)		(0.129)		(0.063)	
Human beings	-0.053	4656	-0.084	4656	-0.083	4656	-0.197	4656	-0.096	4656
	(0.041)		(0.066)		(0.065)		(0.154)		(0.075)	
Children	0.045	4582	0.072	4582	0.071	4582	0.168	4582	0.082	4582
	(0.041)		(0.065)		(0.064)		(0.152)		(0.074)	
Own children	0.018	3280	0.029	3280	0.028	3280	0.065	3280	0.032	3280
	(0.043)		(0.069)		(0.068)		(0.154)		(0.078)	
Italians	-0.036	4402	-0.057	4402	-0.056	4402	-0.132	4402	-0.065	4402
	(0.037)		(0.059)		(0.058)		(0.137)		(0.067)	
Own self	-0.051	4418	-0.083	4418	-0.081	4418	-0.192	4418	-0.094	4418
	(0.043)		(0.070)		(0.069)		(0.162)		(0.080)	
Own health	-0.091*	4488	-0.146*	4488	-0.144*	4488	-0.344*	4488	-0.166*	4488
	(0.047)		(0.076)		(0.075)		(0.180)		(0.086)	
Own lifestyle	0.053	4392	0.086	4392	0.084	4392	0.199	4392	0.097	4392
	(0.047)		(0.075)		(0.074)		(0.174)		(0.085)	
Own future	-0.009	4442	-0.015	4442	-0.015	4442	-0.035	4442	-0.017	4442
	(0.045)		(0.072)		(0.071)		(0.169)		(0.082)	
Future generations	0.033	4588	0.052	4588	0.052	4588	0.122	4588	0.060	4588
	(0.035)		(0.055)		(0.054)		(0.128)		(0.063)	
The future of the Planet	0.086**	4586	0.138**	4586	0.135**	4586	0.321**	4586	0.156**	4586
	(0.039)		(0.061)		(0.060)		(0.146)		(0.070)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. "Climate change" is a variable equal to 1 if the respondent has a very low concern, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern on climate change impacts. "Plants", "Animals", "Human beings", "Children", "Own children", "Italians", "Own self", "Own health", "Own lifestyle", "Own future", "Future generations", and "The future of the Planet" are variables equal to 1 if the respondent has very low concern, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern on the impacts of climate change on plants, animals, human beings, children, own children, Italians, own self, own health, own lifestyle, own future, future generations, and the future of the Planet, respectively. Standard errors clustered at the province level are in parentheses. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.5: Teachers' treatment effects on eating habits

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Panel A: Past behavior										
Buying local food	0.006	5264	0.009	5264	0.009	5264	0.022	5264	0.011	5264
	(0.043)		(0.069)		(0.067)		(0.165)		(0.079)	
Buying organic food	-0.079	5158	-0.127	5158	-0.123	5158	-0.305	5158	-0.145	5158
	(0.048)		(0.077)		(0.075)		(0.188)		(0.088)	
Consuming meat	0.009	5218	0.015	5218	0.015	5218	0.036	5218	0.017	5218
	(0.034)		(0.056)		(0.054)		(0.133)		(0.063)	
Panel B: Future behavior										
Buying local food	-0.012	4234	-0.020	4234	-0.019	4234	-0.047	4234	-0.022	4234
	(0.048)		(0.077)		(0.076)		(0.184)		(0.087)	
Buying organic food	-0.081	4162	-0.131	4162	-0.128	4162	-0.314	4162	-0.147	4162
	(0.050)		(0.081)		(0.079)		(0.196)		(0.091)	
Consuming meat	0.012	4212	0.019	4212	0.019	4212	0.046	4212	0.021	4212
	(0.042)		(0.068)		(0.067)		(0.165)		(0.077)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. Panel A and panel B refer to how often the respondent has engaged or will engage, respectively, in buying locally produced food, buying organic food, and consuming meat. "Buying local food," "Buying organic food," and "Consuming meat" are variables equal to 1 if the respondent engaged or will engage in this behavior multiple times per week, 2 once per week, 3 every two weeks, 4 once per month, 5 once per year, and 6 never. Standard errors clustered at the province level are in parentheses. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.6: Teachers' treatment effects on traveling habits

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Panel A: Past behavior										
Driving 0 km	-0.005	5378	-0.008	5378	-0.008	5378	-0.019	5378	-0.009	5378
	(0.008)		(0.012)		(0.012)		(0.029)		(0.014)	
Driving 1-500 km	-0.006	5378	-0.010	5378	-0.009	5378	-0.023	5378	-0.011	5378
	(0.014)		(0.023)		(0.023)		(0.056)		(0.027)	
Driving 501-1000 km	0.007	5378	0.012	5378	0.012	5378	0.029	5378	0.014	5378
	(0.019)		(0.032)		(0.031)		(0.076)		(0.036)	
Driving 1001-5000 km	0.026	5378	0.043	5378	0.041	5378	0.102	5378	0.049	5378
	(0.023)		(0.037)		(0.036)		(0.090)		(0.042)	
Driving 5001-10000 km	0.020	5378	0.032	5378	0.031	5378	0.077	5378	0.037	5378
	(0.019)		(0.031)		(0.030)		(0.074)		(0.035)	
Driving >10000 km	-0.043**	5378	-0.070**	5378	-0.067***	5378	-0.167***	5378	-0.079**	5378
	(0.016)		(0.026)		(0.025)		(0.063)		(0.030)	
Number of passengers	-0.087***	4946	-0.142***	4946	-0.137***	4946	-0.335***	4946	-0.161***	4946
	(0.030)		(0.049)		(0.047)		(0.118)		(0.056)	
Continental flights	-0.001	5430	-0.001	5430	-0.001	5430	-0.003	5430	-0.001	5430
	(0.022)		(0.035)		(0.034)		(0.084)		(0.040)	
Intercontinental flights	-0.001	5412	-0.001	5412	-0.001	5412	-0.003	5412	-0.002	5412
	(0.012)		(0.019)		(0.018)		(0.046)		(0.022)	
Panel B: Future behavior										
Driving 0 km	-0.010	5502	-0.017	5502	-0.017	5502	-0.042	5502	-0.020	5502
	(0.006)		(0.011)		(0.010)		(0.026)		(0.012)	
Driving 1-500 km	0.024	5502	0.039	5502	0.038	5502	0.096	5502	0.044	5502
	(0.014)		(0.024)		(0.023)		(0.059)		(0.027)	
Driving 501-1000 km	-0.008	5502	-0.014	5502	-0.013	5502	-0.034	5502	-0.016	5502
	(0.016)		(0.026)		(0.025)		(0.063)		(0.029)	
Driving 1001-5000 km	0.051***	5502	0.085***	5502	0.082***	5502	0.205***	5502	0.095***	5502
	(0.019)		(0.032)		(0.031)		(0.077)		(0.036)	
Driving 5001-10000 km	-0.017	5502	-0.028	5502	-0.027	5502	-0.067	5502	-0.031	5502
	(0.019)		(0.032)		(0.031)		(0.078)		(0.036)	
Driving >10000 km	-0.039***	5502	-0.065***	5502	-0.063***	5502	-0.158***	5502	-0.073***	5502
	(0.014)		(0.023)		(0.022)		(0.055)		(0.026)	
Number of passengers	-0.041	5208	-0.068	5208	-0.066	5208	-0.164	5208	-0.076	5208
	(0.026)		(0.043)		(0.042)		(0.105)		(0.048)	
Continental flights	-0.069***	5672	-0.116***	5672	-0.112***	5672	-0.282***	5672	-0.131***	5672
	(0.020)		(0.034)		(0.032)		(0.084)		(0.039)	
Intercontinental flights	-0.042***	5650	-0.070***	5650	-0.067***	5650	-0.170***	5650	-0.079***	5650
	(0.015)		(0.025)		(0.024)		(0.060)		(0.028)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. Panel A and panel B refer to traveling behavior in the past and in the future, respectively. The variables "Driving 0 km", "Driving 1-500 km", "Driving 501-1000 km", "Driving 1001-5000 km", "Driving 5001-10000 km", and "Driving >10000 km" are dummy variables equal to 1 if the respondent drove (panel A) or expects to drive (panel B), respectively, 0, 1-500, 501-1000, 1001-5000, 5001-10000, or more than 10000 kilometers, and 0 otherwise. The variable "Number of passengers" is the number of people that typically traveled in the respondent's car (panel A) or the respondent expects to travel in her car in the future (panel B) on a typical trip. "Continental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one domestic or continental (i.e., within Europe) flight, 0 otherwise. "Intercontinental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one intercontinental flight (i.e., to/from non-European continents), 0 otherwise. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.7: Teachers' treatment effects on climate-friendly behaviors

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Panel A: Past behavior										
Avoiding eating meat for environmental reasons	0.023	5262	0.037	5262	0.036	5262	0.090	5262	0.043	5262
	(0.021)		(0.034)		(0.032)		(0.080)		(0.038)	
Buying from companies fighting climate change	0.035*	5222	0.058*	5222	0.055*	5222	0.139*	5222	0.066*	5222
	(0.020)		(0.032)		(0.031)		(0.076)		(0.036)	
Paying attention to products' environmental impact	0.014	5248	0.023	5248	0.022	5248	0.055	5248	0.026	5248
	(0.015)		(0.024)		(0.024)		(0.059)		(0.028)	
Supporting environmental organizations	0.038	5190	0.062	5190	0.060	5190	0.147	5190	0.071	5190
	(0.024)		(0.039)		(0.037)		(0.092)		(0.044)	
Signing climate change petitions	-0.125	244	-0.277	244	-0.326	244	-1.567	244	-0.313	244
	(0.082)		(0.187)		(0.219)		(1.233)		(0.213)	
Participating in climate demonstrations	0.027	240	0.059	240	0.071	240	0.333	240	0.067	240
	(0.119)		(0.263)		(0.318)		(1.537)		(0.298)	
Buying renewable energy	0.016	244	0.035	244	0.044	244	0.199	244	0.040	244
	(0.094)		(0.206)		(0.258)		(1.169)		(0.234)	
Buying solar panels	0.043	244	0.094	244	0.117	244	0.532	244	0.106	244
	(0.066)		(0.145)		(0.181)		(0.865)		(0.164)	
Buying hybrid/electric vehicles	-0.026	246	-0.059	246	-0.074	246	-0.333	246	-0.067	246
	(0.059)		(0.133)		(0.166)		(0.764)		(0.150)	
Panel B: Future behavior										
Avoiding eating meat for environmental reasons	-0.023	5486	-0.039	5486	-0.038	5486	-0.095	5486	-0.044	5486
	(0.947)		(1.561)		(1.521)		(3.824)		(1.779)	
Buying from companies fighting climate change	0.754	5496	1.246	5496	1.209	5496	3.054	5496	1.415	5496
	(0.827)		(1.367)		(1.325)		(3.334)		(1.553)	
Paying attention to products' environmental impact	0.531	5496	0.878	5496	0.853	5496	2.160	5496	0.998	5496
	(0.724)		(1.197)		(1.162)		(2.927)		(1.359)	
Supporting environmental organizations	0.755	5292	1.248	5292	1.213	5292	3.041	5292	1.409	5292
	(1.253)		(2.076)		(2.018)		(5.061)		(2.346)	
Signing climate change petitions	0.356	5364	0.590	5364	0.568	5364	1.438	5364	0.669	5364
	(1.194)		(1.974)		(1.902)		(4.824)		(2.241)	
Participating in climate demonstrations	0.232	5262	0.385	5262	0.372	5262	0.932	5262	0.436	5262
	(1.105)		(1.832)		(1.769)		(4.435)		(2.073)	
Buying renewable energy	-0.201	5320	-0.330	5320	-0.319	5320	-0.799	5320	-0.374	5320
	(1.157)		(1.900)		(1.834)		(4.596)		(2.154)	
Buying solar panels	1.191	5108	1.973	5108	1.906	5108	4.815	5108	2.238	5108
	(1.269)		(2.094)		(2.026)		(5.118)		(2.380)	
Buying hybrid/electric vehicles	1.233	5172	2.036	5172	1.973	5172	5.018	5172	2.314	5172
	(1.212)		(2.016)		(1.959)		(4.980)		(2.281)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables in panel A are dummy variables equal to 1 if the respondent has adopted in the past the behavior indicated in each row of panel A, 0 otherwise. The variables in panel B refer to the probability between 0% and 100% of adopting in the future the behavior indicated in each row of panel B. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.8: Teachers' treatment effects on behaviors' perceived effectiveness in fighting climate change

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Avoiding eating meat for environmental reasons	0.233**	5372	0.386**	5372	0.372**	5372	0.933**	5372	0.439**	5372
	(0.096)		(0.161)		(0.155)		(0.389)		(0.183)	
Buying from companies fighting climate change	0.242***	5384	0.402***	5384	0.389***	5384	0.969***	5384	0.454***	5384
	(0.090)		(0.147)		(0.143)		(0.363)		(0.167)	
Paying attention to products' environmental impact	0.071	5368	0.117	5368	0.113	5368	0.284	5368	0.133	5368
	(0.065)		(0.107)		(0.104)		(0.259)		(0.121)	
Supporting environmental organizations	0.180	5216	0.297	5216	0.290	5216	0.714	5216	0.336	5216
	(0.118)		(0.194)		(0.189)		(0.464)		(0.220)	
Signing climate change petitions	0.198**	5234	0.326**	5234	0.317**	5234	0.785**	5234	0.369**	5234
	(0.097)		(0.161)		(0.156)		(0.383)		(0.182)	
Participating in climate demonstrations	0.100	5186	0.166	5186	0.161	5186	0.395	5186	0.189	5186
	(0.121)		(0.199)		(0.193)		(0.474)		(0.227)	
Buying renewable energy	0.113	5310	0.187	5310	0.180	5310	0.455	5310	0.213	5310
	(0.097)		(0.160)		(0.155)		(0.390)		(0.183)	
Buying solar panels	0.048	5224	0.079	5224	0.077	5224	0.192	5224	0.091	5224
	(0.110)		(0.182)		(0.176)		(0.439)		(0.208)	
Buying hybrid/electric vehicles	0.025	5278	0.041	5278	0.040	5278	0.100	5278	0.047	5278
	(0.109)		(0.180)		(0.173)		(0.436)		(0.204)	
Buying locally produced food	0.067	5408	0.110	5408	0.106	5408	0.267	5408	0.125	5408
	(0.071)		(0.118)		(0.113)		(0.285)		(0.134)	
Buying organic food	0.218**	5332	0.361**	5332	0.350**	5332	0.873**	5332	0.411**	5332
	(0.091)		(0.150)		(0.145)		(0.364)		(0.172)	
Avoiding car use	0.095	5358	0.157	5358	0.151	5358	0.377	5358	0.178	5358
	(0.080)		(0.130)		(0.126)		(0.313)		(0.148)	
Avoiding flying	0.303***	5302	0.500***	5302	0.482***	5302	1.198***	5302	0.569***	5302
	(0.099)		(0.163)		(0.158)		(0.388)		(0.184)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables of this table indicate the respondent's opinion on effective behaviors in fighting climate change on a scale between 0 and 10, where 0 means behavior completely ineffective and 10 extremely effective. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.9: Teachers' treatment effects on support for climate policies

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Energy efficiency fund	2.008**	4914	3.238**	4914	3.170**	4914	7.745**	4914	3.689**	4914
	(0.897)		(1.429)		(1.394)		(3.508)		(1.641)	
CO_2 regulation	1.455*	4896	2.345*	4896	2.300*	4896	5.637*	4896	2.676*	4896
	(0.802)		(1.283)		(1.254)		(3.101)		(1.470)	
International treaty	2.534***	4866	4.112***	4866	4.022***	4866	9.815***	4866	4.666***	4866
	(0.802)		(1.290)		(1.270)		(3.132)		(1.484)	
Cap and trade	3.215**	4550	5.190**	4550	5.088**	4550	12.253**	4550	5.914**	4550
	(1.583)		(2.541)		(2.484)		(5.955)		(2.916)	
Fuel-efficient vehicle regulation	1.190	4852	1.915	4852	1.877	4852	4.621	4852	2.180	4852
	(1.078)		(1.729)		(1.691)		(4.137)		(1.972)	
Combustion engine vehicle bans	1.564	4790	2.530	4790	2.471	4790	6.022	4790	2.878	4790
	(1.024)		(1.676)		(1.640)		(3.983)		(1.905)	
Nuclear power plants	-2.309**	4512	-3.733**	4512	-3.678**	4512	-8.791*	4512	-4.243**	4512
	(1.158)		(1.876)		(1.840)		(4.500)		(2.125)	
Renewable energy research funds	1.251*	4840	2.023*	4840	1.977*	4840	4.783*	4840	2.304*	4840
	(0.697)		(1.117)		(1.094)		(2.681)		(1.273)	
Green purchase subsidies	1.048	4836	1.694	4836	1.652	4836	4.031	4836	1.924	4836
	(0.743)		(1.190)		(1.160)		(2.849)		(1.356)	
Tax and dividend approach	1.991	4640	3.209	4640	3.155	4640	7.656	4640	3.653	4640
	(1.235)		(1.983)		(1.965)		(4.705)		(2.256)	

Notes: This table shows the respondent's support for different climate policies on a scale between 0 and 100, where 0 is minimum support and 100 is maximum support. "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variable "Energy efficiency fund" refers to the creation of a public fund to support the construction of energy-efficient buildings and to promote methods and behaviors aimed at reducing energy use by citizens. The variable "CO_2 regulation" refers to the regulation of carbon dioxide as a pollutant. The variable "International treaty" refers to the signing of an international treaty that requires Italy to reduce its carbon dioxide emissions by 90% compared to 1990 by 2050. The variable "Cap and trade" refers to the creation of a new international market that allows companies to buy and sell rights to emit greenhouse gases, considered the main cause of global warming. The variable "Fuel-efficient vehicle regulation" refers to the requirement that automakers produce more fuel-efficient cars, trucks, and SUVs. The variable "Combustion engine vehicle bans" refers to the ban on the sale of fossil fuel vehicles from 2035. The variable "Nuclear power plants" refers to the support for the construction of nuclear power plants. The variable "Renewable energy research funds" refers to an increase in funding for renewable energy sources' research, such as solar and wind energy. The variable "Green purchase subsidies" refers to the introduction of tax incentives for those who purchase energy-efficient vehicles or solar panels. The variable "Tax and dividend approach" refers to an increase in taxes on gasoline and other carbon-intensive goods, and returns the tax revenue equally to all taxpayers. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.10: Teachers' treatment effects on policies' perceived effectiveness and distributional effects

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Panel A: Fossil fuel vehicle circulation ban										
Greenhouse gas emissions reduction	-0.010	4228	-0.016	4228	-0.016	4228	-0.038	4228	-0.019	4228
	(0.030)		(0.049)		(0.048)		(0.111)		(0.055)	
Local pollution reduction	0.019	4218	0.031	4218	0.030	4218	0.070	4218	0.035	4218
	(0.025)		(0.040)		(0.040)		(0.093)		(0.046)	
Regressive effects minimization	0.064	2210	0.102	2210	0.099	2210	0.203	2210	0.113	2210
	(0.047)		(0.075)		(0.073)		(0.152)		(0.084)	
Panel B: Renewable energy subsidies										
Greenhouse gas emissions reduction	0.028	4168	0.045	4168	0.044	4168	0.102	4168	0.050	4168
	(0.027)		(0.044)		(0.043)		(0.102)		(0.050)	
Local pollution reduction	-0.030	4092	-0.048	4092	-0.048	4092	-0.110	4092	-0.055	4092
	(0.028)		(0.045)		(0.044)		(0.102)		(0.051)	
Regressive effects minimization	-0.036	2596	-0.059	2596	-0.057	2596	-0.124	2596	-0.065	2596
	(0.050)		(0.080)		(0.078)		(0.169)		(0.089)	
Panel C: Carbon taxes										
Greenhouse gas emissions reduction	0.100**	3390	0.154**	3390	0.151***	3390	0.339***	3390	0.174***	3390
	(0.038)		(0.059)		(0.057)		(0.127)		(0.066)	
Local pollution reduction	0.034	3336	0.053	3336	0.051	3336	0.115	3336	0.060	3336
	(0.044)		(0.068)		(0.066)		(0.147)		(0.077)	
Regressive effects minimization	0.054	1932	0.085	1932	0.082	1932	0.171	1932	0.096	1932
	(0.048)		(0.076)		(0.073)		(0.153)		(0.085)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. In panel A, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. In panel B, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. In panel C, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.11: Teachers' treatment effects on the use of revenues from carbon taxation

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Reducing labor taxes in Italy	-0.006	3234	-0.009	3234	-0.009	3234	-0.021	3234	-0.011	3234
	(0.016)		(0.026)		(0.025)		(0.057)		(0.029)	
National climate fund in Italy	-0.021	3234	-0.033	3234	-0.032	3234	-0.073	3234	-0.037	3234
	(0.026)		(0.041)		(0.040)		(0.091)		(0.046)	
Domestic carbon dividends	-0.003	3234	-0.005	3234	-0.005	3234	-0.012	3234	-0.006	3234
	(0.012)		(0.019)		(0.019)		(0.043)		(0.022)	
Global climate fund for developing economies	-0.020	3234	-0.032	3234	-0.031	3234	-0.071	3234	-0.036	3234
	(0.018)		(0.028)		(0.028)		(0.064)		(0.032)	
Global climate fund for all countries	0.047	3234	0.075	3234	0.074	3234	0.167	3234	0.085	3234
	(0.030)		(0.048)		(0.047)		(0.109)		(0.054)	
International carbon dividends	0.003	3234	0.005	3234	0.004	3234	0.010	3234	0.005	3234
	(0.010)		(0.016)		(0.015)		(0.035)		(0.018)	
Do not know	-0.045**	4636	-0.073**	4636	-0.072**	4636	-0.171**	4636	-0.083**	4636
	(0.019)		(0.031)		(0.031)		(0.072)		(0.035)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. "Reducing labor taxes in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to reduce labor taxes in Italy, 0 otherwise. "National climate fund in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to create a national climate fund aimed at reducing carbon dioxide emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy, 0 otherwise. "Domestic carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to return them in equal shares to all Italian citizens in the form of annual payments, 0 otherwise. "Global climate fund for developing economies" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in developing countries, 0 otherwise. "Global climate fund for all countries" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in all countries, 0 otherwise. "International carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and then return them in equal shares to the citizens of all countries, including Italy, in the form of annual payments, 0 otherwise. "Do not know" is a dummy variable equal to 1 if the respondent does not know what the most appropriate use of the revenues from carbon taxation is, 0 otherwise. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.12: Teachers' treatment effects on emotions

	ITT		IV Certificate		IV Course		IV Class Use		IV Future Use	
	Estimate	N	Estimate	N	Estimate	N	Estimate	N	Estimate	N
Fear	-0.061	4808	-0.097	4808	-0.095	4808	-0.225	4808	-0.110	4808
	(0.093)		(0.149)		(0.145)		(0.345)		(0.169)	
Defenselessness	-0.244***	4794	-0.390***	4794	-0.381***	4794	-0.917***	4794	-0.443***	4794
	(0.089)		(0.142)		(0.139)		(0.337)		(0.161)	
Interest/curiosity	0.025	4718	0.039	4718	0.039	4718	0.092	4718	0.045	4718
	(0.095)		(0.153)		(0.150)		(0.355)		(0.174)	
Anger/rage	0.086	4610	0.137	4610	0.135	4610	0.320	4610	0.156	4610
	(0.115)		(0.184)		(0.181)		(0.427)		(0.209)	
Sadness	0.022	4742	0.035	4742	0.034	4742	0.081	4742	0.039	4742
	(0.103)		(0.164)		(0.161)		(0.384)		(0.187)	
Hope	0.237*	4644	0.378*	4644	0.371*	4644	0.877*	4644	0.428*	4644
	(0.121)		(0.192)		(0.188)		(0.453)		(0.218)	
Depression	-0.065	4452	-0.104	4452	-0.102	4452	-0.240	4452	-0.118	4452
	(0.115)		(0.186)		(0.183)		(0.430)		(0.211)	
Sense of guilt	-0.097	4570	-0.156	4570	-0.152	4570	-0.365	4570	-0.176	4570
	(0.102)		(0.165)		(0.161)		(0.383)		(0.186)	
Disgust	0.166	4356	0.265	4356	0.263	4356	0.615	4356	0.300	4356
	(0.125)		(0.199)		(0.197)		(0.461)		(0.225)	
Skepticism	-0.224*	4352	-0.354*	4352	-0.351*	4352	-0.826*	4352	-0.403*	4352
	(0.118)		(0.190)		(0.189)		(0.445)		(0.216)	
Indignation	-0.079	4496	-0.125	4496	-0.123	4496	-0.293	4496	-0.142	4496
	(0.103)		(0.164)		(0.162)		(0.385)		(0.186)	
Worry	-0.090	4734	-0.145	4734	-0.142	4734	-0.341	4734	-0.165	4734
	(0.076)		(0.123)		(0.121)		(0.288)		(0.140)	
Powerlessness	-0.170	4548	-0.273	4548	-0.269	4548	-0.644	4548	-0.310	4548
	(0.116)		(0.186)		(0.184)		(0.441)		(0.212)	
Uncertainty	-0.211*	4542	-0.338*	4542	-0.332*	4542	-0.796*	4542	-0.384*	4542
	(0.117)		(0.188)		(0.185)		(0.445)		(0.212)	

Notes: "ITT" indicates intent-to-treat estimates and "IV" instrumental variable estimates. "IV Certificate" reports IV estimates of the effect of receiving the course certificate, "IV Course" the effect of having accessed any course material on the Moodle platform, "IV Class Use" the effect of having used the course material in class, and "IV Future Use" the effect of intending to use the course material in class in the future. The variables "Fear", "Defenselessness", "Interest/curiosity", "Anger/rage", "Sadness", "Hope", "Depression", "Sense of guilt", "Disgust", "Skepticism", "Indignation", "Worry", "Powerlessness", and "Uncertainty" are variables between 0 and 10 where 0 means emotion not present/not perceived and 10 means emotion extremely strong/perceived. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

F.2 Students' causal results

Table F.13: Students' treatment effects on climate literacy

	ITT	
	Estimate	N
Climate literacy	5.660***	2124
	(1.984)	
Do not know	-3.943**	2124
	(1.994)	

Notes: "ITT" indicates intent-to-treat estimates. The variable "Climate literacy" is the percentage of correct responses given by the student, that is total number of correct responses divided by six questions. The variable "Do not know" is the percentage of "I do not know" responses, that is the total number of "I do not know" divided by six questions. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.14: Students' treatment effects on perceived preparedness

	ITT	
	Estimate	N
Informed on climate change	0.086***	2116
	(0.031)	
Informed on economic policies	-0.074	1621
	(0.045)	
Importance of staying informed on economic policies	0.074	1400
	(0.046)	

Notes: "ITT" indicates intent-to-treat estimates. "Informed on climate change" is a variable equal to 1 if the respondent feels not informed at all on climate change, 2 little informed, 3 quite informed, and 4 very informed. "Informed on economic policies" is a variable equal to 1 if the respondent considers herself not informed at all on economic policies, 2 little informed, 3 quite informed, and 4 very informed. "Importance of staying informed on economic policies" is a variable equal to 1 if the respondent thinks it is not important at all to stay informed on economic policy, 2 little important, 3 quite important, and 4 very important. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.15: Students' treatment effects on climate change beliefs

	ITT	
	Estimate	N
Climate change exists	4.661***	2088
	(1.564)	
Climate change is anthropogenic	4.701***	2071
	(1.396)	

Notes: "ITT" indicates intent-to-treat estimates. The variable "Climate change exists" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is a currently existing and ongoing phenomenon?". The variable "Climate change is anthropogenic" refers to the question "In your personal opinion, what is the probability (between 0% and 100%) that climate change is caused primarily by human activities and behaviors?". N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.16: Students' treatment effects on concerns about climate change impacts

	ITT	
	Estimate	N
Climate change	0.041	1979
	(0.050)	
Plants	-0.007	1800
	(0.051)	
Animals	-0.036	1792
	(0.046)	
Human beings	0.068	1785
	(0.049)	
Children	0.044	1770
	(0.073)	
Own children	0.048	1272
	(0.099)	
Italians	0.013	1738
	(0.062)	
Own self	-0.008	1760
	(0.078)	
Own health	-0.015	1770
	(0.078)	
Own lifestyle	0.019	1748
	(0.052)	
Own future	-0.004	1771
	(0.051)	
Future generations	-0.023	1753
	(0.040)	
The future of the Planet	0.032	1760
	(0.048)	

Notes: "ITT" indicates intent-to-treat estimates. "Climate change" is a variable equal to 1 if the respondent has a very low concern, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern on climate change impacts. "Plants", "Animals", "Human beings", "Children", "Own children", "Italians", "Own self", "Own health", "Own lifestyle", "Own future", "Future generations", and "The future of the Planet" are variables equal to 1 if the respondent has very low concern, 2 low concern, 3 medium concern, 4 high concern, and 5 very high concern on the impacts of climate change on plants, animals, human beings, children, own children, Italians, own self, own health, own lifestyle, own future, future generations, and the future of the Planet, respectively. Standard errors clustered at the province level are in parentheses. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.17: Students' treatment effects on eating habits

	ITT	
	Estimate	N
Panel A: Past behavior		
Buying local food	-0.011	2115
	(0.080)	
Buying organic food	-0.051	2112
	(0.076)	
Consuming meat	0.005	2131
	(0.039)	
Panel B: Future behavior		
Buying local food	-0.059	1592
	(0.076)	
Buying organic food	-0.047	1593
	(0.076)	
Consuming meat	-0.047	1593
	(0.063)	

Notes: "ITT" indicates intent-to-treat estimates. Panel A and panel B refer to how often the respondent has engaged or will engage, respectively, in buying locally produced food, buying organic food, and consuming meat. "Buying local food," "Buying organic food," and "Consuming meat" are variables equal to 1 if the respondent engaged or will engage in this behavior multiple times per week, 2 once per week, 3 every two weeks, 4 once per month, 5 once per year, and 6 never. Standard errors clustered at the province level are in parentheses. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.18: Students' treatment effects on traveling habits

	ITT	
	Estimate	N
Panel A: Past behavior		
Driving 0 km	-0.026*	1569
	(0.014)	
Driving 1-500 km	-0.001	1569
	(0.013)	
Driving 501-1000 km	-0.002	1569
	(0.017)	
Driving 1001-5000 km	0.021	1569
	(0.018)	
Driving 5001-10000 km	0.023	1569
	(0.021)	
Driving >10000 km	-0.015	1569
	(0.024)	
Number of passengers	-0.098*	2319
	(0.057)	
Continental flights	0.008	1983
	(0.041)	
Intercontinental flights	-0.011	1972
	(0.026)	
Panel B: Future behavior		
Driving 0 km	-0.010	1486
	(0.010)	
Driving 1-500 km	-0.020*	1486
	(0.011)	
Driving 501-1000 km	-0.016	1486
	(0.017)	
Driving 1001-5000 km	0.023	1486
	(0.022)	
Driving 5001-10000 km	-0.005	1486
	(0.022)	
Driving >10000 km	0.029	1486
	(0.029)	
Number of passengers	-0.153***	2306
	(0.056)	
Continental flights	-0.025	2361
	(0.031)	
Intercontinental flights	-0.022	2357
	(0.033)	

Notes: "ITT" indicates intent-to-treat estimates. Panel A and panel B refer to traveling behavior in the past and in the future, respectively. The variables "Driving 0 km", "Driving 1-500 km", "Driving 501-1000 km", "Driving 1001-5000 km", "Driving 5001-10000 km", and "Driving >10000 km" are dummy variables equal to 1 if the respondent drove (panel A) or expects to drive (panel B), respectively, 0, 1-500, 501-1000, 1001-5000, 5001-10000, or more than 10000 kilometers, and 0 otherwise. The variable "Number of passengers" is the number of people that typically traveled in the respondent's car (panel A) or the respondent expects to travel in her car in the future (panel B) on a typical trip. "Continental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one domestic or continental (i.e., within Europe) flight, 0 otherwise. "Intercontinental flights" is a dummy variable equal to 1 if the respondent took (panel A) or expects to take (panel B) at least one intercontinental flight (i.e., to/from non-European continents), 0 otherwise. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.19: Students' treatment effects on climate-friendly behaviors

	ITT	
	Estimate	N
Panel A: Past behavior		
Avoiding eating meat for environmental reasons	0.008	2162
	(0.021)	
Buying from companies fighting climate change	-0.012	2131
	(0.029)	
Paying attention to products' environmental impact	-0.041**	2150
	(0.019)	
Supporting environmental organizations	-0.020	2140
	(0.024)	
Signing climate change petitions	-0.024	1753
	(0.048)	
Participating in climate demonstrations	-0.036	1738
	(0.081)	
Buying renewable energy	0.002	1739
	(0.028)	
Buying solar panels	-0.041	1729
	(0.028)	
Buying hybrid/electric vehicles	0.031*	1737
	(0.017)	
Panel B: Future behavior		
Avoiding eating meat for environmental reasons	-1.804	2161
	(1.331)	
Buying from companies fighting climate change	-0.271	2167
	(1.301)	
Paying attention to products' environmental impact	0.240	2173
	(1.463)	
Supporting environmental organizations	-3.070**	2128
	(1.539)	
Signing climate change petitions	-0.526	2121
	(2.414)	
Participating in climate demonstrations	-3.682	2114
	(3.444)	
Buying renewable energy	-0.648	1748
	(1.679)	
Buying solar panels	-2.056	2109
	(1.892)	
Buying hybrid/electric vehicles	3.857*	2099
	(2.150)	

Notes: "ITT" indicates intent-to-treat estimates. The variables in panel A are dummy variables equal to 1 if the respondent has adopted in the past the behavior indicated in each row of panel A, 0 otherwise. The variables in panel B refer to the proability between 0% and 100% of adopting in the future the behavior indicated in each row of panel B. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.20: Students' treatment effects on behaviors' perceived effectiveness in fighting climate change

	ITT	
	Estimate	N
Avoiding eating meat for environmental reasons	0.062	2105
	(0.123)	
Buying from companies fighting climate change	0.199*	2113
	(0.119)	
Paying attention to products' environmental impact	0.050	2119
	(0.114)	
Supporting environmental organizations	0.033	2097
	(0.133)	
Signing climate change petitions	-0.033	2095
	(0.148)	
Participating in climate demonstrations	-0.261	2101
	(0.273)	
Buying renewable energy	0.349**	2114
	(0.164)	
Buying solar panels	0.369*	2115
	(0.203)	
Buying hybrid/electric vehicles	0.446**	2102
	(0.204)	
Buying locally produced food	0.205	2104
	(0.126)	
Buying organic food	0.162	2104
	(0.121)	
Avoiding car use	0.154	2107
	(0.148)	
Avoiding flying	0.226	2095
	(0.151)	

Notes: "ITT" indicates intent-to-treat estimates. The variables of this table indicate the respondent's opinion on effective behaviors in fighting climate change on a scale between 0 and 10, where 0 means behavior completely ineffective and 10 extremely effective. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.21: Students' treatment effects on support for climate policies

	ITT	
	Estimate	N
Energy efficiency fund	4.065**	986
	(2.037)	
CO_2 regulation	4.609***	975
	(1.736)	
International treaty	4.264**	971
	(1.854)	
Cap and trade	0.197	962
	(1.657)	
Fuel-efficient vehicle regulation	2.612	974
	(1.973)	
Combustion engine vehicle bans	2.087	963
	(1.759)	
Nuclear power plants	-0.123	948
	(2.491)	
Renewable energy research funds	2.930	967
	(1.827)	
Green purchase subsidies	0.188	960
	(2.273)	
Tax and dividend approach	1.795	955
	(1.654)	

Notes: "ITT" indicates intent-to-treat estimates. This table shows the respondent's support for different climate policies on a scale between 0 and 100, where 0 is minimum support and 100 is maximum support. The variable "Energy efficiency fund" refers to the creation of a public fund to support the construction of energy-efficient buildings and to promote methods and behaviors aimed at reducing energy use by citizens. The variable "CO_2 regulation" refers to the regulation of carbon dioxide as a pollutant. The variable "International treaty" refers to the signing of an international treaty that requires Italy to reduce its carbon dioxide emissions by 90% compared to 1990 by 2050. The variable "Cap and trade" refers to the creation of a new international market that allows companies to buy and sell rights to emit greenhouse gases, considered the main cause of global warming. The variable "Fuel-efficient vehicle regulation" refers to the requirement that automakers produce more fuel-efficient cars, trucks, and SUVs. The variable "Combustion engine vehicle bans" refers to the ban on the sale of fossil fuel vehicles from 2035. The variable "Nuclear power plants" refers to the support for the construction of nuclear power plants. The variable "Renewable energy research funds" refers to an increase in funding for renewable energy sources' research, such as solar and wind energy. The variable "Green purchase subsidies" refers to the introduction of tax incentives for those who purchase energy-efficient vehicles or solar panels. The variable "Tax and dividend approach" refers to an increase in taxes on gasoline and other carbon-intensive goods, and returns the tax revenue equally to all taxpayers. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.22: Students' treatment effects on policies' perceived effectiveness and distributional effects

	ITT	
	Estimate	N
Panel A: Fossil fuel vehicle circulation ban		
Greenhouse gas emissions reduction	0.132**	778
	(0.055)	
Local pollution reduction	0.071	776
	(0.048)	
Regressive effects minimization	0.050	656
	(0.051)	
Panel B: Renewable energy subsidies		
Greenhouse gas emissions reduction	0.028	741
	(0.048)	
Local pollution reduction	-0.000	743
	(0.059)	
Regressive effects minimization	0.013	655
	(0.049)	
Panel C: Carbon taxes		
Greenhouse gas emissions reduction	0.080	675
	(0.061)	
Local pollution reduction	0.097*	660
	(0.054)	
Regressive effects minimization	0.115***	579
	(0.045)	

Notes: "ITT" indicates intent-to-treat estimates. In panel A, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of a ban on the circulation of fossil fuel vehicles from 2035 to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. In panel B, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of renewable energy subsidies to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. In panel C, the variable "Greenhouse gas emissions reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce greenhouse gas emissions is low, 2 if medium, and 3 if high. The variable "Local pollution reduction" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to reduce local pollution is low, 2 if medium, and 3 if high. The variable "Regressive effects minimization" is equal to 1 if the respondent's opinion on the effectiveness of carbon taxes to minimize the regressive effects on disadvantaged families is low, 2 if medium, and 3 if high. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.23: Students' treatment effects on the use of revenues from carbon taxation

	ITT	
	Estimate	N
Reducing labor taxes in Italy	-0.029	978
	(0.022)	
National climate fund in Italy	0.057**	978
	(0.027)	
Domestic carbon dividends	0.003	978
	(0.016)	
Global climate fund for developing economies	-0.020	978
	(0.020)	
Global climate fund for all countries	0.063*	978
	(0.033)	
International carbon dividends	0.004	978
	(0.009)	
Do not know	-0.078	978
	(0.055)	

Notes: "ITT" indicates intent-to-treat estimates. "Reducing labor taxes in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to reduce labor taxes in Italy, 0 otherwise. "National climate fund in Italy" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to create a national climate fund aimed at reducing carbon dioxide emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in Italy, 0 otherwise. "Domestic carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to return them in equal shares to all Italian citizens in the form of annual payments, 0 otherwise. "Global climate fund for developing economies" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in developing countries, 0 otherwise. "Global climate fund for all countries" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and use them to create an international climate fund aimed at reducing carbon emissions by investing in renewable energy sources (such as wind, solar, and hydroelectric energy) in all countries, 0 otherwise. "International carbon dividends" is a dummy variable equal to 1 if the respondent thinks that the most appropriate use of the revenues from carbon taxation in Italy is to combine them with those collected by all other governments and then return them in equal shares to the citizens of all countries, including Italy, in the form of annual payments, 0 otherwise. "Do not know" is a dummy variable equal to 1 if the respondent does not know what the most appropriate use of the revenues from carbon taxation is, 0 otherwise. The sample includes high school students in their third, fourth, and fifth years. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table F.24: Students' treatment effects on emotions

	ITT	
	Estimate	N
Fear	-0.096	1932
	(0.143)	
Defenselessness	0.006	1924
	(0.150)	
Interest/curiosity	0.224*	1922
	(0.123)	
Anger/rage	-0.189	1905
	(0.217)	
Sadness	0.010	1909
	(0.177)	
Hope	0.063	1897
	(0.208)	
Depression	-0.345*	1848
	(0.202)	
Sense of guilt	-0.147	1890
	(0.208)	
Disgust	-0.414*	1860
	(0.215)	
Skepticism	-0.377***	1811
	(0.145)	
Indignation	-0.259	1847
	(0.240)	
Worry	-0.013	1913
	(0.152)	
Powerlessness	-0.304*	1876
	(0.166)	
Uncertainty	-0.132	1865
	(0.198)	

Notes: "ITT" indicates intent-to-treat estimates. The variables "Fear", "Defenselessness", "Interest/curiosity", "Anger/rage", "Sadness", "Hope", "Depression", "Sense of guilt", "Disgust", "Skepticism", "Indignation", " Worry", "Powerlessness", and "Uncertainty" are variables between 0 and 10 where 0 means emotion not present/not perceived and 10 emotion extremely strong/perceived. N is the number of observations. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.