The Making of Civic Virtues: A School-Based Experiment in Three Countries*

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Abstract

With the rise of polarization and extremism, the question of how best to transmit civic virtues across generations is more acute than ever. In this paper, we test the hypothesis that schools can be the place for this transmission by empowering students and gathering them around concrete and democratically chosen objectives. We draw on an RCT implemented in a large sample of middle schools in three European countries. The evaluated program leads students to carry out collective citizenship projects in their immediate communities under the supervision of teachers trained in student-centered teaching methods. The program significantly increases student altruism, their political self-efficacy as well as the quality of their relationship with their classmates and their respect for the rules of school life (less sanctions and absenteeism). In all three countries, the benefits are greater for students with the highest level of altruism and interest in politics at baseline. Investments made at an early age appear to be complement to those made during adolescence for the production of civic virtues.

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1 Introduction

Even if there is no universally accepted definition, the civic sense in a society is commonly measured by the respect that citizens show to the rules of collective life, their involvement in the definition of these rules as well as the priority they give to general interest over private interests. In modern democracies, good citizenship is also commonly understood to include tolerance for the diversity of religions and political opinions as well as support for the idea of equal rights for all citizens, regardless of gender and origin. These civic virtues have long been identified as central to the stability of democratic societies and to their economic development.[1]

From the time of the ancient republics, one of the main objectives of public education has been to cultivate the civic sense of younger generations and most modern school curricula include a civic education program (Heater (2004)). Many modern democracies are nonetheless facing a rise in political and religious extremism as well as fundamental distrust in their institutions (Carothers & O'Donohue (2019)). These developments are all the more striking because they are occurring in societies whose populations have never been in school so long and never been so educated. Forms of political participation are also becoming more diverse and individualized as political issues become more complex, resulting in a widening participation gap between the more educated groups and the less educated ones (Armingeon & Schädel (2015)). The voices of the wealthiest citizens are increasingly important in debates and decision-making, far from the democratic ideal of equality of citizens in political decisions (Dalton (2017)).

Faced with these challenges, a broad movement of reform and revitalization of civic education has emerged, particularly in Europe, but there is still much to learn about how best to teach civics in societies as diverse and polarized as modern ones (European Commission (2017)). The effectiveness of civic education in schools has long been the subject of controversy, as have the most relevant teaching practices (Campbell (2019)). At a deeper level, it is not even clear whether civic sense in modern societies can be viewed as a relatively homogeneous form of social capital that can accumulate or depreciate according to the policies implemented, especially educational ones. An alternative hypothesis is that civic sense in a society reflects a deeper characterization of the norms and values that are transmitted within families, from generation to generation, in that society, without any real possibility of evolution, at least in the short run.

In this article, we show that it is possible to foster altruism, tolerance and respect for collective rules among young adolescents by helping their teachers implement a pedagogy based on student empowerment as well as on the design and implementation of concrete civic-oriented projects. These results are in line with the long-held hypothesis that schools are among the places where children can best develop their civic sense by learning to cooperate in practice around projects that they have chosen and that concern them directly (Dewey (1915); Williams (2003)). The effects of this type of learning-by-doing, however, appear to be most important for adolescents who exhibited the highest levels of altruism and other civic

[1] See Putnam (1993), Tabellini (2008) or Guiso et al. (2011). For a discussion of the different liberal and republican conceptions of civic virtue, see e.g. Burtt (1993, 2006)

virtues at baseline, in line with the idea that skill acquisition in adolescence is a complement to skills acquired earlier in childhood (Cunha & Heckman (2007)).

To reach these conclusions, our study uses a large-scale randomized experiment conducted in a sample of more than 200 middle schools in three developed countries (France, Greece and Spain), each with a different historical experience of democracy, citizenship and civic education. This intervention was designed in the aftermath of the Paris terrorist attacks in 2015 and is part of joint efforts in several European countries to promote civic spirit, religious tolerance and equal rights on the old continent.

In these schools, during the 2018-2019 school year, about 320 teachers and 6,200 grade 8 and 9 students participated in the experiment. Half of participating schools within each country were chosen at random to implement the program (called *Active Citizenship Program*, hereafter ACT). Teachers from treatment schools first attended a specific two-day training program at the beginning of the academic year, then implemented a concrete civic-oriented project with their students. Students had first to democratically elicit a project and then run it over the school year. In practice, a majority of the projects selected are designed to show solidarity and empathy towards people and students in difficulty (for example, performing a small play in a hospital or a retirement home; organizing a day to raise awareness of the problems faced by disabled people or migrants; organizing homework help for students in difficulty, etc.). Program effects are identified through pre- and post-intervention surveys that measure students' levels of altruism, tolerance, and adherence to civic values, as well as the size of their friendship networks or their confidence in their ability to understand and participate in politics (political self-efficacy). In the French context, we also rely on exhaustive administrative data on disciplinary sanctions and absenteeism to measure students' respect for the rules of collective life.

Generally speaking, the comparison of treatment and control students before and after the intervention reveals that the program has on average positive effects on students' attitudes and values as well as on the size of their friendship networks. In particular, we find a significant positive effect on altruism, as measured by the capacity to commit to helping others (through tutoring, for example) as well as a positive effect on students' political self-efficacy. In French schools, we also observe a significant decline in absenteeism and disciplinary sanctions.

In the pre-analysis plan written before the intervention, we hypothesized that the program's effects might be particularly strong on those students who were most aware of civic issues before the intervention began. In the pre-analysis plan, we also hypothesized that the effects of the program might be different across the three countries under consideration, if only because they have historically different approaches to secularism as well as different educational traditions. We tested these hypotheses using Machine Learning techniques designed to explore the heterogeneity of treatment effects. This analysis confirms that the variance of the treatment effects across beneficiaries is significantly different from zero and that the students most strongly affected by the intervention are those who were already the most altruistic and interested in politics at baseline. In contrast, the analysis reveals no systematic difference in program effects across countries, at least in the schools that volunteered to implement the program. In all three

countries, the intervention tends to improve the overall level of adolescent citizenship, but also contributes to widening the (large) citizenship gaps that existed before the intervention began.

To our knowledge, our paper is one of the very first to provide clean evidence on the causal effects of civic-specific education on students' civic outcomes as well as on the distribution of these effects across students. It contributes to long-standing and ongoing debates on the impact that civic education in schools can have on students' attitudes and values (see, e.g. Nie et al. (1996); Campbell et al. (2012); Isac et al. (2014); Manning & Edwards (2014)). It also contributes to the long-standing economic literature that explores the relationship between education and citizenship (see e.g. Milligan et al. (2004); Dee (2004); Helliwell & Putnam (2007); Oreopoulos & Salvanes (2011); Larreguy & Marshall (2017); Bandiera et al. (2019)). In most countries, civic education focuses on the knowledge of political institutions and is based on vertical teaching. The relevance of this approach is increasingly questioned, in a context where many developed countries are experiencing intense internal tensions, greater visibility of extremist views and populism, even as the general level of education of populations reaches unprecedented levels. This article suggests that an alternative pedagogy based on student empowerment, learning-by-doing and the implementation of concrete citizenship projects is capable of fostering civic virtues at low cost. The idea that learning by doing is an essential method of learning, including learning the values and behaviors that make life in society possible, goes back to Aristotle and has a very long history in both economics and philosophy (e.g., Dewey (1897); Arrow (1962); Ashraf & Bandiera (2017)).

On a broader level, we contribute to the literature that explores the formation of pro-social values and skills during youth. In line with one central assumption of Cunha & Heckman (2007), several recent studies focus on early childhood and confirm that programs that enrich young children's interactions with their environment and develop their ability to understand the perspectives of others are able to promote pro-social behaviors (Cappelen et al. (2020); Kosse et al. (2020); Alan et al. (2021)). Our article demonstrates that it is still possible to continue to develop pro-social values and skills in older children during adolescence. However, in line with another central hypothesis of Heckman and Cuhna's model, investments made during adolescence have an effect that appears to be all the more important when they concern adolescents who have already developed pro-social skills during early childhood. Insofar as the program under consideration is specifically aimed at developing the civic values and skills of adolescents, the fact that it contributes to increasing initial inequalities is a serious issue, since the equal capacity of citizens to understand and participate in the life of the city is integral to the democratic ideal. Our findings suggest that earlier implementation of civic-orientated programs, beginning well before adolescence, may be important.

2 Citizenship education: context and issues

The intervention studied in this paper is part of the *ACT project*, an Erasmus+ program funded by the European Commission. It formed part of a range of initiatives taken in Europe after the terrorist attacks

in Paris (2015), the ambition being to revitalize the civic sense of younger generations.[2] In this section, we briefly review the context in which this initiative took place, the challenges that civic education faces in this context and the mechanisms through which a reform of teaching practices may help overcome these challenges.

2.1 Political and social context: polarization, mistrust and intolerance

Like many other developed countries, the three countries where the experiment was conducted have been facing slower economic growth and high levels of unemployment for many years. The difficulties of moderate centre-right or centre-left governments in curbing economic decline have fuelled a rise in "anti-system" and "anti-elite" political movements in all three countries and a growing polarization of the political arena. The *15-M Indignados* movement in Spain, *Syriza* in Greece or the recent *Yellow Vests* movement in France have each, in their own way, challenged traditional political parties and demonstrated growing distrust of representative democracy and European institutions.

Growing political polarization is not specific to the three countries studied in this paper; it can be found in many democracies around the world (Carothers & O'Donohue (2019)). Dissatisfaction with democracy is now reaching unprecedented levels, with the proportion of citizens declaring dissatisfaction with democracy exceeding that declaring themselves satisfied in many countries (Foa et al. (2020)).

Distrust is not only directed at the traditional political leaders, but also at experts and scientists. Scientific recommendations to fight climate change (or, more recently, to fight the COVID-19 pandemic) have been met with intense resistance by a significant proportion of people, which feeds on the rise of anti-intellectualism (Gauchat (2012); Merkley & Loewen (2021)). These evolutions are all the more paradoxical and problematic as the level of education in developed societies is now reaching unprecedented levels. This casts doubt on the capacity of education (as it has developed) to ensure social cohesion. In turns, distrust of science and scientists undermines the authority of teachers and makes it more difficult to transmit knowledge and values in schools.

The rise of mistrust is accompanied by a decline in participation in elections and political parties. However, new, more individualized forms of political participation are developing, particularly via the Internet and especially among the most educated social groups. These developments contribute to increasing the participation gap between citizens of different social groups, and the democratic ideal of equal participation of citizens in the political decision-making process tends to move further away (Dalton (2017)).

The three European countries studied in this paper are also facing an influx of non-European refugees and migrants linked to the conflicts in the Middle-East as well as to the economic and political difficulties of many African countries. Combined with the recurrence of Islamic terrorist attacks, the problems posed by the reception of non-European migrants galvanizes the anti-immigration discourse of the extreme right, which has helped them come close to political power in France. In Greece, the violence of the migration

[2]The cell of terrorists responsible for the Paris attack (about 12 persons) was mostly composed of people who grew up and went to school in Europe, in Belgium and France.

crisis is also giving rise to a resurgence of the far right, even if the memory of the dictatorship (1967-1974) remains vivid, as in Spain (1939-1975). France also remains under the threat of new riots in the suburbs where non-European immigrants and their descendants are concentrated.

2.2 The challenges of civic education

The development of civic education has long been seen as a means of strengthening social cohesion, fighting political polarization and intolerance.[3] In Spain, Civic Education appeared in the school curriculum in 1978, after the end of General Franco's dictatorship and the adoption of a democratic constitution.[4] Greece and France show an even longer tradition in teaching citizenship education. In France, periods of civic education promotion generally follow periods of internal division and conflict, such as the first riots in the suburbs in the 1980s and 1990s (Richard (2015)).

In all three countries, the current curriculum emphasises the same basic values and skills, including critical thinking, tolerance, respect for other humans and human rights, respect for rules and participation, even though the exact content of the curriculum and the way it is taught has fluctuated with changing political administrations.[5] In each of the three countries, middle school students also have the opportunity to experience a commitment to public interest by being elected as student representatives on class councils or on school councils where decisions about school life or the school budget are made. From the outset, however, civic education has faced significant challenges, which have only increased as societies have become more diverse and polarized.

In the first place, civics is not taught as such at the university level (as history or philosophy can be) and the teachers who teach it in middle-schools or high schools are not, strictly speaking, specialists in the subject. Most often, they are history-geography or philosophy teachers who are asked to teach this subject in addition to their own. As a result, civics is often perceived as a non-priority subject by both teachers and students and there is often a big difference between what is actually taught and what should be taught according to the official curriculum. It also means that civic education is often taught in a very teacher-centred way, following text-books closely, with teachers not mastering the subject enough to venture into too free an interaction with students (Bozec (2016)).

In increasingly diverse societies, another basic problem facing civics education is that it may offend the various religious and political sensitivities of students or parents, as the recent murderous attack on a civics teacher in France tragically illustrates.[6] It can be difficult to teach the principles of modern democracies (which include gender equality, tolerance of sexual minorities or the right to criticize religious ideas) in societies where religion plays an important role[7] and is seen (in some quarters) to conflict with

[3] See e.g., European Commission (1998) or Audigier (1998).

[4] For a history of civic education in modern Spain, see e.g., Naval et al. (2003) or Sánchez-Agustí & Miguel-Revilla (2020)

[5] More details on civic education in France, Greece and Spain are provided in appendix E. See also European Commission (2017).

[6] Samuel Paty, a French middle-school teacher, was killed and beheaded by a young Islamist terrorist in Conflans-Sainte-Honorine, near Paris, on 16 October 2020, after a class on freedom of expression during which he showed cartoons depicting the Islamic prophet. The perpetrator was a 18-year old Russian immigrant of Chechen ethnicity, who came to France with a refugee status as a 6-year old child and who attended all his schooling in France.

[7] In Greece, the historical pre-eminence of Orthodox Church is enshrined in the constitution. The law organizing the education system states that one of the aims of education is to help pupils have belief in the authentic elements of the

these principles. There is a recurring debate in the three countries about the role of the State in imposing values in civics education where they may conflict with traditional or religious norms of at least some sections of society. Teaching civics by avoiding controversial topics (such as racial tensions in society) can be problematic as well, and can lead to a growing distrust of education and its official programs among many students.

2.3 Teaching practices questioned

One possible way to get around these difficulties is to move away from traditional teacher-centred, didactic, practices of teaching and to develop practical, student-centred teaching methods where the topics studied are the result of debate and democratic choice of the students themselves. This may reduce distrust arising from the imposition of particular viewpoints and give students more ownership over the learning process.

Educational scientists have long emphasized the role of student-centred teaching practices for improving student learning (Muijs et al. (2014)). A growing body of evidence in the economics literature also supports the view that such teaching practices can be effective for raising both student learning and positive school attitudes in various different contexts (Angrist & Lavy (2001), Machin & McNally (2008), Kane et al. (2011), Aslam & Kingdon (2011), Blazar (2015), Araujo et al. (2016), Briole (2019)).

However, it is not clear that this result applies to civics education, if only because the implementation of less vertical and more collaborative teaching methods can, for many students, reinforce the idea that the subject being taught is not really important. It is also not very clear that pedagogical practices based on student debate, participation and empowerment are most likely to bridge the initial gap in civic knowledge, skills and awareness between students from different social backgrounds. Yet from the point of view of a well-functioning democracy, the equal diffusion of civic knowledge, skills and values across all social backgrounds is at least as important as their average diffusion in the population.

Based on his review of the literature, Print (2012) concludes that "while there are many suitable pedagogies available that appear appropriate to citizenship education there is little research evidence to indicate which ones are most relevant and useful for building active, informed citizens". The experimental evaluation of the ACT program aims to shed light on these questions in the context of three developed societies where mistrust and polarization are on the rise.

3 The ACT intervention

The ACT intervention is based on two basic principles: empowering students, and having them define and implement concrete collective projects, designed to show solidarity and empathy towards people in their environment. The program was defined jointly by the Educational authorities of the three countries

Christian Orthodox tradition. In Spain, Catholicism was also for a long time the state religion, but it has not been since the end of the dictatorship in 1978. Religion classes are still taught in schools by teachers appointed by the bishops and paid by the state. In France, Catholicism is no longer a state religion since 1905, but secular civic education must deal with a much larger Muslim minority than in Spain or Greece.

as well as the English ones.[8] It begins with training sessions for teachers and continues with the selection and implementation of citizenship projects by the students of those trained teachers. Both teacher training and project implementation were first piloted during the 2017-2018 school year in about three schools per country. The full ACT program was then implemented at scale and evaluated during the 2018-2019 school year.

3.1 Training sessions

Teacher training is provided at the beginning of the school year in face-to-face sessions over two days. These training sessions are reserved for teachers in the treatment group, namely the 194 volunteer teachers in the 136 treated schools. The goal of these sessions is to inform teachers about the two basic stages of the program (project choice and project implementation) and the methodology to be followed at each stage. This involves explaining to teachers how to change the traditional teacher-student relationship so that students can have the opportunity to debate, exercise their autonomy and choose their projects collectively. The training sessions also aim at promoting the implementation of innovative assessment methods (i.e. self and peer evaluation). Once the content of the program and the training material has been defined, the only marginal cost of the intervention is trainer's wages. The two days sessions had an average of 8 teachers per trainer. Trainers are typically former teachers with a special certificate. Assuming they are paid similarly to teachers, or slightly above, this implies a cost per trained teacher in the 50-100 euros range, depending on the country specific wage scheme, or 2-5 euros per student.

3.2 ACT projects

The ACT projects were designed and implemented by students in treatment classes during the 2018-2019 school year, from October to April. The ACT mandatory protocol involves two distinct phases: a preparatory phase and an implementation phase. During the preparation phase, students are first randomly assigned to groups of 4 to 5 students. Each group is then tasked with identifying a possible project for the class. A project must deal with one of three themes on either the fight against discrimination, social inclusion or cultural diversity. The students must also specify the group of people for whom the project is primarily intended. This can be students in other classes in the same grade or in lower grades; students in another school, community groups, the whole community, etc. Students must also state the objectives of their project. Possible objectives are to raise public awareness, to inspire change, to promote dialogue, to bring people together, etc.

Once this preparatory work is complete, each group presents its project to the class. A vote is then organized to elect the project that the class will carry out. Following the vote, the teacher helps the

[8] England was initially part of the experiment, but we had to exclude it from the evaluation because of problems recruiting enough schools and resulting implementation issues. By September 2018 only 8 schools had been recruited and a new time table had to be agreed. This ultimately led to 42 schools recruited on a revised protocol, with class projects starting very late in the year. Thus the statistical power and scope of the intervention are much lower in England and not easily comparable to other countries. There were also problems with attrition of schools after recruitment. See the European Commission report (Briole et al. (2020)) for a full account of the evaluation process in English schools.

students develop an action plan and allocate tasks amongst themselves. The last mandatory aspect of the ACT protocol is the implementation of self and peer assessment of project implementation.

Table C1 shows that the projects elected by students cover all three possible themes: fighting discrimination (64%), social inclusion (53%), cultural diversity (29%).[9] They often target migrants and disabled people. Projects often take place within the school, particularly in Greece and Spain; but overall, 42% are implemented outside the school.

Among out-of-school projects, the sort of activities organised included the following: collecting food from supermarkets to distribute to homeless people; collecting toys for a charity; visiting a retirement home (or a centre for disabled people), so as to perform a short play; visiting a nearby elementary school to hold a workshop (or perform a short play) related to gender equality or anti-LGTBI discrimination.

With respect to in-school projects, activities included producing posters (or videos) to speak out against xenophobia, racism or discrimination to their schoolmates; organising a picnic with food from the different countries represented in the school to celebrate the richness and diversity of cultures; setting up an online quiz to detect isolation or bullying and following this up with organised activities to encourage interaction among students; helping non-native speakers to overcome difficulties with the local language; organising private tutoring for those of their schoolmates with academic difficulties.

4 Experimental design

The recruitment process for volunteer schools started in February 2018. For practical reasons, the process was limited geographically: France and Spain targeted a subset of administrative educational regions, scattered over the national territory, whereas in Greece, recruitment was limited to the Attica region. There was no other predefined eligibility criterion, except that all schools were public schools.

Between February and April 2018, Public authorities started by sending out letters that briefly described the ACT project and provided general information about the main features and components of the program (e.g. random selection of schools, teacher's training characteristics, the implementation and evaluation timeline).[10] Schools had to express their interest in participating in ACT before the end of June 2018. Only volunteer schools and teachers entered the experimental design.

In a second step, between July and September 2018 public authorities collected the names of the teacher(s) and students that the volunteer schools planned to include in the program, should the school be allocated to the treatment group, and communicated them to the evaluation team. A total of 270 schools expressed their interest in participating in ACT and provided those lists.

Randomisation then took place between September and October 2018. We first collected school-level data, either via existing administrative databases or directly from the 270 volunteer schools (via on-line questionnaires to school principals). We then formed school strata (of 2 or 4 schools each) on the basis of similar characteristics of the schools and/or their students (e.g. location and size of schools, average

[9] Note that percentages sum to more than 100 because some projects are related to two of the three possible themes.

[10] The draft letters were validated by the evaluators in each country to ensure that they contained all necessary information but did not unduly influence future project implementation by schools and teachers.

student social and immigration background or metrics of student achievements in previous years). Finally, schools were randomly allocated to the treatment and control groups within strata. Subsequently, a small number of schools stopped responding to surveys and participating in the program (1 school in France, 15 in Greece and 4 in Spain) and we had to drop the different strata to which these schools belong. In the end, we kept a total of 85 strata comprising 108 treatment schools and 109 control schools.[11] The evaluation of the ACT program conducted in this paper focuses on this set of schools. They correspond to a total of 323 volunteer teachers and 6211 listed students, of which 3194 and 3017 are in the treatment and control schools respectively (Table 1).

In the following, whenever we use this basic sample to assess the effect of being assigned to the treatment group on a particular endline outcome, we will first check that the response rate for this specific outcome is not affected by the treatment (no differential attrition) and that, among respondents, there is no correlation between the different baseline characteristics and the probability of being treated

5 Data, measurement and internal validity

5.1 Data sources

Our analysis draws mainly on student and teacher online surveys filled at the beginning and the end of the 2018-19 school year in all countries. They targeted all volunteer teachers and all students that stood on the class lists sent by schools before randomization. Student surveys were conducted in school computer labs under the supervision of a teacher or a school staff member. Each student was given a personal access code to the online questionnaire with the option to opt-out. An individual link to teacher surveys was directly sent to teachers by e-mail at the beginning and the end of the school year.

In addition to student and teacher surveys, we were able to collect administrative data on student school behaviours (truancy, late arrivals and disciplinary sanctions) in France. To do so, surveyors reached the schools at the end of the school year to extract this data from the administration's computers. Recording students' absences, late arrivals and disciplinary sanctions is a legal requirement for each school in France. Consequently, a great advantage of this data is to be available for every student from the French sample, up to rare missing values.

While the primary objective of the surveys is to measure the impact of the ACT program, they also include a broad set of questions related to student and teacher characteristics. In particular, the student baseline survey included questions on student own characteristics (gender, age, geographical origin and experience as a representative) and family background (parents' employment and socio-economic status and composition of the household). The teacher baseline survey included questions on teacher demographics (gender, age), professional background (experience, subjects taught, experience in citizenship teaching) and civic engagement at school and outside of school. We also asked teachers about the school climate, class disruption and the weight of student opinion in the functioning of the school. Finally,

[11] When a school is in the treatment group, all teachers named in the initial list were called to attend the training, and then implement the program with all the students mentioned in the same initial list.

specific questions were asked to treated teachers and students at the end of the school year to collect information on projects' implementation and program satisfaction.

5.2 Measuring Student Civic Outcomes

The objective of the ACT program is to develop (1) students' ability to elaborate and respect the rules of collective life; (2) their ability to engage for the community and to prioritize general as opposed to individual interest; (3) their tolerance and respect of others and (4) their support for equal rights. Using student surveys and, when available, administrative data, we constructed standardized indexes to capture the effect of the program along these different dimensions. In addition, we use information collected at the beginning and end of the intervention on friendship networks to capture the effect of the program on the quality of students' integration into their peer group,

As discussed in the rest of this section, our standardized indexes are each built from several measures (scales and/or variables), following Anderson's procedure (Anderson (2008)).[12] While our main analysis focuses on these standardized indexes, we also document findings using the sub-scales and variables they are built from. P-values are adjusted to control for the False Discovery Rate (Benjamini & Hochberg (1995)) within each outcome family.

Civic Attitudes

The first index we consider in the analysis refers to *Civic Attitudes*. This index is built from three main outcomes: altruism, tolerance, and civic values. Student altruism is measured by the adoption of prosocial behaviors: (i) civic engagement at school over the last school year, as measured by tutoring of younger students and participation to the school newspaper; (ii) civic engagement outside of school over the last school year, as measured by volunteering in a humanitarian association or in an association aimed at helping the community or mentoring younger kids (with homework, in sports, etc.) and (iii) altruistic behaviours over the last two weeks, as measured by a series of questions intended to measure prosocial behaviours in daily life, adapted from the Self-Report Altruism scale (Rushton et al. (1981)).

To measure tolerance, students were asked the extent to which they favor social interactions with individuals who share their views on religion, at school and outside of school. This measure is based on an international questionnaire conducted with European youth aged 14-16, as part of a research project whose objective was to investigate religious tensions in Europe (see Weisse (2010) for more details). Finally, our measure of civic values is based on three survey questions measuring the extent to which students agree with general statements on the equality of rights between citizens, regardless of their gender or geographical origin, drawn from the International Civic and Citizenship Education Study (ICCS). Generally speaking, our measures of altruism, tolerance and civic values are based on scales that are widely used in the political science and social psychology literature, the psychometric validity of which

[12]This procedure consists in three steps: (i) switching the sign of outcomes where necessary so that the positive direction always indicates a "better" outcome; (ii) normalizing each outcome and assigning it to an area (or family) of outcomes and (iii) computing a weighted average of all outcomes from the same area to build the corresponding index, where each weight corresponds to the inverse of the covariance matrix of the normalized outcome.

has been largely documented. For each scale, we further check that Cronbach's alphas are above 0.7 in all national samples.

Democratic Participation

The second index, *Democratic Participation*, is based on three main outcomes: political self-efficacy, interest in politics and participation in the "Global Climate Strike for Future" of 15 March 2019. Specifically, political self-efficacy is measured through a standard set of questions asking students about their political knowledge and their self-confidence in talking about and participating in politics, adapted from Niemi et al. (1991). Interest in politics is measured by asking students how often they keep informed about current events, how often they talk about political and societal issues with their parents and friends, and whether they heard about the "Global Climate Strike for Future" on the one hand; and the likelihood that they will take part in different forms of traditional political engagement (ex: vote in elections, join a political party, etc.) in adulthood on the other hand. While the first two outcomes refer to conventional forms of democratic participation, we complement them by asking students whether they participated in the international school strike for climate change that occurred on 15 March 2019, i.e. during our experiment, in all three countries. This allows us to build a more comprehensive measure of democratic participation, especially because young people often prefer unconventional forms of participation over traditional ones like voting or joining political parties (Dalton (2015)).

Civic Behaviour at School

To complement the two indexes based on student surveys, we build a "hard" measure of civic behaviours based on the administrative data collected in France. This data contains information on student truancy and late arrivals as well as on the number and the nature of disciplinary sanctions students were subject to over the school year. We make a distinction between exclusions, the most severe sanction, and lighter sanctions like hours of detention or disciplinary warnings. We therefore build the *Civic Behaviour* index, based on four outcomes: unjustified absences, punctuality, exclusions and smaller sanctions. For each of these outcomes, we take the average over the school year. This index has two notable advantages: it is based on objective measures of student behaviours and it is not subject to attrition bias. Avvisati et al. (2014) use a similar index to analyse the impact of an educational program encouraging parental involvement in French middle schools.

5.3 Validity of the constructs

In order to validate the measures of civic outcomes that we have built, Table A1 shows how they vary across student baseline characteristics. We start with students who have been class representative at least once in the past, compared to those who have not. As the table shows, most civic outcomes are highly stratified by students' experience as a representative. In particular, students with such an experience have a 40% and 30% of a SD higher measures of altruism and interest in political life at baseline respectively. This finding is in line with the literature showing that students who are most involved in the life of their

school (or class) are generally those with the most developed civic sense (Torney-Purta et al. (2001); Losito & D'Apice (2003)).

We then compare students' level of civic outcomes at baseline according to their gender and socio-economic status (SES). In line with the evidence based on international surveys (Sherrod et al. (2010); Schulz et al. (2010, 2018)), we find that females and high SES students have higher Civic Attitudes, higher Democratic Participation and also, in France, better behavior in school - especially with respect to exclusions and smaller sanctions. Finally, we compare European students with non-European students, defined by the country of birth of at least one of their parents or grand-parents. There are basically no differences, but for Civic Behavior, where students of non-European origin have poorer outcomes, which is in line with the school integration problems faced in France by many non-European minority students - especially boys (Ichou & Van Zanten (2019)).

6 Results

In this section, we provide an evaluation of the effect of being assigned to the treatment group on the implementation of the program on the one hand and on students' civic outcomes on the other. We base our analyses on the following regression model:

$$Y_{isr} = \alpha + \beta T_s + \gamma X_{is} + \delta_r + \epsilon_{isr} \tag{1}$$

where Y_{isr} is the outcome of interest for student (or teacher) i in school s and strata r. T_s is the binary treatment indicator, which equals one if school s is in the treatment group and zero otherwise, and X_{is} is a vector of controls selected in each individual regression through a Lasso procedure (Belloni et al. (2014)). Potential controls include student pre-determined characteristics (gender, age, geographical origin, family background, experience as representative, civic outcomes at baseline) as well as teacher sociodemographic and occupational characteristics (age, gender, experience, seniority, certification level, experience with citizenship teaching and training, implementation of citizenship projects over the last two years, personal engagement for the community at school and outside of school). These controls may be selected at the individual student-level or averaged at the school-level. Finally, δ_r represents a full set of dummies indicating the strata used for randomization and ϵ_{isr} the residuals. The estimated $\hat{\beta}$ is the average treatment effect.

In the case of missing baseline data and complete endline data, we impute missing covariate values. For this, we replace missing values with their mean values and include dummies indicating missing values for each covariates. Our results are not sensitive to imputing the missing covariate values. When estimating the effect of the program on sub-indexes, we report p-values of the coefficient of the treatment variable adjusted for the False Discovery Rate, using the Benjamini & Hochberg (1995) procedure, in order to account for multiple hypotheses testing. Finally, following Abadie et al. (2017), we cluster standard errors at the school level in all regressions.

6.1 Implementation of the program

Before estimating the effects of the program on students' civic outcomes, it is important to identify the extent to which the program was actually implemented in the treatment group and the changes this implementation induced in teacher practices and student interactions. To explore these questions, we measured the effect of being assigned to the treatment group on (1) the probability that teachers completed the ACT-specific training at the beginning of the school year, (2) the probability that teachers had their students implement an active citizenship project during the school year, (3) the type of pedagogy implemented by teachers. We also measured the effect of being assigned to the treatment group on (4) students' probability to participate in a citizenship project as well as on (5) the quality of students' integration into their class, as measured by the size of their friendship network.

For each of these 5 outcomes, the analysis is conducted on the sample of individuals who are observed at baseline and for whom the outcome is measured at end-line. Tables B1 and B2 show that these working samples represent between 70% and 80% of the initial sample, but that that there is no significant difference in missing rates between the treated group and the control group. These tables further show that there is no differences in baseline characteristics between the treatment and control groups for each of the five working samples.

Building on this result, Table 2 focuses on the samples for which information is not missing and reports for each of the 5 outcomes the impact of being assigned to the treatment group. Focusing on teachers' outcomes, the table first confirms that a very large fraction of volunteer teachers in treated schools did participate in the fall training sessions: about 97% of them report so. Similarly, about 94% of them confirm that they actually supervised the implementation of a citizenship project during the academic year. These proportions are negligible in the control group. To implement the ACT citizenship projects, teachers in treated schools also appear to have followed the very protocol provided during the training sessions. In particular, they declare having spent about 20 hours on the projects with the students, which is in line with training guidelines (see Table C2 in the online appendix). According to qualitative surveys, teachers were very satisfied with the training in France, but somewhat less so in Spain and Greece. In particular, Spanish teachers found that too little time was spent on practical and ACT-specific issues whereas too much time was spent on general issues.

To test whether teachers in treatment schools were indeed influenced by the training, the end-line survey also asked detailed questions about teaching methods, so as to measure teachers' use of student-centred practices.[13] Using an index of all these questions, Table 2 shows that, on average, teachers from treated schools indeed declare practices that better fit the principles exposed during the training sessions, by about 35% of a SD.

At the end of the school year, students were also asked whether they had taken part in a citizenship project in their school. Reassuringly, the proportion of students who report having participated in a

[13] In terms of teaching methods, for example, we collected information describing the frequency with which teachers have students work in small groups, set up whole-class discussions or have students make oral presentations. We also collected information on how often students suggest classroom activities themselves, negotiate lesson objectives or express their opinions about lessons.

citizenship project is much higher in treated schools than in control schools (by about +43 percentage points). In treated schools, about three quarters of students report having participated in a citizenship project, compared to less than one third in control schools.

The fact that the proportion does not reach one hundred percent in treated schools reflects that some projects were aborted very early in the year and that some students eventually refused to participate or did not get involved. All such occurrences were observed in qualitative work. Conversely, the fact that the proportion of students who participated in a citizenship project was not negligible in the control group confirms that project-based pedagogy is not unknown to teachers, and suggests that a significant fraction of teachers in the treated group would have conducted a citizenship project anyway, even if they had not been assigned to the treatment group.

To further investigate the changes associated with the program, it is also possible to use the information collected on the size of friendship networks. The comparison of these networks at the end and the beginning of the year suggests that the implementation of the program is followed by a significant decrease in the number of students who are poorly integrated into their class. At the beginning of the year, about 18.5% of the students declared that they have no more than one or two friends in their class, in both treated and control classes. At the end of the year, this proportion remained about the same in control classes, but appeared to be significantly lower in treated classes (about -3.6 percentage points lower, or -20%). This result is in line with the idea that project-based pedagogy can be associated with an increase (and an improvement) of social interactions within classes.

In the end, we have a fairly complete set of evidence that the treated classes are, as expected, classes where civic education based on collective interactive projects and student initiative is used much more extensively than in the other classes. The next step is to evaluate the impact of these changes in teaching methods on our measures of student civic-mindedness.

6.2 Treatment effect on civic outcomes

In this section, we provide evidence on the effect of being assigned to the treatment group on three basic measures of students' civic virtues, namely students' Civic Attitudes, Democratic Participation and Civic Behaviour. As discussed above, each of the three basic outcomes is made up of responses to various questions. The Civic Attitudes index is based on students' responses to questions on altruism, tolerance and civic values (i.e., 3 secondary outcomes). The Democratic Participation index is based on responses relating to political self-efficacy, interest in political life and participation in 'the climate strike' (i.e., again 3 secondary outcomes). Finally, the Civic Behaviour index (for France only) is based on administrative data covering truancy, punctuality, punishments and exclusions (i.e., 4 secondary outcomes). For each of the 3 primary outcomes and the 10 secondary outcomes, the analysis is again conducted on the working sample of individuals who are observed in baseline and for whom the outcome is measured in endline. Tables B3 and B4 show that these working samples represent between 67% and 98% of the initial sample, but, again, there is no significant difference in missing rates between the treated group and the control

group. These tables further show that there is no differences in baseline characteristics between the treatment and control groups for each of the thirteen working samples.

Building on this result, Table 3 focuses on the samples for which information is not missing and reports for each of the 13 outcomes the impact of being assigned to the treatment group.The results show a positive and statistically significant point estimate for all three primary outcome measures. The intervention caused an increase in the Civic Attitude index of about 11% of a standard deviation (SD) as well as an increase in the Democratic Participation index of about 6.2% of a SD and a 17.8% of a SD increase in the Civic Behavior index. To benchmark these effect sizes, notice that the girls-boys gap represents 21% of SD for Civic Attitudes, 4.4% of a SD for Democratic Participation and 18% of a SD for Civic Behaviour, and the high-low SES gap is respectively 15% of a SD, 30% of a SD and 22% of a SD (Table A1). Therefore, the intervention has the potential to close a substantial fraction of these gaps.

The positive impact on the Civic Attitudes index is mostly driven by how the intervention affected altruism (and to, a lesser extent, religious tolerance), something that is consistent with the fact that much of the projects chosen by students were related to helping others (elderly, minorities, other students). The positive impact on the Democratic Participation index is mostly driven by change in political self-efficacy (which is significant at the 1% level): this may be connected with student empowerment during the whole project, and specifically the initial vote on potential projects, which can provide a sense of self-efficacy. In France, changes in the Civic Behaviour index are driven by a positive effect of the intervention on absences and exclusions, which are the most significant behavioural deviations from the norm (as opposed to being on time and receiving a punishment from a teacher). This result is consistent with the idea that interactive project-based teaching strategies can contribute not only to improving students' relationships with their classmates (as shown earlier), but also, more fundamentally, their school integration.

A possible artefact could drive the Civic Attitudes results. Remember that this index includes an altruism index that itself uses, among others, measures of engagement *at school* over the last school year, such as tutoring of younger students and participation to the school newspaper; and engagement *outside of school* over the last school year, such as volunteering in a humanitarian association or in an association aimed at helping the community or mentoring younger kids (with homework, in sports, etc.). Given that some of the projects implemented during the ACT program can consist in tutoring other students or helping the community, the positive effect we find could be a direct measure of the implementation of the program, rather than of its effects. To test this hypothesis, we have been through the description of class projects provided in our teacher survey, and excluded all observations for which the project corresponds to one of the questions used for our altruism measure. To the extent that those observations could overstate the impact measure, we can form a conservative estimate of the effect by running our regressions with those observations excluded. Results are reported in Table D1, and they show that the finding are very robust: the effect on the Civic Attitudes index is now 0.083, compared to 0.110 in the full sample, and the coefficient on the altruism sub-index is now 0.070 instead of 0.090. In addition, Table D2 further excludes the projects that could not be classified (non-response or ambiguous description), and the results are similar. There is therefore no evidence that this artefact might be driving our results.

6.2.1 Pre-registered heterogeneity analysis

In our pre-analysis plan, we hypothesized that an important source of heterogeneity in treatment effects might be related to students' baseline level of civic skills, in line with a model in which skills acquired in the early school years and educational investments made later in school represent two types of input that are complement in the skill production function. We also hypothesized that it would be possible to test the role of the baseline level of civic skills by comparing students who had previous experience as student representatives with students who had never had such an experience, because school involvement is generally associated with higher civic knowledge and higher level of democratic engagement (Torney-Purta et al. (2001); Losito & D'Apice (2003)). We take advantage of the fact that, in the middle schools of each of the three countries, students in each class have to elect representatives each year, whose role is to help circulate information between teachers and students, particularly in the class councils that meet at the end of each term of instruction. Students also have to elect school-level representatives each year, who have an advisory role in the councils where the school's budgetary and educational choices are discussed. In our baseline surveys, students were asked if they had ever been elected as a representative on the class council or the school parliament/student council and Table A1 in the online appendix confirms that there are indeed strong differences in baseline level of civic attitudes (especially altruism) and democratic participation between students who have been representatives in the past (about 35% of the sample) and other students. Table 4 builds on this result to compare the magnitude of treatment effects for students labelled as "representatives" and for the other students.

With respect to participation in a citizenship project, Table 4 first reveals that the impact of the assignment to treatment is very significant for both representatives (+38 percent points) and non-representatives (+45 pp).[14] The ACT program appears to have the ability to engage all sorts of students, not just the most initially motivated.

Nevertheless, looking at pooled results across all countries, we observe that the overall effect of the intervention on the Civic Attitudes Index is almost entirely driven by students who had been active as student representatives at some point in their past. The point estimate is 0.175 SD for this subgroup and is only 0.063 SD for non-representatives (and not statistically different from zero). The two coefficients are not statistically different from each other, but there is a strong regularity: within each country, the point estimate on the Civic Attitudes index is larger for representatives than it is for non-representatives. The pooled results also show that the point estimate for the Democratic Participation index is mostly driven by a stronger effect on students that served as student representatives (0.078 SD against 0.048 for other students). Finally, in France, where there is a significant effect of the intervention on objective measures of Civic Behaviour, the point estimate is again stronger for students who had been representatives (0.197 SD) than for non-representatives (0.15 SD).

In the end, Table 4 reveals that the impact of the treatment on civic outcomes tends to be systematically stronger for representatives than for the other students. This result is all the more striking since

[14]The fact that this first-stage impact tends to be even stronger for non-representatives mainly reflects that their participation in a citizenship project is less common in control schools. In control schools, 40% of representatives report participating in some citizenship project, as compared to 26.5% among non-representative.

the first-stage effect of the treatment on participation in a citizen project is not stronger for representatives. Also, in our sample, representatives are not particularly recruited among students from privileged backgrounds. This is likely because all classes from all neighbourhoods must elect representatives every year; and maybe also because social origin is not strongly correlated with motivation for holding this position. The estimated contrasts between treatment effects on representatives and other students are not statistically significant at standard levels, but they nevertheless suggests that program participation is more effective for students who are initially the most civic-minded, a hypothesis that we explore in more depth below when we move to our data-driven exploration of heterogeneous effects.

In the pre-analysis plan, we hypothesized that impacts might also differ by gender, family background or geographic origin, but the data provide little support for these assumptions (see Tables D3 to D5 in the online appendix). The one exception is geographic origin where our data suggest a systematically weaker treatment impact on civic outcomes for students of non-European origin.[15]

To be more specific, the effect of the treatment is 0.13 SD on Civic Attitudes for European origin students, compared to about 0.02 SD for the non-European group; 0.067 SD vs. -0.044 SD on Democratic Participation; and 0.207 SD vs. 0.075 SD for Civic Behavior (see Table D3 in the online appendix). A closer look at the results reveals that these contrasts are mainly reflecting the French situation. No such heterogeneity is found in the other two countries. Moreover, the lack of effect on the civic outcomes of students from non-European families cannot be explained by their lower participation in the program. The first-stage impact of the treatment on participation in a civic-oriented program is indeed about as strong for students for non-European families as for the European group. What seems to be at stake is the way in which participation in the program has impacted students with different geographical origins.

In French schools, a large majority of students of non-European origin come from the Maghreb, the Middle East or sub-Saharan Africa, that is, for the most part, from Muslim countries, many of which are also former French colonies. Tensions with students from these non-European families tend to be all the more acute because the French school model is characterized by a historically strict secularism, built at the end of the 19th century after a long battle against the Catholic Church, and often criticized for its monoculturalism.[16] The difficulty to actually promote citizenship among students from non-European minorities likely reflects the mistrust that some of these students feel towards this system (Bozec (2017)).[17]

[15] We take a conservative definition and classify students with all parents and grand-parents born in Europe as "European" origin, otherwise as "non-European" origin. With this definition, the share of non-European origin students is relatively high, especially in France (26%) and Spain (21%). The Greek sample is geographically focused, which explains the relatively low proportion of non-European origin students (and relatively high share of high SES students).

[16] These tensions are perhaps best illustrated by the problems that arise during tributes to the victims of attacks by djihadi terrorists. For example, during the 2015 tribute held in every secondary school to the victims of *Charlie Hebdo*, one week after the attack, the Ministry of National Education counted approximately 200 disruptions by students opposing the tribute. A similar phenomenon was observed during the tribute to Samuel Paty, the teacher who was beheaded in 2020.

[17] Although they do not explicitly label them along the national origin dimension, the French qualitative reports mentions "pupils who also tend to be defiant of the school institution and teachers, resulting in a school climate less conducive to collective work, including for the ACT program" (Delannoy et al. (2019)).

6.2.2 Data-driven heterogeneity analysis

In the previous section, we built on our pre-analysis plan to explore variations in treatment effects between different pre-defined subgroups of students. This approach protects against the risk of overfitting that threatens when subgroups are defined ex post. The problem, however, is that by restricting ourselves to pre-defined subgroups, we run the risk of missing important sources of heterogeneity. To overcome this difficulty, several Machine Learning techniques are now available that allow the heterogeneity of treatment effects to be explored in a data-driven manner, without a priori restrictions and avoiding overfitting.

In this section, we use one of these techniques, namely the generalized random forest (GRF) procedure introduced by Athey et al. (2019). It makes it possible to predict treatment effects for each student individually using all available information on his/her baseline characteristics (i.e., not simply information on the characteristics mentioned in the pre-analysis plan) and to test very simply the existence of heterogeneity in these treatment effects.[18]

Denoting Y the outcome under consideration, D the binary treatment and Z the set of baseline covariates, this procedure starts by growing two regression forests to construct estimates $Y(Z)$ and $D(Z)$ of $E(Y|Z)$ and $E(D|Z)$. Building on these two estimates, the procedure then grows a causal forest to construct an estimate $S(Z)$ of the conditional average treatment effect $s_0(Z) = E(Y_1 - Y_0|Z)$, where Y_1 and Y_0 represent students' potential outcomes in treated and non-treated states. Finally, following Athey & Wager (2019) and Chernozhukov et al. (2018), it is possible to test for the existence of heterogeneity in $s_0(Z)$ by regressing $Y - Y(Z)$ on $C = \bar{S}(D - D(Z))$ and $SD = (S(Z) - \bar{S})(D - D(Z))$ where $\bar{S}$ represents the average of $S(Z)$. Denoting β the regression coefficient of SD, it is not difficult to check that it provides an estimate of $COV(S(Z), s_0(Z))/Var(S(Z))$.

Hence, rejecting $H_0 : \beta = 0$ implies rejecting that the actual variance of $s_0(Z)$ is zero. It also implies rejecting that the causal forest estimates of treatment effects do not represent relevant predictors of the actual treatment effects. Conversely, when H_0 is not rejected, this does not necessarily imply that there is no significant heterogeneity in treatment effects, it may also mean that the causal forest procedure does not produce relevant predictions of treatment effects.

We conducted this test by considering in turn the dummy variable indicating participation in a citizenship project and the three main civic indexes, namely the Civic Attitudes index, the Democratic Participation index and the Civic Behaviour index (available for France only). The test strongly rejects the null hypothesis that $\beta = 0$ for the project participation variable as well as for the two first civic indexes, in line with the assumption that there exists significant heterogeneity in treatment effects for these three variables. Also, the estimated betas are, in all three cases, close to 1, which is suggestive that, in all three cases, our GRF estimate $S(Z)$ represents a good proxy for $s_0(Z)$. In contrast, the test does not reject the null hypothesis for the index of civic behaviour. As discussed above, it may reflect that there

[18]The analyses conducted in this section use the R package grf, version 2.0.2 (Tibshirani et al. (2021)). To train our procedures, we use all available baseline measures of civic skills (scales and subscales), all available measures of social interactions, country of residence as well as dummies indicating experience as student representative, gender, geographic origin (European/non European), family socio-economic background (family size, presence of parents at home, number of books, birth rank, parents' education), and all the 1x1 interactions between the socio-demographic dummies.

is no significant heterogeneity, but it may also reflect that (as far as civic behaviour is concerned) $S(Z)$ does not predict $s_0(Z)$ very well, especially when we have to work with the smaller French subsample.[19] The detailed results of the different tests are given in table 5.

To further explore the sources of treatment effect heterogeneity, it is possible to identify the baseline variables that are most often used by the causal forest procedure to grow trees and predict individual treatment effects. To be more specific, for each outcome and each baseline variable, it is possible to count the proportion of splits on this variable used by the procedure, giving a higher weight to a split the earlier it occurs in the development of a tree. When we conduct this analysis for the variable indicating student participation in a citizenship project, we find that the baseline size of the friendship network is the most important source of heterogeneity. Specifically, the effect of the treatment on students' propensity to engage in a group project is greater the fewer friends they have at the beginning of the school year. The opportunity to participate in a group project allows the most isolated students to expand their network of friends.

When we conduct the same analysis for the indexes of Civic Attitudes and Democratic Participation (the two civic outcomes for which heterogeneity in treatment effects is detected), we find that the baseline measures of altruism and, to a lesser extent, political interest, are by far the most important, i.e., those most often involved in the development of trees. In the end, baseline altruism appears to be the most important source of heterogeneity for treatment effects on civic outcomes, although it does not emerge as a particular source of heterogeneity for treatment effects on program participation, in line with the idea that participation in a citizenship program is most effective for those who are already the most altruistic initially.

It should be emphasized that countries are never selected as important sources of heterogeneity, regardless of whether we focus on project participation or on civic outcomes. This last result is consistent with our previous observation from Table 4 that, once we account for effects heterogeneity along the representative/non-representative dimension, effect sizes tend to be similar across countries. This happens in spite of the fact that countries have different traditions with respect to citizenship education, as well as different pedagogical approaches, and is suggestive that our results may be fairly general.

The fact that the program had a significantly stronger impact on the civic attitude and democratic participation indexes of students who were initially more altruistic and more interested in politics is consistent with the findings obtained from the pre-analysis plan, which highlighted the impact of the program on students who have had experience as student representatives. Indeed, two of the main baseline characteristics of students who have had such an experience are precisely a high level of altruism and a high level of interest in politics (Table A1). Table D6 in the appendix splits the sample into students who are in the top vs bottom half of the distribution of treatment effects on Civic Attitudes (first panel) and Democratic Participation (second panel), and compares their average baseline characteristics. The table confirms that there is a highly significant difference between the top and bottom half of students in terms of average baseline altruism, as well as, to a lesser extent, in terms of average baseline interest in

[19] We checked, however, that when we focus on the French subsample, the regression coefficient of SD remains significant (and very close to one) for both the Civic Attitudes and Democratic Participation indexes.

politics or in terms of proportion who have had experience as a student representative. In contrast, there is little difference in the proportion of students of non-European origin or in the proportion of students from high socioeconomic status families.

The finding that there is significant heterogeneity in the effects of the program *and* that students who are initially more civically aware benefit more from the program, is consistent with observations from the qualitative analysis. According to class observations and interviews in the three countries, heterogeneity finds its source in students' level of involvement in the program. Specifically, the French report writes: "Students' investment in the ACT program, first of all, varies according to their profile; as a general rule, ACT does not overturn usual school hierarchies, with successful students tending to be more invested than students with academic difficulty. (...) But it is also explained by their greater ability to act independently, which allows them more easily to understand what is required of them within the framework of the ACT program and to find their place there, where project-based pedagogy can be destabilizing for other students who are less inclined to be independent" (Delannoy et al. (2019)). They conclude, as we do here, that the program reinforces inequalities.

To further illustrate the importance of baseline altruism, we calculated the conditional average treatment effects (CATEs) of the intervention on the three basic outcomes for each of the quintiles of our baseline altruism index distribution (see Figures D1 to D3). This approach shows that CATEs grow steadily with baseline altruism regardless of whether we focus on effects on civic attitudes, democratic participation or even civic behavior. For example, the CATEs on Civic Attitudes appear to be more than twice as strong for students in the top quintile (+13% of a SD) as for those in the bottom quintile of the distribution of baseline altruism (+6% of a SD). We checked that the difference in civic attitudes and democratic participation between the top quintile and the rest of the sample is significant at standard level.

7 Conclusion

One of the main objectives of public education has always been to cultivate civic values of young people. The contemporary relevance of this role is brought into sharp relief by the rise in political and religious extremism and the distrust of institutions that is common across many countries. Little is known about whether and how school-level interventions can have an effect on civic values. This is the context of our study of an Active Citizenship Programme, which is developed and implemented in middle schools across Greece, France and Spain. Through a large-scale Randomised Control Trial, this paper provides original evidence on the causal effects of civic-specific education on students' civic outcomes as well as on the distribution of these effects across students.

The content of this program involves training teachers to facilitate effective group work in their classrooms such that groups of students develop, vote on and implement their own projects addressing discrimination, social inclusion or cultural diversity. We show that this program changed teaching practices across all three countries and that in all settings, it improved measures of social interaction and civic outcomes. The program helps students make more friends with their classmates, develops their altruism

and political self-efficacy, as well as leads them to better respect the internal rules of the school community (with fewer absences and serious sanctions). The magnitude of the estimated effects is sizeable, being a large proportion of the gender gap in the same indicators of civic attitudes, democratic participation and civic behaviour. Thus, our results are in line with a long tradition dating back to Aristotle, Tocqueville or Dewey, which defends the idea that citizenship is learned primarily through practical investment in local social and political life.

The results also show substantial heterogeneity in the effects of the intervention, with a concentration on students who are initially endowed with civic skills. So while the program improves average outcomes, it also contributes to increasing inequality between students. This is true across all three countries. These results are consistent with a model according to which skills acquired in the early school years and school investments made later in adolescence are complementary inputs in the education production function. More research is needed to assess the effect of implementing new civics programs based on debates, group projects, and learning by doing much more systematically in the early grades.

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Main Tables

Table 1: Number of Schools, Teachers and Students, by Treatment Status and Country

	(1) All	(2) France	(3) Greece	(4) Spain
Number of schools				
Total	217	75	47	95
Treated schools	108	37	23	48
Control schools	109	38	24	47
Number of volunteer teachers on initial lists				
Total	323	123	67	133
Teachers in Treated school	161	60	35	66
Teachers in Control schools	162	63	32	67
Number of students on initial lists				
Total	6211	2269	1808	2134
Students in Treated school	3194	1202	884	1108
Students in Control schools	3017	1067	924	1026

Note: This table shows the number of schools, students and teachers in the sample of the experiment, by country and treatment status.

Table 2: Treatment Effects on Program Implementation and Student Social Interactions

	(1) C	(2) T-C	(3) S.E.	(4) p-val	(5) N
Teachers					
Participation in ACT training	0.024	0.949***	0.026	0.000	247
Actual implementation of ACT project	0.040	0.902***	0.029	0.000	245
Teacher Pedagogy index	0.000	0.353***	0.128	0.006	254
Students					
Student participation to a citizenship project	0.301	0.427***	0.024	0.000	4133
Student friendship (more than 2 friends)	0.816	0.036***	0.011	0.001	4299

Note: for each of the five row variables, the first column (column C) displays the mean of the row variable in the control group; the second column (column T-C) displays the coefficient from the regression of the row variable on a treatment dummy controlling for strata fixed effects as well as for a set of controls selected from the full set of baseline variables through a Lasso procedure (Belloni et al. (2014)). The third column shows the standard errors clustered at the school level whereas the fourth column shows the corresponding p-value. The last column displays the size of the analysis sample, namely the sample of individuals who are observed at baseline and for whom the row variable is measured at endline. Each line corresponds to a separate regression. Attrition analysis and balance checks for each of the 5 analysis samples are provided in appendix Tables B1 and B2. * p<0.10, ** p<0.05, *** p<0.01.

Table 3: Treatment Effects on Civic Outcomes

	(1) C	(2) T-C	(3) S.E.	(4) Unadj. p-val	(5) Adj. p-val	(6) N
Civic Attitudes index	0.000	0.110***	0.034	0.001	-	4244
Altruism	0.000	0.090*	0.039	0.022	0.065	4244
Tolerance	0.000	0.037	0.028	0.176	0.264	4119
Civic values	0.000	0.030	0.027	0.271	0.271	4110
Democratic Participation index	0.000	0.062**	0.029	0.031	-	4294
Political self efficacy	0.000	0.085***	0.026	0.001	0.004	4241
Interest in political life	0.000	0.002	0.028	0.953	0.953	4294
Participation to Climate strike	0.000	0.045	0.036	0.208	0.313	4244
Civic Behaviours index	0.000	0.178**	0.073	0.015	-	2251
Absences	0.000	0.207**	0.083	0.013	0.027	2227
Punctuality	0.000	0.086	0.087	0.321	0.321	2184
Exclusions	0.000	0.125**	0.053	0.018	0.027	2115
Smaller sanctions	0.000	0.042	0.082	0.609	0.609	2073

Note: For each of the thirteen row variables, the first column (column C) displays the mean of the row variable in the control group; the second column (column T-C) displays the coefficient from the regression of the row variable on a treatment dummy controlling for strata fixed effects as well as for a set of controls selected from the full set of baseline variables through a Lasso procedure (Belloni et al. (2014)). The third column shows the standard errors clustered at the school. The fourth column shows the corresponding unadjusted p-value while the fifth column shows the p-value adjusted for false discovery rate (Benjamini & Hochberg (1995)). The last column displays the size of the analysis sample, namely the sample of individuals who are observed at baseline and for whom the row variable is measured at endline. Each line corresponds to a separate regression. Attrition analysis and balance checks for each of the 13 analysis samples are provided in appendix Tables B3 and B4. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 4: Treatment Effects by Experience as Representative and Country

	(1) All	(2) France	(3) Greece	(4) Spain
Representatives				
Participation to a citizenship project	0.382***	0.458***	0.386***	0.313***
	(0.028)	(0.053)	(0.041)	(0.052)
Civic Attitudes index	0.175***	0.223**	0.283***	0.122
	(0.054)	(0.092)	(0.088)	(0.093)
Democratic Participation index	0.078*	0.061	0.079	0.106*
	(0.044)	(0.089)	(0.080)	(0.061)
Civic Behaviours index	-	0.197**	-	-
		(0.095)		
Non representatives				
Participation to a citizenship project	0.446***	0.562***	0.507***	0.321***
	(0.028)	(0.047)	(0.040)	(0.040)
Civic Attitudes index	0.063	0.152**	-0.035	0.040
	(0.042)	(0.067)	(0.100)	(0.063)
Democratic Participation index	0.048	0.099	0.064	-0.009
	(0.035)	(0.065)	(0.081)	(0.063)
Civic Behaviours index	-	0.150**	-	-
		(0.069)		

Note: The top panel of the table refers to the subsample of students with an experience as student representatives (N=1,480) while the bottom panel refers to the subsample of students without such an experience (N=2,749). For each panel, the table shows the results of regressing each of the four main endline outcomes on a treatment dummy, controlling for strata fixed effects as well as for a set of controls selected from the full set of baseline variables through a Lasso procedure (Belloni et al. (2014)). Column (1) refers to the pooled sample while columns (2) to (4) refer to the different country-specific samples. Standard errors (in parentheses) are clustered at the school level. * p<0.10, ** p<0.05, *** p<0.01.

Table 5: Generalized Random Forests: Tests for Heterogeneity

	(1) Citizen. project	(2) Civic Attitudes	(3) Democratic Part.	(4) Civic Behaviours
β coefficient	1.14***	0.90***	0.92**	-0.99
	(0.24)	(0.29)	(0.33)	(0.88)
Most important variable	Nb of friends	Altruism	Altruism	-

Note: This table shows the results of the test for heterogeneity in treatment effect proposed by Chernozhukov et al. (2018), which seeks to fit the Conditional Average Treatment Effect (CATE) as a linear function of the out-of-bag causal forest estimates. This test is performed on the main outcome that measure program implementation (Citizenship project participation) and the three main student civic outcomes (Civic Attitudes index, Democratic Participation index and Civic Behaviours index), using the pooled sample of participating countries, except for Civic Behaviours which is available in the French sample only. The first row of the table shows the main β coefficient of this regression and its standard errors (in parentheses), clustered at the school level. The second row shows the most important variable determining the heterogeneity of treatment effects. Nb of friends is negatively correlated with treatment effect on project participation, whereas Altruism is positively correlated with treatment effect on Civic attitudes and Democratic participation. * p<0.10, ** p<0.05, *** p<0.01.

Appendix A Sample characteristics

Table A1: Outcomes at baseline (standardized), by student type

	(1)	(2)	(3)	(4)	(5)	(6)
	Represent	*Non rep*	Diff.	*Female*	*Male*	Diff.
Civic Attitudes	0.118	-0.078	0.196***	0.100	-0.110	0.210***
Altruism	0.245	-0.188	0.433***	0.065	-0.122	0.187***
Tolerance	0.031	-0.015	0.046	0.086	-0.084	0.170***
Civic Values	0.022	-0.000	0.022	0.160	-0.158	0.318***
Democratic Participation	0.158	-0.122	0.280***	0.003	-0.041	0.044
Political self efficacy	0.153	-0.118	0.271***	-0.053	0.021	-0.074**
Interest in political life	0.167	-0.123	0.290***	0.061	-0.099	0.161***
Civic Behaviours	0.071	0.035	0.036	0.107	-0.073	0.180***
Absences	0.073	0.079	-0.006	0.032	0.005	0.026
Punctuality	0.012	0.041	-0.028	0.077	-0.054	0.131*
Exclusions	0.088	-0.012	0.100	0.170	-0.157	0.327***
Smaller sanctions	0.057	0.016	0.041	0.200	-0.162	0.362***
	High SES	*Low SES*	Diff.	*European*	*Non-europ*	Diff.
Civic Attitudes	0.069	-0.082	0.151***	-0.003	-0.004	0.001
Altruism	0.019	-0.079	0.098***	-0.044	0.031	-0.076*
Tolerance	0.074	-0.068	0.142***	0.017	-0.051	0.068
Civic Values	0.115	-0.105	0.221***	0.025	-0.018	0.043
Democratic Participation	0.129	-0.169	0.298***	-0.005	-0.038	0.034
Political self efficacy	0.105	-0.146	0.251***	-0.007	-0.036	0.029
Interest in political life	0.152	-0.188	0.340***	-0.003	-0.031	0.028
Civic Behaviours	0.137	-0.086	0.223***	0.112	-0.055	0.166**
Absences	0.128	-0.052	0.180**	0.128	0.006	0.122*
Punctuality	0.141	-0.120	0.261***	0.148	-0.216	0.364***
Exclusions	0.122	-0.092	0.214**	0.062	0.021	0.042
Smaller sanctions	0.167	-0.092	0.260***	0.164	-0.212	0.376***

Note: This table shows the average baseline civic skills of students in our sample, by student type, for the pooled sample of countries participating in the experiment. The Civic Behaviours index and sub-indexes are only available in France at endline. For these outcomes, the differences displayed are computed on the control group only. * p<0.10, ** p<0.05, *** p<0.01.

Appendix B Attrition and balancing checks

Table B1: Attrition Analysis and Baseline Balance Checks for the Teacher Samples used in Table 2

	(1) *ACT training*	(2) *ACT implementation*	(3) *Pedagogy*
Attrition			
Observation not missing	-0.014	-0.013	0.006
	(0.042)	(0.041)	(0.040)
	[0.784]	[0.777]	[0.801]
N	323	323	323
Balancing			
Female	-0.040	-0.029	-0.035
	(0.068)	(0.067)	(0.066)
	[0.690]	[0.687]	[0.691]
Experience	-0.911	-1.112	-0.982
	(0.926)	(0.937)	(0.915)
	[18.28]	[18.22]	[18.36]
Seniority	0.216	0.220	0.184
	(0.886)	(0.875)	(0.838)
	[7.82]	[7.88]	[7.91]
School responsibilities	-0.126	-0.139	-0.132
	(0.117)	(0.116)	(0.116)
	[0.066]	[0.057]	[0.046]
Engagement out of school	0.013	-0.001	0.014
	(0.150)	(0.147)	(0.145)
	[0.042]	[0.043]	[0.038]
Years teaching citizenship	0.348	0.540	0.376
	(1.116)	(1.130)	(1.089)
	[8.937]	[9.010]	[9.048]
Studied Citizenship init. training	0.059	0.066	0.046
	(0.060)	(0.059)	(0.058)
	[0.358]	[0.361]	[0.356]
Studied Citizenship prof dvpmt	-0.022	-0.035	-0.032
	(0.057)	(0.059)	(0.055)
	[0.492]	[0.496]	[0.489]
Citizen project over last 2 years	0.014	0.009	0.023
	(0.062)	(0.062)	(0.060)
	[0.623]	[0.620]	[0.610]
Teacher Pedagogy index (Baseline)	-0.190	-0.184	-0.198
	(0.131)	(0.134)	(0.128)
	[0.000]	[0.000]	[0.000]
N	247	245	254

Note: The top panel of the table refers to the sample of teachers who participate in the experiment (N=323). For each of the three outcomes that measure the implementation of the program (i.e., training participation, project implementation, pedagogy), this top panel shows the result of regressing a variable indicating that the observation for this outcome is not missing on a treatment dummy controlling for strata fixed effects. For each of the three outcomes, the bottom panel of the table refers to the sample of teachers who participate in the experiment for which the observation is not missing. For each outcome and each baseline variable, the bottom panel shows the result of regressing the baseline variable on a treatment dummy, controlling for strata fixed effects. Standard errors (in parentheses) are clustered at the school level. Variable means in the control are within brackets. and p-values are adjusted to account for multiple hypothesis testing following the procedure proposed by Benjamini & Hochberg (1995). * p<0.10, ** p<0.05, *** p<0.01.

Table B2: Attrition Analysis and Baseline Balance Checks for the Student Samples used in Table 2

	(1) *Citizen. project*	(2) *Friendship*
Attrition		
Observation not missing	-0.023	-0.020
	(0.023)	(0.023)
	[0.671]	[0.696]
N	6,211	6,211
Balancing		
Civic Attitudes index	0.006	0.000
	(0.036)	(0.035)
	[0.000]	[0.000]
Democratic Participation index	-0.045	-0.047
	(0.046)	(0.044)
	[0.000]	[0.000]
Age	-0.011	-0.003
	(0.046)	(0.046)
	[17.07]	[14.07]
Female	-0.005	-0.011
	(0.017)	(0.017)
	[0.520]	[0.516]
European origin	-0.033	-0.031
	(0.017)	(0.017)
	[0.805]	[0.800]
High SES	-0.004	-0.005
	(0.020)	(0.020)
	[0.532]	[0.529]
Nb siblings	-0.053	-0.059
	(0.054)	(0.053)
	[1.797]	[1.812]
Representative	0.007	0.008
	(0.013)	(0.013)
	[0.352]	[0.352]
N	4,133	4,299

Note: The top panel of the table refers to the sample of students who participate in the experiment (N=6,211). For each of the two outcomes that measure the implementation of the program (i.e., participation in a citizenship project, friendship), this top panel shows the result of regressing a variable indicating that the observation for this outcome is not missing on a treatment dummy controlling for strata fixed effects. For each of the two outcomes, the bottom panel of the table refers to the sample of students who participate in the experiment for which the observation is not missing. For each outcome and each baseline variable, the bottom panel shows the result of regressing the baseline variable on a treatment dummy, controlling for strata fixed effects. Standard errors (in parentheses) are clustered at the school level. Variable means in the control group are within brackets. P-values are adjusted to account for multiple hypothesis testing following the procedure proposed by Benjamini & Hochberg (1995), except for the main indexes. * p<0.10, ** p<0.05, *** p<0.01.

Table B3: Attrition Analysis and Baseline Balance Checks for the Samples used in Table 3

	(1) *CA Idx*	(2) *Altruism*	(3) *Tolerance*	(4) *Civ. Values*	(5) *DP Idx*	(6) *Pol. Self-eff*	(7) *Pol. int.*	(8) *Clim Strike*
Attrition								
Observation not missing	-0.021	-0.021	-0.021	-0.024	-0.020	-0.018	-0.020	-0.017
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
	[0.688]	[0.688]	[0.668]	[0.668]	[0.696]	[0.687]	[0.696]	[0.686]
N	6,211	6,211	6,211	6,211	6,211	6,211	6,211	6,211
Balancing								
Civic Attitudes index	-0.001	-0.001	0.006	0.008	0.000	-0.006	0.000	-0.004
	(0.035)	(0.035)	(0.037)	(0.036)	(0.035)	(0.035)	(0.035)	(0.035)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Democratic Participation index	-0.042	-0.042	-0.043	-0.041	-0.047	-0.046	-0.047	-0.046
	(0.044)	(0.044)	(0.045)	(0.046)	(0.044)	(0.044)	(0.044)	(0.044)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Age	-0.005	-0.005	-0.005	-0.012	-0.004	-0.003	-0.004	-0.002
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
	[14.07]	[14.07]	[14.07]	[14.08]	[14.07]	[14.07]	[14.07]	[14.07]
Female	-0.007	-0.007	-0.005	-0.006	-0.011	-0.009	-0.011	-0.005
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
	[0.516]	[0.516]	[0.520]	[0.522]	[0.517]	[0.517]	[0.517]	[0.517]
European origin	-0.032	-0.032	-0.031	-0.031	-0.031	-0.032	-0.031	-0.034
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
	[0.802]	[0.802]	[0.804]	[0.806]	[0.800]	[0.802]	[0.800]	[0.802]
High SES	-0.005	-0.005	-0.002	-0.002	-0.005	-0.001	-0.005	-0.003
	(0.020)	(0.020)	(0.020)	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)
	[0.529]	[0.529]	[0.530]	[0.532]	[0.528]	[0.527]	[0.528]	[527]
NB siblings	-0.059	-0.059	-0.063	-0.077	-0.061	-0.048	-0.061	-0.061
	(0.054)	(0.054)	(0.054)	(0.055)	(0.053)	(0.054)	(0.053)	(0.054)
	[1.809]	[1.809]]	[1.804]	[1.807]	[1.813]	[1.804]	[1.813]	[1.804]
Representative	0.003	0.003	0.007	0.011	0.008	0.006	0.008	0.004
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
	[0.354]	[0.354]	[0.352]	[0.350]	[0.351]	[0.353]	[0.351]	[0.353]
N	4,244	4,244	4,119	4,110	4,294	4,241	4,294	4,244

Note: The top panel of the table refers to the sample of students who participate in the experiment (N=6,211). For each of the 8 civic outcomes measured in the student endline survey (i.e., Civic Attitudes index, Altruism, Tolerance, Civic values, Democratic Participation index, Political self-efficacy, Interest in political life and Participation in Climate strike), this top panel shows the result of regressing a variable indicating that the observation for this outcome is not missing on a treatment dummy controlling for strata fixed effects. For each of the 8 outcomes, the bottom panel of the table refers to the sample of students who participate in the experiment for which the observation is not missing. For each outcome and each baseline variable, the bottom panel shows the result of regressing the baseline variable on a treatment dummy, controlling for strata fixed effects. Standard errors (in parentheses) are clustered at the school level. Variable means in the control group are within brackets. P-values are adjusted to account for multiple hypothesis testing following the procedure proposed by Benjamini & Hochberg (1995), except for the main indexes. * p<0.10, ** p<0.05, *** p<0.01.

Table B4: Attrition Analysis and Baseline Balance Checks for the Samples used in Table 3 (continued)

	(1) *CB Idx*	(2) *Absences*	(3) *Punctuality*	(4) *Exclusions*	(5) *Smaller sanc.*
Attrition					
Observation not missing	0.003	0.031	0.025	0.065	0.065
	(0.006)	(0.025)	(0.040)	(0.051)	(0.051)
	[0.982]	[0.959]	[0.940]	[0.875]	[0.875]
N	2, 290	2, 290	2, 290	2, 290	2, 290
Balancing					
Age	-0.078	-0.052	-0.037	-0.105	-0.124
	(0.096)	(0.095)	(0.096)	(0.099)	(0.099)
	[13.69]	[13.68]	[13.66]	[13.71]	[13.71]
Female	0.007	0.010	0.008	0.002	0.003
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)
	[0.490]	[0.487]	[0.487]	[0.493]	[0.493]
High SES	-0.029	-0.033	-0.038	-0.026	-0.029
	(0.025)	(0.025)	(0.026)	(0.026)	(0.027)
	[0.520]	[0.520]	[0.519]	[0.506]	[0.506]
Financial aid	0.045	0.045	0.054	0.044	0.035
	(0.034)	(0.035)	(0.036)	(0.037)	(0.037)
	[0.213]	[0.215]	[0.211]	[0.222]	[0.222]
Nb siblings	-0.142	-0.146	-0.133	-0.138	-0.165
	(0.079)	(0.080)	(0.082)	(0.086)	(0.086)
	[2.314]	[2.320]	[2.324]	[2.346]	[2.346]
Grade 4	0.137	0.111	0.101	0.176	0.195
	(0.095)	(0.094)	(0.096)	(0.098)	(0.099)
	[0.564]	[0.577]	[0.598]	[0.533]	[0.533]
Delayed student	0.032	0.031	0.036	0.034	0.032
	(0.024)	(0.025)	(0.026)	(0.026)	(0.027)
	[0.123]	[0.126]	[0.124]	[0.126]	[0.126]
N	2,251	2,227	2,184	2,115	2,115

Note: The top panel of the table refers to the French sample of students for which administrative data was collected. For each of the 5 civic outcomes measured in this data (i.e., Civic Behaviours index, Absences, Punctuality, Exclusions and Smaller sanctions), this top panel shows the result of regressing a variable indicating that the observation for this outcome is not missing on a treatment dummy controlling for strata fixed effects. For each of the 5 outcomes, the bottom panel of the table refers to the sample of students who participate in the experiment for which the observation is not missing. For each outcome and each baseline variable, the bottom panel shows the result of regressing the baseline variable on a treatment dummy, controlling for strata fixed effects. Standard errors (in parentheses) are clustered at the school level. Variable means in the control group are within brackets. P-values are adjusted to account for multiple hypothesis testing following the procedure proposed by Benjamini & Hochberg (1995), except for the main indexes. * p<0.10, ** p<0.05, *** p<0.01.

Appendix C Citizenship projects implemented

Table C1: Citizenship Projects: Main Features I

	(1) All	(2) France	(3) Greece	(4) Spain
Project topics				
Discrimination	0.64	0.56	0.71	0.69
	(0.48)	(0.50)	(0.46)	(0.47)
Social inclusion	0.53	0.50	0.71	0.47
	(0.50)	(0.51)	(0.46)	(0.50)
Cultural diversity	0.29	0.18	0.29	0.41
	(0.46)	(0.39)	(0.46)	(0.50)
Targeted population				
Elderly	0.15	0.12	0.12	0.18
	(0.35)	(0.33)	(0.34)	(0.39)
Homeless	0.12	0.14	0.17	0.08
	(0.33)	(0.35)	(0.38)	(0.28)
Migrants	0.26	0.14	0.42	0.31
	(0.44)	(0.35)	(0.50)	(0.47)
Women	0.19	0.14	0.08	0.29
	(0.39)	(0.35)	(0.28)	(0.46)
LGBT	0.11	0.10	0.04	0.16
	(0.32)	(0.30)	(0.20)	(0.37)
Disables	0.26	0.34	0.29	0.16
	(0.44)	(0.48)	(0.46)	(0.37)
Other	0.25	0.30	0.17	0.24
	(0.44)	(0.46)	(0.38)	(0.43)
No specific group	0.20	0.28	0.12	0.16
	(0.40)	(0.45)	(0.34)	(0.37)
General orientation of the project				
School oriented project	0.56	0.38	0.55	0.70
	(0.50)	(0.49)	(0.51)	(0.46)
Out-of-school oriented project	0.42	0.56	0.34	0.36
	(0.49)	(0.50)	(0.48)	(0.49)
N	123	50	24	49

Note: This table shows the percentage of citizenship projects implemented in the treatment group that relate to each of the three topics covered by the ACT intervention, the population targeted by these projects and the share of in-school and out-of-school oriented projects. One project may correspond to multiple topics and/or targeted population. Standard deviations are in parentheses.

Table C2: Citizenship Projects: Main Features II

	(1) All	(2) France	(3) Greece	(4) Spain
Hours spent in class on the project				
Total hours spent	21.26	20.86	21.17	21.74
	(10.44)	(6.04)	(8.08)	(14.61)
Preparation phase	9.47	9.51	8.92	9.70
	(5.46)	(3.92)	(3.81)	(7.32)
Implementation phase	11.40	10.94	13.04	11.02
	(8.54)	(5.66)	(6.56)	(11.46)
Implementation of ACT protocol key features				
Student voted to chose project	0.98	0.94	1.00	1.00
	(0.16)	(0.24)	(0.00)	(0.00)
Student worked in small groups	0.94	0.98	1.00	0.87
	(0.24)	(0.15)	(0.00)	(0.34)
Student groups formed randomly	0.86	0.95	0.89	0.76
	(0.35)	(0.22)	(0.32)	(0.43)
N	123	50	24	49

Note: This table describes the average characteristics of citizenship projects implemented over the 2018-2019 year by students in the treatment group, based on the endline teacher survey. Standard deviations are in parentheses.

Appendix D Robustness checks and heterogeneity of Treatment effect

Table D1: Replication of Table 3 after dropping Projects narrowly Related to our Measure of Altruism

	(1) C	(2) T-C	(3) S.E.	(4) Unadj. p-val	(5) Adj. p-val	(6) N
Civic Attitudes index	0.000	0.083**	0.038	0.027		3729
Altruism	0.000	0.070	0.043	0.101	0.303	3729
Tolerance	0.000	0.033	0.030	0.284	0.427	3622
Civic Values	0.000	0.022	0.031	0.480	0.480	3609
Democratic Participation index	0.000	0.070**	0.029	0.017		3773
Political Self efficacy	0.000	0.058*	0.028	0.041	0.062	3728
Interest in political life	0.000	-0.014	0.031	0.641	0.641	3773
Participation to Climate strike	0.000	0.077*	0.034	0.022	0.062	3730
Civic Behaviours index	0.000	0.289***	0.078	0.000		1834
Absences	0.000	0.317***	0.085	0.000	0.001	1810
Punctuality	0.000	0.152*	0.091	0.094	0.094	1767
Exclusions	0.000	0.212***	0.061	0.001	0.001	1698
Smaller sanctions	0.000	0.057	0.121	0.635	0.635	1698

Note: This Table replicates Table 3 when we drop the 22 schools that implemented a project narrowly related to our endline measure of altruism.

Table D2: Replication of Table 3 after dropping Projects broadly Related to our Measure of Altruism

	(1) C	(2) T-C	(3) S.E.	(4) Unadj. p-val	(5) Adj. p-val	(6) N
Civic Attitudes index	0.000	0.095**	0.040	0.019		3469
Altruism	0.000	0.078	0.047	0.094	0.187	3469
Tolerance	0.000	0.043	0.033	0.187	0.187	3370
Civic Values	0.000	0.049	0.035	0.168	0.187	3360
Democratic Participation index	0.000	0.070**	0.034	0.039		3509
Political Self efficacy	0.000	0.066*	0.031	0.032	0.097	3466
Interest in political life	0.000	-0.008	0.035	0.814	0.814	3509
Participation to Climate strike	0.000	0.064	0.039	0.096	0.144	3469
Civic Behaviours index	0.000	0.276***	0.069	0.000		1741
Absences	0.000	0.208***	0.069	0.003	0.004	1717
Punctuality	0.000	0.158	0.100	0.113	0.113	1674
Exclusions	0.000	0.206***	0.059	0.000	0.001	1605
Smaller sanctions	0.000	0.198***	0.065	0.002	0.002	1605

Note: This Table replicates Table 3 when we drop the 40 schools that implemented a project broadly related to our endline measure of altruism.

Heterogeneity of Treatment effect: Pre-Analysis Plan dimensions

Table D3: Treatment Effects by Geographic Origins and Country

	(1) All	(2) France	(3) Greece	(4) Spain
European				
Participation to a citizenship project	0.440***	0.567***	0.430***	0.328***
	(0.026)	(0.050)	(0.027)	(0.039)
Civic Attitudes index	0.130***	0.189***	0.148**	0.098
	(0.040)	(0.063)	(0.073)	(0.066)
Democratic Participation index	0.067**	0.117*	0.073	0.015
	(0.033)	(0.065)	(0.070)	(0.047)
Civic Behaviours index	.	0.207***	.	.
		(0.079)		
Non European				
Participation to a citizenship project	0.419***	0.472***	0.509***	0.359***
	(0.043)	(0.069)	(0.100)	(0.058)
Civic Attitudes index	0.016	0.030	0.144	-0.025
	(0.069)	(0.078)	(0.271)	(0.134)
Democratic Participation index	-0.044	-0.070	0.056	-0.010
	(0.067)	(0.102)	(0.148)	(0.091)
Civic Behaviours index	.	0.075	.	.
		(0.107)		

Note: This table replicates Table 4 when we focus separately on students with European origins only (top panel) and those with non-European origins.

Table D4: Treatment Effects by Student Gender and Country

	(1) All	(2) France	(3) Greece	(4) Spain
Female				
Participation to a citizenship project	0.443***	0.536***	0.423***	0.362***
	(0.028)	(0.052)	(0.032)	(0.043)
Civic Attitudes index	0.089*	0.154**	0.066	0.050
	(0.046)	(0.075)	(0.076)	(0.071)
Democratic Participation index	0.051	0.070	0.011	0.039
	(0.038)	(0.066)	(0.079)	(0.056)
Civic Behaviours index	.	0.214***	.	.
		(0.082)		
Male				
Participation to a citizenship project	0.419***	0.521***	0.433***	0.315***
	(0.027)	(0.042)	(0.045)	(0.043)
Civic Attitudes index	0.162***	0.173***	0.253**	0.122
	(0.048)	(0.063)	(0.107)	(0.080)
Democratic Participation index	0.069*	0.112	0.121	0.014
	(0.038)	(0.068)	(0.091)	(0.051)
Civic Behaviours index	.	0.181**	.	.
		(0.082)		

Note: This table replicates Table 4 when we focus separately on female students (top panel) and male students.

Table D5: Treatment Effects by Student Family Social Background and Country

	(1) All	(2) France	(3) Greece	(4) Spain
High SES				
Participation to a citizenship project	0.451***	0.540***	0.452***	0.347***
	(0.030)	(0.048)	(0.036)	(0.051)
Civic Attitudes index	0.115**	0.147*	-0.078	0.170**
	(0.046)	(0.082)	(0.081)	(0.067)
Democratic Participation index	0.082**	0.029	0.072	0.123*
	(0.042)	(0.066)	(0.096)	(0.072)
Civic Behaviours index	.	0.183**	.	.
		(0.086)		
Low SES				
Participation to a citizenship project	0.410***	0.527***	0.418***	0.306***
	(0.026)	(0.048)	(0.036)	(0.038)
Civic Attitudes index	0.105**	0.174***	0.237***	0.042
	(0.044)	(0.064)	(0.083)	(0.078)
Democratic Participation index	0.067*	0.165**	0.081	-0.014
	(0.036)	(0.064)	(0.078)	(0.052)
Civic Behaviours index	.	0.231***	.	.
		(0.076)		

Note: This table replicates Table 4 when we focus separately on students with relatively high family social background (top panel) and those with relatively low family social background (bottom panel).

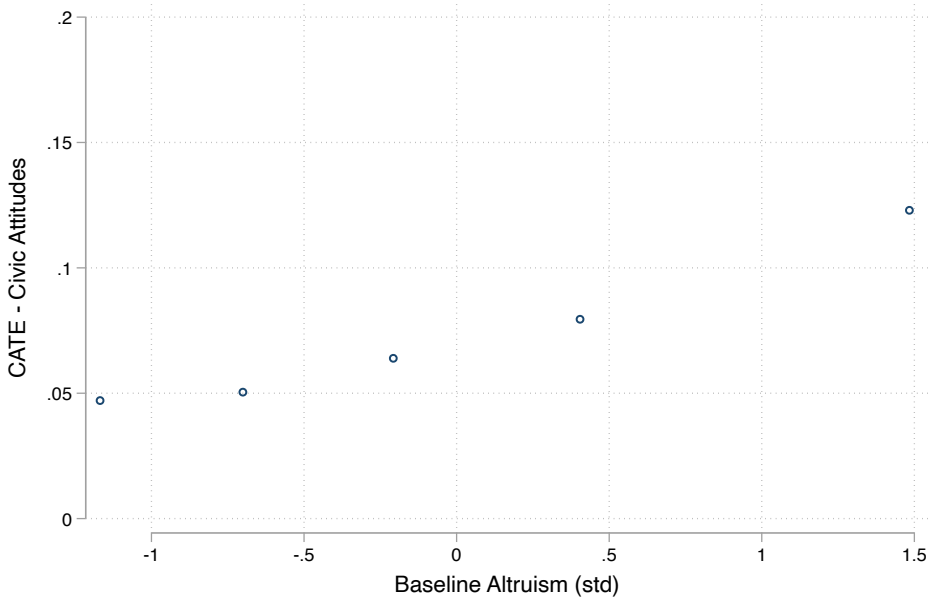
Heterogeneity of Treatment effect: Machine Learning Analysis

Table D6: Average characteristics of top vs bottom 50% of the predicted individual treatment effect distribution

	Top 50%		Bottom 50%		Difference	
	Mean	Sd	Mean	Sd	Diff.	Sd
	(1)	(2)	(3)	(4)	(5)	(6)
Outcome: Civic Attitudes						
Baseline Altruism	0.305	(1.049)	-0.451	(0.677)	0.756***	(0.03)
Baseline Interest in Politics	0.191	(1.036)	-0.207	(0.927)	0.398***	(0.03)
Representative	0.384	(0.487)	0.310	(0.462)	0.074***	(0.01)
European origin only	0.767	(0.423)	0.796	(0.403)	-0.029*	(0.01)
Female	0.493	(0.500)	0.526	(0.499)	-0.033*	(0.02)
High SES	0.504	(0.500)	0.550	(0.498)	-0.047**	(0.01)
Outcome: Democratic Participation						
Baseline Altruism	0.316	(1.028)	-0.444	(0.727)	0.760***	(0.03)
Baseline Interest in Politics	0.170	(0.982)	-0.177	(1.001)	0.347***	(0.03)
Representative	0.416	(0.493)	0.275	(0.447)	0.140***	(0.01)
European origin only	0.788	(0.409)	0.769	(0.421)	0.019	(0.01)
Female	0.529	(0.499)	0.484	(0.500)	0.045**	(0.02)
High SES	0.512	(0.500)	0.540	(0.498)	-0.029*	(0.01)
Outcome: Civic Behaviour						
Baseline Altruism	0.341	(1.086)	-0.315	(0.734)	0.655***	(0.04)
Baseline Interest in Politics	0.241	(1.026)	-0.309	(0.873)	0.550***	(0.04)
Representative	0.364	(0.482)	0.241	(0.428)	0.123***	(0.02)
European origin only	0.665	(0.472)	0.795	(0.404)	-0.130***	(0.02)
Female	0.491	(0.500)	0.489	(0.500)	0.002	(0.02)
High SES	0.449	(0.498)	0.556	(0.497)	-0.107***	(0.02)

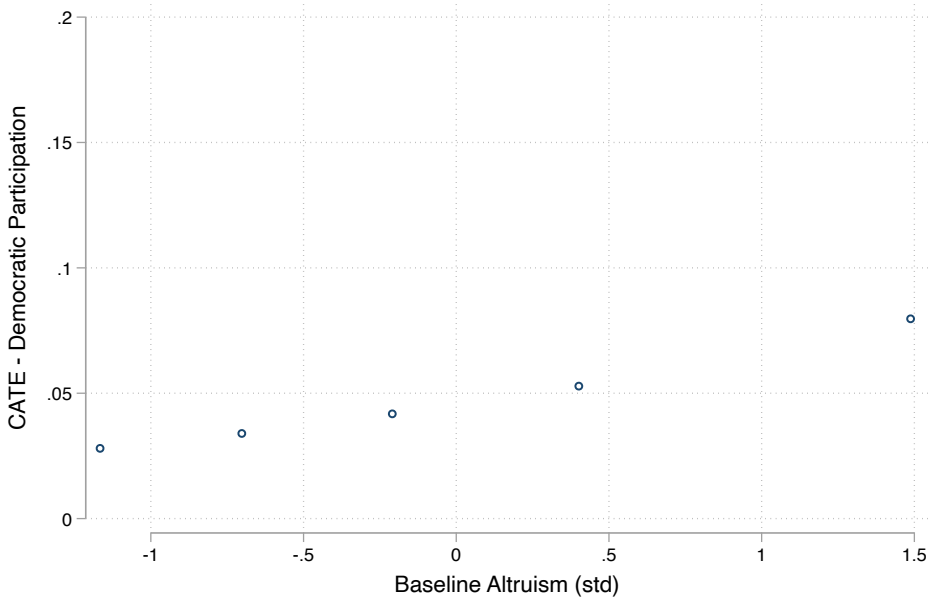
Note: This table describes the average characteristics of students belonging to the top 50% (column (1)) and the bottom 50% (column(3)) of the predicted individual treatment effect distribution, as well as the contrast between these two groups (column(5)). Predicted individual treatment effects are computed using the Generalized Random Forest method described in section 6.2.2, using the pooled sample of participating countries, except for Civic Behaviour which is available in the French sample only. * p<0.10, ** p<0.05, *** p<0.01.

Figure D1: Individual CATEs on Civic Attitudes along baseline Altruism distribution



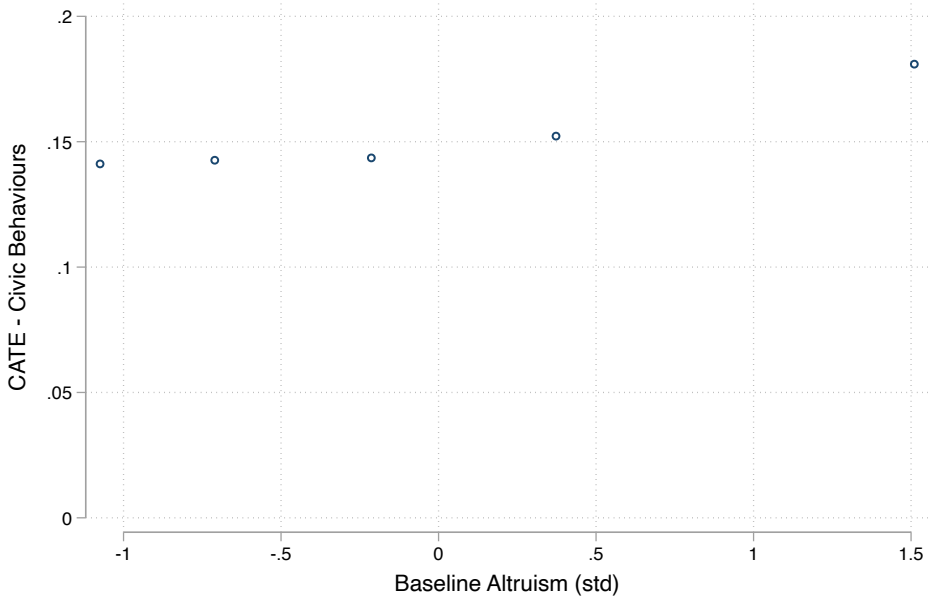
Note: This figure plots the Conditional Average Treatment Effect (CATE) on Civic Attitudes by quintiles of student baseline altruism. Individual CATEs are computed using the Generalized Random Forest method described in section 6.2.2, using the pooled sample of participating countries.

Figure D2: Individual CATEs on Democratic Participation along baseline Altruism distribution



Note: This figure plots the Conditional Average Treatment Effect (CATE) on Democratic Participation by quintiles of student baseline altruism. Individual CATEs are computed using the Generalized Random Forest method described in section 6.2.2, using the pooled sample of participating countries.

Figure D3: Individual CATEs on Civic Behaviours (France only) along baseline Altruism distribution



Note: This figure plots the Conditional Average Treatment Effect (CATE) on Civic Attitudes by quintiles of student baseline altruism. Individual CATEs are computed using the Generalized Random Forest method described in section 6.2.2, using the French sample of students.

Appendix E Civic Education in Participating Countries

Instruction time

In France, citizenship education is taught as a separate subject for the whole 12 years of primary and secondary education, from age 6 to 18. In primary education, the average instructional time devoted to this subject is 30 hours per year. It is 28 hours in lower secondary education and 16 hours in upper secondary education. In primary and secondary education, citizenship education is also integrated in the curriculum of other subjects (history, geography, philosophy).

In Greece, citizenship education is taught as a separate subject for 4 years in primary and secondary education (at age 10-11, 13-14, 15-17). The instructional time devoted to this subject is on average 8 hours per year in primary education, 15 hours per year in lower secondary education and 15 hours in upper secondary education. In primary education, citizenship education is integrated in the curriculum of the other subjects.

In Spain, citizenship education is taught as a separate subject for 4 years in primary and secondary education (at age 10-12, 14-15, 16-17). The instructional time devoted to this subject is on average 8 hours per year in primary education, 17 hours per year in lower secondary education and 35 hours in upper secondary education. In primary and secondary education, citizenship education is also integrated in the curriculum of various other subjects.

Skills to be acquired and assessment

In France and Spain (as in many other countries), four skills are defined as essential by the national curriculum for students to become active and responsible citizens:

- Civic-related skills (participating in society through, for example, volunteering, and influencing public policy through voting and petitioning);
- Social skills (living and working with others, resolving conflicts);
- Communication skills (listening, understanding and engaging in discussion);
- Intercultural skills (establishing intercultural dialogue and appreciating cultural differences).

In Greece, however, civic-related skills as defined in this way are not included in the national curriculum.

In all three countries, educational authorities provide tools to help teachers assess the civic knowledge, skills and attitudes acquired by students through a range of subjects or through other school experiences. In France, students' social and civic competences are specifically evaluated by teachers at various key points in compulsory education (2nd and 5th years of primary education and last year of lower secondary education), using a standardized personal booklet. In all three countries, students' marks in citizenship education (taught as a separate compulsory subject) are generally taken into account to decide transition

to the next level of education. For example, in France, the final written exam for lower secondary education addresses French language, mathematics, history-geography and civic education.

Class councils

All three countries in our experiment have established official regulations for the creation of councils at the class level. Class councils are formal bodies set up to deal with class-level matters. They usually meet several times a year, for example at the end of each term of instruction. Their composition varies depending on official regulations and/or school decisions, but they generally include representatives of teachers, students and parents. Students' representatives are elected by the students in the class. Their most common role is consultative. They help circulate information between teachers and students and bring student problems to the attention of teachers.

Student councils and school governance

The student council's mandate relates mainly to formulating rules governing every-day school activities. The acquisition of educational materials, such as textbooks and software, and the supervision of budgetary matters are also activities which fall within the remit of student councils. However, student councils do not enjoy real decision-making power in any of the activities in which they are involved. Their role is advisory and is to ensure that students' views are heard. In France and Greece, members of the student councils are directly elected by all students in the school. In Spain, student councils are composed of both class representatives and members of school governing bodies who are directly elected.

In all three countries, students also participate in school governing bodies. In France and Spain, student representatives appointed to school governing bodies are directly elected by all the students of the school. In Greece, they are nominated by the student council. As representatives on school governing bodies, students are involved in decisions concerning the development of the school educational plan, the establishment of the rules governing school life, the choice and organization of extra-curricular activities and the supervision of budgetary matters. Student representatives play a mostly consultative role.