IS SCHOOL-BASED FINANCIAL EDUCATION EFFECTIVE? SHORT AND LONG-TERM IMPACTS ON STUDENTS, PARENTS, AND TEACHERS

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Abstract

This paper studies the potential of school-based financial education. Relying on a large-scale experiment in Peru, the study identifies significant improvements on financial skills. Novel credit bureau data uncovers long-lasting effects on financial behavior: three years later, treated students are less likely to have negative records due to unpaid/delinquent bills or credit card statements. Teachers accrue financial literacy gains that double those identified among students and they become more likely to save, particularly through formal channels. Two years after the intervention, teachers borrow more from banks and reduce their delinquency rates, while parents transition away from expensive sources of credit.

Keywords: Financial Education, Youth, Self-Control, Savings, Credit records, Treatment Effects, Long-term impacts

JEL Codes: D14, D91, J24, O16

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1 Introduction

Financial education tends to trigger heated debates in academic and policy forums. After the financial crisis, it has been enthusiastically and intensely promoted as a means to foster financial stability. The recent global health crisis has dramatically exposed the extent of financial fragility in households all over the world, demanding a focus on policy agendas that support strong social protection systems and promote financial literacy and resilience. Under the premise that they will face increasing financial risks and deal with more complex financial systems than previous generations, youth is one of the priority targets in the arena of financial education [OECD/INFE, 2015; OECD, 2014]. By 2017, more than 70 countries were developing or implementing a national strategy on financial education, which often includes the introduction of the content in the school curricula [OECD, 2017].

Despite the evidence supporting a link between financial literacy and household wealth and economic outcomes [Behrman et al., 2012; Lusardi and Mitchell, 2014; Lusardi et al., 2017; Bianchi, 2018; van Rooij et al., 2012], many are skeptical that financial education programs can effectively improve financial skills. The increased availability of experimental studies in the school setting supports large and robust impacts of school-based financial education on financial literacy and preferences (see [Kaiser and Menkhoff, 2019] for a meta-analysis and Frisancho [2019] for a survey on experimental studies), but the ability of these programs to yield long-lasting effects on financial behavior is still under scrutiny. Learning depreciates and financial systems quickly change, which may render the effects of financial education irrelevant once youth reach adulthood and start to make financial choices [Willis, 2011]. Recent studies in the United States take advantage of non-experimental changes in graduation requirements to complete financial education courses and/or variation across states in the enactment of these requirements to evaluate the impact of financial education on credit behavior and asset accumulation after graduating from high school. Most of these studies identify a positive impact of financial education on financial behavior, but no experimental study has yet to track students over time and measure the long-term effects of financial education.[1]

This paper is timely, as it contributes to the ongoing debate on the effectiveness of financial education. Exploiting experimental variation in the delivery of mandatory personal finance lessons in Peru, the study measures the short-term and long-term impacts of school-based financial education on high-school students' financial skills and behavior. Moreover, this paper extends the focus on the direct beneficiaries of the program and measures its impact on the financial behavior of parents and teachers. This is a novel and important contribution, as these potential gains may alter the estimated effectiveness of these programs.

This paper relies on data from a large-scale randomized controlled trial (RCT) implemented

[1] See Bernheim et al. [2001]; Brown et al. [2016]; Cole et al. [2016]; Urban et al. [2018]; Urban and Stoddard [forthcoming]. Only Cole et al. [2016] fails to find any impact of personal finance courses, but they find that additional mathematics lessons leads to greater financial market participation, investment income, and better credit management.

in 300 public high schools, targeting grades nine through eleven. The treatment was randomized at the school level and consisted of the delivery of financial education lessons during the school day, between August and December 2016. The instructors in charge of the lessons were school teachers who were trained in the materials. Therefore, teachers are treated both directly through the training they receive as well as indirectly when delivering the lessons in the classroom. Parents or guardians were not specifically targeted by the intervention but were potentially exposed to the content both through homework and interactions with their children.

The impact of the treatment is measured relying on both survey and administrative data sources. Students in the treatment and control groups were tested on their financial knowledge and surveyed both before and after the delivery of the lessons. Survey data in both rounds included questions on personality traits related to financial behavior as well as on shopping and saving habits. The content of the financial literacy exam varied by grade, depending on the curricula, and included questions on the differences between needs and resources and budgeting (ninth grade); financial products and services and forward-looking choices (tenth grade); and responsible financial consumers and access to information in financial markets (eleventh grade). Teachers in treated and control schools completed an exit financial knowledge exam and an exit survey covering questions on financial attitudes and behavior. Access to administrative records provides information on students' cumulative grade point averages (GPAs) in three consecutive academic years, 2015 through 2017. Furthermore, credit bureau data gathered between December 2017 and June 2019 provides information on access to credit and delinquency rates for students, parents, and teachers.

The program had strong effects on the financial knowledge of young students in the short run. Relative to the control group, scores in the financial literacy exit exam applied five months after the beginning of the pilot increase by 0.16 SD. This effect is large when compared to voluntary after-school programs [Berry et al., 2018; Jamison et al., 2014] and in line with similar school-based interventions [Bruhn et al., 2016; Bover et al., 2018]. The impact of the program is equivalent to a 4% improvement in Peru's performance in the 2015 PISA financial literacy assessment of 15-year-old students, which would halve the gap relative to Chile, the next country in the ranking. The introduction of financial education lessons did not hinder performance in other courses and had no effect on grade progression in neither the short-term nor the long-term. These results prove that the time diverted away from other courses and into personal finances did not jeopardize academic achievement.

Although not specifically intended, the intervention modestly improved the level of self-control in the short-run, as measured by Tangney et al. [2004]'s scale. This scale captures people's ability to control their impulses, alter their emotions and thoughts, and interrupt undesired behavioral tendencies and refrain from acting on them (e.g., "I say inappropriate things"). The treatment, however, did not have any effect on time preferences, risk aversion, impulsiveness, or consciousness. The treatment also led to improvements in students' shopping habits but the probability to open a savings account remained unaltered. However, by June 2019, three years after the pilot's launching, long-lasting effects on financial behavior are identified. Credit bureau data indicates that treated

students are 6% less likely to have negative records due to unpaid/delinquent bills or credit card statements, starting off their credit histories in better shape relative to the control group.

Although the treatment did not target parents directly, interaction within the household with their teenage children may facilitate the transmission of personal finance knowledge, leading to changes in financial behavior. Indeed, two years after the intervention, parents in the treatment group seem to transition away from more expensive sources of credit, yet this has no effect on their delinquency rates.

The effect of the program on teachers' knowledge and behavior is quite impressive. Getting trained and imparting the financial education lessons improved teachers' financial skills by 0.32 SD in the short run, an impact twice as large as that identified among students. Teachers in the treatment group did not exhibit changes in their shopping habits but they recorded a 10% increase in their probability to save, with a disproportionate preference for formal mechanisms over informal mechanisms. The probability to save formally increases by 22%, vis-a-vis a 10% increase in the likelihood to save informally. Even if social desirability bias is present in teachers' self-report of savings behavior, administrative credit bureau records two years after the launch of the intervention still exhibits significant effects on teachers' credit behavior: the probability that teachers in the treatment group obtain formal bank loans increases by 13% and their delinquency rate decreases by 15%. Treatment on the treated effects reveal that the impact on teachers is concentrated among those who covered a greater share of the financial education curriculum in class.

The results suggest that the provision of financial education in school has great potential, due to its direct and multiplying effect on adults close to the targeted youth. At a cost per student of US$ 4.8, the program yields a very low cost-effectiveness ratio in terms of students' financial skills. The impacts recorded on children's credit behavior in the long run as well as those recorded on financial knowledge and behavior among adults (particularly teachers) further contribute to the cost-effectiveness of the program. All in all, this paper shows that school-based financial education is effective, has low delivery and opportunity costs (in terms of academic outcomes), can shape youth's financial choices once out of school, and may even contribute to shape the financial behavior of adults close to the targeted youth.

This paper contributes to the literature on the effectiveness of financial literacy programs for youth. The two papers most closely related to this study are Bruhn et al. [2016] and Bover et al. [2018], which also exploit large-scale RCTs targeting high school students to quantify the impact of school-based financial education in Brazil and Spain, respectively. Although independently designed, the program evaluated in Bruhn et al. [2016] closely resembles the Peruvian experience. Indeed, this paper builds on the authors' experimental design and identifies similar effect sizes on students' financial literacy. Another related paper is Luhrmann et al. [2018], which evaluates the effect of school-based financial education on German adolescents' time preferences.

This study differs from previous papers on the effectiveness of school-based financial education in three important ways. First, it relies on high-stakes data to measure the impact of financial education on financial behavior and its opportunity cost in terms of academic outcomes. This

paper poses an advantage relative to Bruhn et al. [2016] and related studies by complementing survey self-reported data with individual-level administrative academic and credit bureau records.[2] Academic records are crucial to measure the program's opportunity cost in terms of grades and passing rates. Credit bureau records provide reliable data to measure long-lasting changes in financial behavior due to the delivery of school-based financial education. Second, this study is the first piece of experimental evidence supporting the ability of school-based financial education programs to influence financial decisions during adulthood. Finally, another novel contribution of this paper is its focus on the impact of financial education on the instructors delivering the training. The impact of the program on teachers' financial behavior, particularly their increased preference for formal saving and credit instruments, validates the role of financial education as a complement to financial inclusion efforts. As access to formal financial services rapidly increases, take-up and usage rates lag behind [Karlan et al., 2016]. Improving consumers' financial knowledge and capabilities may help bridge the gap between underserved population segments and formal financial institutions.

2 Experimental Design

2.1 The Intervention

In 2015, the Peruvian government launched the National Financial Inclusion Strategy, which included, as a high-priority goal, the provision of school-based financial education to all primary and secondary students by 2021. In this context, the Ministry of Education (MINEDU) partnered with the Superintendency of Banks and Insurance (SBS) and the Center of Studies (CEFI) of the Peruvian Association of Banks to develop a pilot to provide financial education to high school students. Together, they developed student workbooks for each of the last three high school grades (equivalent to ninth, tenth, and eleventh grades in the United States) as well as a teacher's guide. The team also designed and implemented a 20-hour teacher training plan divided into five sessions, which included a training component on the financial literacy contents (four sessions) as well as a pedagogical one (one session).[3] MINEDU encouraged teachers to attend the training sessions and school principals were requested to facilitate teacher participation in the training. Participants received both a transport subsidy (mostly in kind) and a full meal during the workshop.

The content of the workbooks varies by grade and it is fully detailed in Table A.1. The lessons provided to ninth-graders focused on the differences between needs and resources and budgeting. The lessons imparted to tenth graders focused on financial products and services and forward-looking choices. The curriculum for eleventh-graders covered responsible financial consumers and access to information in financial markets.

The sessions were delivered during the regular classes of the course "History, Geography, and Economics" (HGE). The MINEDU instructed teachers of HGE to incorporate the material in the

[2] Bruhn et al. [2016] collect passing rates from school records but only aggregated at the grade-level.

[3] The content of the pedagogical session included a review of the background of the program as well as the use of teaching tools such as charts, figures, and case studies.

Economics portion of the course and monitored their engagement with the program. However, since the content was not incorporated as a stand-alone course in the official curriculum, MINEDU could not enforce full compliance of the teachers in the classroom. Nevertheless, once a teacher delivered the personal finance lessons within the HGE regular course, the content became subject to performance evaluation and was considered high-stakes from the students' point of view.

2.2 Study Timeline

Figure 1 organizes the intervention activities that took place during the 2016 calendar year (in bold) as well as the evaluation activities that were carried out between 2016 and 2019.[4] Teachers' training workshops were conducted by the SBS and the MINEDU between mid-February and March, before the beginning of the school year. Additional replica sessions conducted by trained teachers were organized during the first month of classes to extend coverage of the training. The distribution of students' workbooks to schools started in May and was completed successfully in all treated schools by July. The delivery of the sessions in class began during the second half of the 2016 school cycle; August through December. To ensure that compliance levels were high, regular monitoring phone calls took place September through November.

Treated and control schools were visited twice in 2016 to collect survey data and measure the financial skills of both students and teachers. Self-administered students' baseline surveys and financial literacy entry exams were simultaneously collected during May. Exit surveys and exams for students and teachers were applied toward the end of the academic year.[5] Individual-level data on grades and passing rates for three consecutive academic years, 2015 through 2017, were provided by the MINEDU for all the schools in our sample. Credit bureau data was obtained from EQUIFAX, the leading private credit bureau in Peru. Students, parents, and teachers in our survey sample were searched in EQUIFAX records, which capture a snapshot of clients' credit standing and allow us to observe loan balances by default status and type of lender. These data also include negative records due to late or skipped payments of loans, service bills (electricity, water, cell phone, personal taxes, etc.), and credit cards (mainly from department stores in the case of youth). EQUIFAX data were collected in December 2017, June 2018, December 2018, and June 2019. Due to budgetary restrictions, parents' credit records were only obtained in June 2018.

2.3 Sample Selection and Randomization

The implementation partners decided to focus on full-day public high schools in urban areas in six regions of the country: Lima and Callao, Arequipa, Piura, Junin, Puno, and San Martin. Due to logistics, the universe of schools was further limited to those close to cities. After imposing

[4] All intervention activities were fully funded by the implementation partners, MINEDU, SBS, and CEFI. All evaluation activities (i.e., survey data collection, exam application, or obtaining access to administrative records) were jointly funded by the MINEDU and the Inter-American Development Bank.

[5] All data collection efforts were conducted once the Chesapeake Institutional Review Board (IRB) determined that the evaluation activities were exempt from IRB oversight. The fieldwork in both survey and exam application rounds was conducted by a local firm, USKAY, which has ample experience in large scale projects.

some additional restrictions (directly managed by the MINEDU, single-grade schools, and number of students by grade above the fifth percentile and below the 95th percentile), 308 schools were eligible to participate in the pilot.[6]

The sample of eligible schools was stratified by region. Following Bruhn and McKenzie [2009] and Bruhn et al. [2016], schools were paired by their similarity within each of the six strata.[7] This procedure returned 150 matched pairs, yielding a final experimental sample of 300 schools. Within each pair, schools were randomly assigned to either the control or the treatment group. The spatial distribution of control and treatment schools is plotted in Figure A.1.

Tables 1 and 2 provide basic descriptive statistics at the student and teacher level, as well as balancing tests of the randomization. Consistent with the random treatment assignment, very few significant differences are detected across groups. In any case, the analysis will include background controls as well as initial levels of the dependent variable whenever available.

2.4 Data and Measurement

Exam and survey data were collected for students and teachers in the 300 schools of the experimental sample. Within each school, one classroom from each targeted grade was chosen at random to conduct the surveys and apply the exams. The main study sample comprises about 20,000 students in 900 classrooms and 453 teachers.

Students' baseline survey collects basic information on socioeconomic characteristics of the household, students' future aspirations, parental supervision, truancy, and the number of hours the student works per week. Additionally, the questionnaire gathers information on five personality constructs and preferences that may influence financial choices: conscientiousness, self-control, intertemporal preferences, impulsiveness, and risk aversion.[8] The survey also measures students' school engagement[9] and collects data on previous exposure to financial education programs. The survey measured financial behavior on several fronts: formal savings, budgeting, consumption and

[6] To establish the number of schools required for the evaluation, power calculations were performed with the following parameters: significance level of 0.05, statistical power of 0.8, minimum detectable effect of 0.1SD, R^2 of the outcome equation of 0.1, intra-cluster correlation of 0.1, and a sample size of 40 students per grade. Under these assumptions, 300 schools were required, 150 in each treatment arm.

[7] The Mahalanobis' distance is minimized for 10 selected characteristics: electricity connection; water and drainage services availability; presence of a principal; number of desks in good condition; number of teachers; number of students in ninth, tenth, and eleventh grades; dropout rate; passing rate; and whether the school belongs to the experimental sample of any other ongoing pilot.

[8] Conscientiousness, which is closely related to deliberative thinking, was measured using the Big Five Scale for this attribute [Pervin and John, 1999]. Self-control is measured by Tangney et al. [2004]'s scale, which attempts to measure people's ability to control their impulses in general, not only those related to financial behavior. Impulsiveness is measured by the Barratt Impulsiveness Scale [Orozco-Cabal et al., 2010], which reflects six correlated first-order constructs (attention, motor, self-control, planfullness, cognitive complexity, perseverance, cognitive instability), which in turn, form three second-order factors (attention, motor, and non-planning). The survey focuses on the attention and non-planning factors only. Time inconsistency is defined as in Ashraf et al. [2006]. These preferences and personality traits are measured relying on extensively tested scales that are specifically designed to be self-rated. See Appendix B for more details on the scales used.

[9] The scale to measure student engagement comes from the Student Engagement in Schools Questionnaire and measures behavioral engagement: effort and persistence [Hart et al., 2011].

saving habits, and financial autonomy.[10] It also measured monthly cash flows derived from different income sources including allowances, gifts from family and friends, and labor. Despite their young age, Table 1 shows that 40% of the students in the sample perform paid work activities. These students record an average (median) monthly income of US$ 104 (US$ 44), with a third of their income coming from labor earnings. But even among those who do not declare to work, average (median) monthly income amounts to US$ 79 (US$ 30). Figure 2 shows the income distribution of students by source and number of hours of work per week. Interestingly, as the number of hours worked increases, the dispersion in the distribution of labor earnings also goes up.

The instrument used at endline was exactly the same as the one used at baseline, with the exclusion of the questions related to socioeconomic characteristics. The survey questionnaire applied to teachers at endline was very similar to the students' instrument, but additional questions were added to capture their professional background and experience, as well as their formal and informal savings holdings. Teachers in the treatment group also completed an additional survey module that inquired them about their progress with the financial education material in the classroom.

Students' financial literacy exams were grade-specific and consisted of 15 questions. Four questions on the topics of risk, return and liquidity, intertemporal spending choices, budgeting to save, and the importance of investing in skills and education were drawn from the 2008 National Jump$tart Coalition Survey of High School Seniors and College Students.[11] The remaining questions tested students on the topics covered in each grade-specific workbook. Most questions were drawn from a teacher entry exam designed by the SBS and CEFI,[12] but a few were developed by the author to cover all topics included in the workbooks. The same grade-specific exam was administered at baseline and endline. The exit exam taken by teachers was developed by the author and included the four questions from the Jump$tart questionnaire as well as questions from the students' exams for ninth grade (4), tenth grade (4), and eleventh grade (3). Teachers had no access to the students' exam questionnaires at baseline and the exit exam was applied to teachers and students during the same school visit. This ensures that teachers could not teach to the exam during the school year.[13] The psychometric properties of the exam based on students' baseline data are presented in Table A.2 while Appendix C presents the exam instruments applied to students and teachers.

Provided that non-compliance and non-response are orthogonal to the magnitude of the treatment impact, the experimental design is robust to the exclusion of pairs in which at least one school

[10] The financial autonomy scale was borrowed from Bruhn et al. [2016].

[11] See Mandell [2009]. The Jump$tart Coalition for Personal Financial Literacy is a U.S. nonprofit coalition of 150 organizations that works to promote financial literacy among students. Its target population includes students between pre-kindergarten and college. Jump$tart publishes the National Standards in K-12 Personal Finance Education, which delineate the personal finance knowledge and ability that young people should acquire during their schooling years between kindergarten and twelfth grade. Since 2000, Jump$tart has administered the Survey of Personal Financial Literacy among high school students.

[12] SBS and CEFI developed an entry exam but it was only taken by teachers in the treatment group who attended at least one of the training sessions.

[13] Still, robustness checks that exclude questions that come from the teachers' SBS entry exam from students' baseline and exit exam scores are presented in the appendix.

does not comply with the treatment assignment and/or has incomplete survey records. Indeed, two pairs of schools from the original experimental sample are excluded from the analysis due to non-response either in the baseline or the endline exam and survey. The main analysis sample thus consists of 296 schools, with a total population of approximately 60,000 students. Baseline survey records are available for 20,641 students (7,008; 6,845; and 6,788 in ninth, tenth, and eleventh grade, respectively), roughly a third of the targeted population of high school students. The exit survey and exam were applied to 19,487 students (6,634; 6,496; and 6,357 in ninth, tenth, and eleventh grade, respectively) and 453 teachers. The attrition rate between baseline and endline among students is 17%, but it is not differential by treatment status (see Table A.3). The sample of interest to evaluate the impact of the intervention includes all students with records in the follow-up survey and exam, as they have data on the outcome variables after exposure to the intervention. Table A.4 repeats the balance check for the endline sample.[14]

MINEDU's academic records provide data for all high school students enrolled in any of the 300 schools of the experimental sample. This data contains individual-level information on cumulative grades by course and grade progression at the end of three consecutive academic years; 2015 through 2017.[15] Access to these records offers the possibility to estimate treatment effects on academic outcomes among students in the survey sample as well as among the total targeted population of students in the experimental sample of schools (∼60,000 at baseline). When the exit survey and exam data are matched with performance records from 2016, the success rate is extremely high at 98%. The share of students that matched with 2015 academic records is still high, at 91%. Focusing on ninth and tenth graders who were still in school in 2017, the match rate is 87%.

Credit outcomes up to three years after the intervention were provided by EQUIFAX, a private credit bureau that concentrates loans data from almost all lenders in the Peruvian credit market.[16] EQUIFAX's data captures an individual's credit standing at the time in which he or she is searched, both in terms of their positive and negative records. Positive records correspond to loan current balances by default status and source of the funds, distinguishing between loans from banks and financial institutions supervised by the SBS from those that come from formal but non-regulated institutions such as microfinance NGOs and cooperatives. Even though the latter are not really informal lenders, they tend to relax the minimum requirements to get a loan at the cost of higher interest rates when compared to banks [Campion et al., 2010]. In addition to loan balances, the credit bureau's data also capture negative records; that is, late or skipped payments of service bills and credit cards. Individuals in the credit bureau's database can therefore have a credit history due to outstanding loan balances and/or delinquent behavior within the financial system or with other

[14]Since the survey questionnaires were self-rated, higher levels of missing data are expected relative to face-to-face application through a surveyor. As shown in Table A.7, the share of missing records varies depending on the construct and the survey round; however, it is not significantly different by treatment arm (with the exception of one in 20 variables).

[15]All grades are normalized by school quality to make them comparable across schools. See Appendix D for more details on the normalization implemented.

[16]EQUIFAX collects credit information from all regulated financial institutions and most of the non-regulated lenders in the market. Although non-regulated lenders are not mandated to share their borrowers' credit records, EQUIFAX is the only firm in Peru that includes over 90% of them in its records.

service providers. For instance, youth will be less likely to borrow due to age constraints, but they could still have a (negative) credit history due to unpaid service bills or credit card statements.

The search in EQUIFAX's records relied on an algorithm that matched students and teachers based on their names and national identification documents. Parents were only matched relying on names, as this was the only identifier collected for them during the students' baseline survey. EQUIFAX's records corresponding to students and teachers in the survey sample are collected at four dates, every half-year between December 2017 and June 2019. The credit records of students' parents were only retrieved in June 2018. The construction of the outcome variables for students and teachers takes advantage of the availability of successive rounds of data. For example, the indicator variable of having bank credit by June 2018 is coded as one when the individual was reported to the credit bureau by a bank either in December 2017 or June 2018.

Since only a third of adults borrows from formal credit sources in Peru,[17] the match rate between survey and EQUIFAX records is expected to be far from perfect. The match rate with EQUIFAX records is expected to be higher among adults, whose experience with the financial system is more extensive. Since teachers are formal public employees whose wages are deposited in a national bank account, their match rate is naturally higher than that for parents: virtually all teachers in our sample are matched with the EQUIFAX database (98% by June 2018 and 96% by June 2019) while the match rate among parents is 75%.[18] Matching students with EQUIFAX's credit bureau data naturally yields a much lower success rate. Legal adulthood in Peru begins at age 18 and youth often face tight borrowing constraints due to low labor participation rates and income levels. Indeed, by June 2018, only 7,850 students in the follow-up sample were legal adults and the match rate in the control group was 23%. By June 2019, 13,714 students reached legal adulthood and the match rate with credit records in the control group increased to 30%.

2.5 Teachers' Compliance with the Treatment

Teachers were encouraged to attend the training sessions offered to them and to deliver the material in the classroom. However, the MINEDU could not impose either of these activities as mandatory. Despite these conditions, teachers' engagement with the pilot was high. On one hand, about 73% of teachers in the treatment group attended at least one training session and 43% had perfect attendance. On the other hand, most teachers also complied with teaching the financial education material in the classroom. Teachers' self-report of their progress in the endline survey shows that 48% of the HGE teachers in the treatment group reported that they had taught all the lessons and 21% had covered part of the material. Only a third of the teachers report not teaching any lessons of the workbook. In the sub-sample of treatment schools in which at least one teacher attended all sessions, 55% of the teachers covered all the lessons. Due to partial compliance with the treatment, the measured impact of the pilot should be interpreted as a lower bound of the inclusion of the

[17] See official statistics here `https://intranet2.sbs.gob.pe/estadistica/financiera/2019/Junio/CIIF-0001-jn2019.PDF`.

[18] The quarter of parents that remain unmatched may correspond to problems with the merge or may reflect lack of records in the financial system.

content in the regular school curriculum.

Teachers were instructed to include the financial education material in the Economics portion of the HGE class. However, they were not offered additional guidelines to adjust the time allocation to other topics covered in the course.[19] Survey data reveals that, on average, teachers chose to incorporate the new material by significantly reducing the time allocated to teach history, politics, and world news, while leaving the time allotted to economics unchanged. This may respond to potential synergies between the economics portion of the course and the financial education material recognized by the teachers.

3 Estimation Strategy

The impact of the financial education program on different outcomes is measured as the difference across treatment arms, captured from an intention-to-treat, OLS regression:

$$y_{ijp} = \alpha + \beta T_{jp} + \gamma y_{ijp}^{\text{pre}} + \delta X_{ijp} + \sum_{p} \theta_p d_{jp} + \epsilon_{ijp}$$

where y_{ijp} could be financial knowledge, socioemotional traits, preferences, or financial behavior of student/parent/teacher i in school j from pair p. The regressor y_{ijp}^{pre}, the baseline value of y_{ijp}, is included when evaluating students' financial literacy, academic performance, and self-reported outcomes in the surveys. Implementation of an analysis of covariance (ANCOVA) to estimate the treatment effects leads to large improvements in power compared to a difference-in-difference specification [McKenzie, 2012]. Still, whenever possible difference-in-difference estimates are presented as a robustness check in Appendix A.

The impact of the treatment is measured by β, the coefficient on the indicator of treatment status, T_{jp}, which is equal to one whenever the school was randomized into the treatment group and zero otherwise. All regressions include additional individual and background characteristics as controls, X_{ijp}, and a set of dummies, d_{jp}, identifying the pair of schools matched.

Given the multiplicity of outcomes evaluated, the Bonferroni correction is implemented to deal with the potential issue of simultaneous inference. For each family of outcomes, Bonferroni sets the significance cut-off at α/n, where α denotes the significance level and n is the number of outcomes in each family. The families of outcomes for which this correction is implemented are: academic outcomes (GPAs and probability to be promoted to the next grade); socioemotional skills and preferences (self-control, probability to be hyperbolic discounter, probability to be risk averse, consciousness, and impulsiveness); shopping habits (probability to prepare a budget, shopping index, financial autonomy); and credit behavior (probability to have credit records, probability to have a loan, probability to have a bank loan, probability to have a micro loan, probability to default or have a loan/bill in arrears).

[19] Unfortunately, teachers allocate a single grade for the course as a whole at the end of each academic year. Performance in the different topics covered within the course is not observed in the administrative records.

The intervention did not have perfect compliance levels within the treatment group (see subsection 2.5). Non-compliance was one-sided as teachers in the control group did not attend the training workshops and students from the control group did not receive the lessons or the workbooks. Estimation of the average treatment effect on the treated (ATT) is feasible due to the availability of attendance data for the teachers' training workshops at the school level and teachers' self-reported measures of coverage of the material in the classroom.

To estimate ATT among students, teachers' attendance to the training is used to measure effective treatment. This level of compliance is more appropriate than compliance at the student/classroom level as it provides a primary measure of compliance: teachers need to be trained in order to deliver the content in class.[20] Compliance is defined at the school level by Z_{jp}, which equals one if at least one of the teachers attended one or more of the training sessions. ATT effects can then be obtained from estimating β^{TOT} by instrumenting Z_{jp} with the random assignment of the treatment:

$$y_{ijp} = \alpha + \beta^{\text{TOT}} Z_{jp} + \gamma y_{ijp}^{\text{pre}} + \delta X_{ijp} + \sum_{p} \theta_p d_{jp} + \epsilon_{ijp}$$

ATT effects on teachers are also estimated to identify the effect of varying degrees of engagement with the program. To measure effective compliance, Z_{ijp} is defined at the teacher level based on their self-report of the coverage of lessons (see Section 2.5) in the classroom.

4 Results

4.1 Treatment Impacts on Students

Column 1 in Table 3 presents the effects of the school-based financial education program on financial literacy at the end of the implementation year. In general, the program was extremely effective in improving high school students' financial knowledge. The treatment increases scores in the exit financial literacy exam by 0.16 SD relative to the control group. These average gains are closely aligned with the experimental evidence available to date on school-based programs. Figure 3 presents the results from a meta-analysis conducted with 10 experimental studies targeting children and youth and confirms that the impact of the Peruvian high school program on financial knowledge is very close to the average effect size in the literature, estimated at 0.17 SD. The results are particularly comparable to those reported by similar programs also targeting high school students in Brazil [Bruhn et al., 2016] and Spain [Bover et al., 2018].

Some may worry that the results on financial knowledge are driven by teachers teaching to the test, specially since some of the questions in the students' exam were based on the entry exam that teachers in treatment schools took at the beginning of their training workshops (see Sub-Section 2.4). Table A.8 in the Appendix rules these concerns out: average treatment effects are quite robust

[20] Measuring compliance at the student level demands access to records on students' lesson attendance and these were not collected.

even when financial skills at baseline and endline are only measured using the questions elaborated either by Jump$tart or by the author.

One recurring argument against the introduction of financial education lessons in the school setting is the substitution of time and resources away from other courses, potentially sacrificing student learning in other areas. Columns 2 through 5 in Table 3 suggest that the opportunity cost of introducing personal finance content is not high enough to hinder academic performance in other courses. Columns 2 and 4 show that the treatment has no significant effect on cumulative grades, neither in the short-term nor in the medium run.[21] The intervention does not yield unintended perverse effects on dropout either (columns 3 and 5). This result is in contrast with Bjorvatn et al. [2015], who identify negative effects on school retention. However, this could be explained by their focus on entrepreneurship in the curriculum imparted, which is absent in the Peruvian case.

Teaching financial skills entails covering constructs such as opportunity cost and intertemporal trade-offs. This content may impact individual time preferences or patience-related attributes. This is particularly important since we still know little about the malleability of soft-skills and preferences and the extent to which environment can shape them.

Columns 1 and 2 in Table 4 present the treatment impacts on students' ability to regulate their behavior and the probability of having hyperbolic time preferences, respectively. The treatment successfully fosters the development of self-control skills with an average effect of 0.03 SD. Although this impact seems modest and does not survive multiple hypothesis testing, it is still an important finding. The intervention was not specifically designed to target this outcome, but it was still able to impact self-control, which is a soft skill linked to better financial and health outcomes [Moffitt et al., 2011; Gathergood, 2012; Strömbäck et al., 2018]. Developing lessons with more specific content to encourage the development of these traits may prove effective among youth. Additional results for conscientiousness, impulsiveness, as well as on the probability of being risk averse, are presented in Table A.12 in Appendix A. The program does not lead to significant effects on any of these traits. On one hand, conscientiousness and impulsiveness (as related to the attention and non-planning components measured in the survey, see Sub-Section 2.4) seem to be much harder constructs to influence through the financial lessons as they are not directly linked to potential examples on opportunity costs and inter-temporal choices delivered in class. On the other hand, being risk averse is not a good or a bad thing in itself. The lessons fostered making informed choices, balancing costs and benefits, which could have affected the tolerated level of risk in different ways across different individuals.

Even though students's financial choices are quite limited at their young age, they still manage a budget and make shopping decisions that can be shaped by the treatment. Indeed, column 4 in Table 4 shows that the intervention has a sizable and significant impact on students' shopping habits. On average, shopping behavior in the treatment group improves by 0.06SD in terms of

[21] The lack of impact on GPAs and grade progression is confirmed when the impact is estimated in the population of students in the experimental sample of schools (see Tables A.10 in Appendix A). If anything, the personal finance lessons slightly boost language performance by 0.03 SD (see Table A.9) but this effect is not robust, as it does not survive in the full population of students in the experimental sample of schools (see Table A.11).

an index that measures if they compare prices before shopping, save instead of borrowing to buy something they cannot afford, and bargain before shopping. Column 4 in Table A.12 in Appendix A reports that the probability to have a savings account is not significantly affected by the treatment. The lack of an impact on the probability to save formally may respond to the restrictions imposed on under aged populations in Peru. Since they could only open a joint account with an adult, the impact of the treatment maybe diluted by limited support or distrust of adults around them.

Additional detailed results by grade are presented in Table A.13 to shed some light on the pattern of the results on soft-skills, preferences, and behavior. Column 2 shows that the impact on self-control seems to be driven mostly by tenth graders. This could be explained by a greater emphasis on forward-looking behavior and investment in the curriculum for this grade (see Table A.1). Ninth graders, who were the ones who received lessons on budgeting, seem to experience large learning gains (column 1) but they do not seem to experience any changes in budgeting practices or other shopping behaviors. This may be explained by a more limited capacity to manage resources at their younger age. Higher-grades students did not get lessons on budgeting specifically and thus they do not record any impact on this behavior. Most of the changes in terms of shopping behavior are identified among the oldest students, who are more likely to manage money and expenses: eleventh graders see their shopping habits and financial autonomy indexes greatly increase by 0.10 SD and 0.09 SD, respectively.

In sum, students exhibit very large gains in terms of their financial knowledge but the impact on their short-run financial behavior is limited. This could either respond to a limited pass-through of knowledge into action or to a limited time-span in which the impact on behavior is measured. Since sampled students are still young and experience limited financial activity in their lives, longer term measurements may be required to capture changes in their behavior.

Table 5 precisely tests if the positive impact on financial skills carries onto adulthood and influences students' financial behavior. Access to EQUIFAX's credit registry provides information on high school graduates' credit behavior up to three years after the delivery of personal finance lessons. Specifically, credit behavior is evaluated by looking at the probabilities of having a credit history (i.e., being matched); have an active loan, further distinguishing between bank loans and micro loans; and have negative records in the credit bureau. The distinction between bank loans and micro loans is useful to evaluate preferences for formal banks, which tend to be more demanding in terms of requirements to get a loan (e.g., collateral), but offer lower interest rates than microfinance institutions.[22]

Panel A and B report the impact of the program on credit behavior by June 2018 and June 2019, respectively; two and three years after the intervention. In each case, the relevant samples are those students who are legal adults by the given date since those are the ones "at risk" of having a credit history.[23]

In Panel A, the sample of interest (i.e., legal adults by June 2018) corresponds to only 41% of

[22]Section 2.4 provides a description of EQUIFAX's data and the construction of the outcome variables.

[23]Tables A.5 and A.6 in the Appendix present the corresponding balance tables for the sample of students who are legal adults by June 2018 and June 2019, respectively.

the survey sample (7,850 students). Conditional on being over 18 years old, the match rate with EQUIFAX credit records two years after the intervention is 23% in the control group and it is not differential by treatment status (see column 1). In general, the existence of a credit record among students in this sample is due to negative signals as opposed to outstanding loan balances. In the control group, 21% of the students are matched due to unpaid or delinquent bills, credit card statements, or past loans, while only 3% are matched due to an active loan. Not surprisingly, the results show that the treatment fails to improve students' access to credit or repayment behavior.

Panel B focuses on students who became legal adults by June 2019, who amount to 71% of the original survey sample (13,714 students). Column 1 in Panel B in Table 5 shows that the match rate with EQUIFAX records in the control group increases to 30%; once more, the probability to be matched is mostly driven by the probability to have negative records (see column 5), but the probability to have an outstanding loan is now 7% in the control. With a higher share of the graduates becoming legal adults, some significant and long-lasting effects start to manifest: the treatment reduces delinquency rates by 6%. This improvement in repayment behavior corresponds one-to-one to a reduced probability of entering the credit registry. In other words, treated students become less likely to start their credit histories with a negative signal.

This finding is extremely novel and powerful. First, it shows that early impacts on financial skills do seem to translate into positive changes in financial behavior among high schools students. Second, the impact on behavior could yield long-lasting effects on welfare as long as the program is able to help them enter the financial system in better shape. Youth are often excluded from formal financial systems due to low labor participation rates and income and/or wealth levels. Since interactions of young adults within the financial system begin late, youth's needs end up being met by inadequate products and services. In Peru, for example, their lack of access to tailored financial services as well as their inexperience and low financial literacy levels lead to high levels of over-indebtedness through the use of credit cards. The provision of financial education during high school proves to be effective in reducing their likelihood to start a credit history with delinquent records, which may have important implications on their future access to credit and borrowing conditions.

Appendix A presents difference-in-difference estimates as a robustness check (see Tables A.14 and A.15). ATT effects are also reported. As expected, the ATT effects for all students' outcomes are even larger when compared to the ITT effects, but the general patterns and significance levels do not change dramatically.[24]

4.2 Treatment Impacts on Parents

Even though parents were not directly targeted throughout the program, some of the workbooks' sections had short assignments for students to complete at home, either with or without the explicit request for parents' help. Even when students failed to do homework with parents, they could still be influenced by just interacting with the students within the household; this leads to potential

[24] See Tables A.16-A.19 in Appendix A.

spillover effects on their own financial knowledge and behavior.

Indeed, the intervention had very modest spillover effects on parental credit behavior, an outcome not directly targeted. Table 6 presents the ITT treatment impacts obtained from a snapshot of parental credit behavior almost two years after the intervention. Relative to the control group, parents of students in the treatment group were two percentage points more likely to be reported in the bureau, i.e., to have a credit history. However, as opposed to the case of students, this higher match rate does not entirely respond to negative records. Moreover, parents seem to move away from microcredit loans (column 4), which tend to be more accessible, but at the cost of higher interest rates.

The increase in the probability to have a bank loan is not strong enough to yield significant treatment effects, but the direction of the impact suggests a substitution effect toward these sources of credit. Parents in the sample are comparable to the average adult in Peru in terms of their baseline levels of access to formal credit: Table 6 shows that only a third of the parents in the control group have a bank loan. The mediated impact of the program on their behavior may not be strong enough to help them overcome their borrowing constraints in the formal financial sector and thus yields a muted effect on the probability of having a bank loan.

The measured magnitude of the intergenerational spillovers is along the lines of Bruhn et al. [2016]. The authors also find modest gains in parental financial behavior: the probability to save and the probability to list their expense in a budget increases by only 2 percentage points in both cases and relative to high baseline levels (76% and 37% of the parents in the control group saved and prepared a budget, respectively).

4.3 Treatment Impacts on Teachers

Teachers were trained on the content covered in all grades, irrespective of the grade(s) they taught, during a 20-hour workshop held over five days. This is an important difference with respect to similar school-based interventions: in most previous studies, teachers only received guidance and were not trained in the concepts to be taught.

The curriculum was designed with high school students as the target beneficiaries in mind. Thus, the workbooks used very direct and simple language, with concrete examples and case studies that referred to everyday life. Because teachers delivered the content, they were continuously exposed to these materials. From the teachers' standpoint, participation in the treatment was not mandatory, but encouraged by the MINEDU and the school principals.

Column 1 in Table 7 presents initial evidence on the first-hand effect of the financial education program on teachers' financial literacy. On average, the treatment generates important knowledge gains of 0.32SD. This is impressive, both when compared to previous meta-analysis on the effects of financial education [Fernandes et al., 2014; Miller et al., 2014] as well as more recent and favorable ones [Kaiser and Menkhoff, 2017].

The financial literacy gains accrued by teachers do not translate into significant changes in shopping habits, but they do influence teachers' savings behavior. Column 4 in Table 7 shows

that teachers in the treatment group are 9 percentage points more likely to save. Behind this aggregate effect, there is a 14 percentage point increase in the share of those who save through formal channels; almost twice as large as the impact identified on the share of informal savers.

The estimated impact on the probability to save formally is quite large when compared to studies that measure the impact of financial education for adults on savings. For instance, Seshan and Yang [2012] find that exposure to a financial literacy workshop cannot affect the probability to save among Indian migrants in Qatar while Cole et al. [2011] identify no effect of a financial education program on the probability to open a savings account among unbanked urban households in Indonesia. The results on the likelihood to save identified among teachers are more in line with those obtained by Drexler et al. [2014], who report that the delivery of a heuristic financial training program led to an 8 percentage point increase in the probability to save among microfinance clients in the Dominican Republic. The sizable increase in teachers' probability to save formally is particularly impressive when compared to recent effect sizes obtained from successful interventions *explicitly and exclusively* promoting higher levels of formal savings [Karlan et al., 2014; Dupas and Robinson, 2013; Flory, 2018; Breza and Chandrasekhar, 2019]. In particular, the increase in teachers' formal saving rate due to the treatment almost doubles the 7.5 percentage point increase identified by Carpena et al. [2015] among poor urban households in India exposed to classroom-based financial education.

It should be kept in mind that savings behavior is a self-reported measure which may be influenced by social desirability bias, especially after being exposed to the financial education material. Given the large estimated impact, it would be hard to explain it all through this channel. Unfortunately, this cannot be directly tested with the survey data available. However, even if the impact on savings is spurious, the availability of longer-term and high stakes credit data provides another alternative to check if the treatment really had an important effect on teachers' financial behavior.

Column 3 in Panel A in Table 8 shows that, two years after the intervention, the probability that teachers in the treatment group obtain a loan from a bank or other supervised financial institution increases by 8 percentage points. Moreover, delinquency rates among teachers in the treatment group decrease by 10 percentage points. These effects are quite large and, relative to the control group, amount to 13% and 15% improvements, respectively. Although no longer significant, these effects are sustained by the third year after the intervention (see Panel B) and they are not statistically different from those identified after the second year.[25]

Notice that teachers have far more access to credit than the average Peruvian: almost three fourths of them have access to loans, while 67% have a loan from a bank. This higher level of bancarization among teachers and relative to parents may be explained by the quality of their job. As contract teachers, public servants receive their wages into a bank account in the national state bank, which may enable them to access credit from other lenders in the market. Their greater participation in formal markets puts them at a higher risk of making bad financial choices, which

[25]For all outcomes, a t-test rejects that the treatment coefficients are statistically different across June 2018 and June 2019.

seem to be corrected by the treatment. The probability to have negative records decreases, which may explain the further increase in the probability to get loans from banks.

All things considered, the treatment led to significant changes in teachers' savings and credit outcomes. In general, the treatment seems to foster greater access to *formal* financial services among teachers, both through a higher preference to save in the financial system and a greater likelihood to obtain loans from banks and other regulated institutions in the market.

Teachers are treated both directly through the training they receive as well as indirectly when delivering the lessons. Intensity of the treatment they experience will thus depend on their own choice to teach the lessons. A crucial difference between a teacher and another adult receiving financial education is that the former has to continuously teach the content. The exercise of simplifying the concepts and repeating them to their students in different ways may enhance learning. Thus, it is worth exploring the ATT effects on teachers' outcomes by the degree of repetition of the content.

Relying on self-reported records on coverage of the lessons from the exit survey, effective treatment is defined as an indicator variable that is equal to one whenever the teacher reports partial or total coverage of the lessons in the classroom and it is instrumented with the school random assignment into the treatment. Tables A.20 and A.21 confirm that repetition of the content in the classroom leads to even larger impacts on financial literacy and savings behavior. Greater levels of coverage are also related to larger and more sustained effects in terms of credit outcomes in the longer term.

Since the number of sessions taught is not exogenous and instead may depend on the motivation of the teachers and their initial levels of financial knowledge, this exercise is only informative and should not be regarded as one yielding causal effects.[26] However, this evidence suggests that repetition by teaching new concepts to someone else seems to increase the effects of financial education lessons. This may provide a rationale for the limited impact of one-shot programs that are usually preferred to maximize attendance among adults. Helping adults learn and change their habits may entail the use of strategies that repeatedly reinforce the concepts taught.

4.4 Cost Analysis

Existing evidence on financial education interventions does not provide much information on implementation costs. These data are extremely important, especially since these programs have become a common tool in financial inclusion efforts supported by national governments. Moreover, as an increasing number of countries are running school-based pilots with the hopes of scaling up these interventions, it becomes even more critical to collect and share information on their cost-effectiveness.

Among studies focusing on financial education for youth, Berry et al. [2018] is the only one that

[26] Although selection into these three groups based on unobservables or initial levels of financial literacy cannot be ruled out, no important pattern emerges when checking how ex ante teacher's and students' observables affect the probability to teach the lessons in the classroom (see Table A.22).

provides cost estimates that incorporate the marginal costs of training, monitoring, and materials for an after-school financial education program. The program, with a duration of eight weeks, had very low costs of US$ 0.62 per student enrolled in the experimental sample of schools. However, since attendance was voluntary, the actual cost amounted to US$ 4.15 per student.

In the Peruvian case, excluding the fixed cost of developing the workbooks, which amounted to US$ 56,100, marginal implementation costs of the school-based financial education program in 150 schools (31,000 high school students) amount to US$ 4.8 per student.[27] Even though these costs are slightly higher than the ones reported by Berry et al. [2018], the significant impact of the Peruvian intervention on financial skills yields a very low cost-to-effectiveness ratio: the cost per student to improve average financial skills by one standard deviation amounts to US$ 31.5. Assuming constant returns to scale, each additional dollar spent in the program yields a 3.3-point improvement in the PISA financial literacy assessment. Notice that the effectiveness of the intervention is only measured in terms of students' learning. Given the measured impact on students' long-term behavior, teachers' knowledge and behavior, and parental behavior, the cost-effectiveness ratio can only decrease.

The returns to the financial education intervention are particularly high when compared to cost-effective interventions that seek to improve academic performance. For instance, Busso et al. [2017] identify a sample of 21 cost-effective interventions aimed at improving learning in primary school (see chapter 7). In this sample, all but one intervention greatly surpass the ratio of cost to effect size calculated for the financial literacy program.

5 Conclusion

In the last decade, numerous countries have given financial education a central role in their efforts to promote financial inclusion. National financial inclusion strategies often have a strong financial education component, with an emphasis on children and youth. As an increasing number of governments debate the inclusion of financial education in the official school curriculum and as more resources are allocated to the development and implementation of school-based financial education programs, it is critical to evaluate the effectiveness of such efforts.

Relying on a large-scale experiment implemented in 300 public schools in Peru, this study measures the effects of a school-based financial education program for high school students. This study uses a rigorous design, large sample size, and rich survey and administrative data that allow for the measurement of outcomes in the short-term and long-term. In doing so, this study contributes to the scarce amount of literature on the effect of financial education on young people on two fronts. First, it relies on academic and credit bureau records to measure opportunity costs of teaching personal finance lessons and its effects on financial behavior. Second, this study provides experimental evidence that supports the ability of school-based financial education programs to influence financial decisions in the long-run. Third, this study analyzes the spillover effects of

[27] Fixed costs are excluded as long as they should not be considered for scaling up efforts.

school-based financial education programs on adults interacting with the students at home and in the classroom. Indeed, no other study estimates treatment impacts among the instructors delivering the lessons.

Overall, the financial education program implemented among high school students in Peru was extremely effective in improving students' and teachers' financial knowledge. The average gains among students are equivalent to an improvement of 16 points in Peru's performance in the 2015 PISA financial literacy assessment, which would be more than enough to halve the gap in performance with the next country in the ranking–Chile. Importantly, the effects on financial literacy are not generated to the detriment of academic performance.

The program also led to important changes in students', parents', and teachers' behavior. Among students, the treatment led to sizable improvements on self-control and shopping habits five months after the intervention. Moreover, longer-term credit bureau data identifies a reduction in delinquency rates three years after the intervention. This effect is quite powerful, as it provides youth a better chance at starting their credit histories in good shape.

The impact on teachers' financial knowledge and behavior is impressive. Getting trained and imparting the financial education lessons improved teachers' financial skills by 0.32 SD. Teachers in the treatment group recorded a sizeable increase in the probability to save, with a disproportionate preference for formal over informal mechanisms. Long-term effects on credit behavior also show a marked preference for formal instruments: two years after the intervention, the probability that teachers in the treatment group obtain formal bank loans increases relative to their counterparts in the control group. Teachers also experience improved repayment behavior, reflected in a large decrease in their delinquency rates.

The results are even more promising when considering that a third of the teachers never taught a lesson and that only 43% of them attended all training sessions. The ITT effects are impressive even with modest levels of treatment intensity and they constitute a lower bound of the effect that the inclusion of financial education in the secondary school curriculum could have. The official inclusion of the content would improve compliance levels as teachers' attendance to the training workshops could be better enforced. It would also solve coordination problems between teachers and principals to incorporate the materials and would help teachers plan ahead to introduce this content.

References

Ashraf, N., Karlan, D. and Yin, W. [2006], 'Tying odysseus to the mast: Evidence from a commitment savings product in the philippines', *The Quarterly Journal of Economics* **121**(2), 635–672.

Batty, M., Collins, M. and Odders-White, E. [2015], 'Experimental evidence on the effects of financial education on elementary school students' knowledge, behavior, and attitudes', *The Journal of Consumer Affairs* **49**(1), 69–96.

Batty, M., Collins, M., O'Rourke, C. and Elizabeth, O. [2017], Experiential Financial Literacy: A Field Study of My Classroom Economy. Working paper.

Becchetti, L. and Pisani, F. [2012], Financial Education on Secondary School Students: The Randomized Experiment Revisited. Facolta di Economia di Forli, Working Paper No. 98.

Behrman, J., Mitchell, O., Soo, C. and Bravo, D. [2012], 'How financial literacy affects household wealth accumulation', *American Economic Review* **102**(3), 300–304.

Bernheim, D., Garrett, D. and Maki, D. [2001], 'Education and saving:: The long-term effects of high school financial curriculum mandates', *Journal of Public Economics* **80**(3), 435 – 465.

Berry, J., Karlan, D. and Pradhan, M. [2018], 'The Impact of Financial Education for Youth in Ghana', *World Development* **102**, 71–89.

Bianchi, M. [2018], 'Financial literacy and portfolio dynamics', *The Journal of Finance* **73**(2), 831–859.

Bjorvatn, K., Cappelen, A., Helgesson Sekei, L., Sørensen, E. and Tungodden, B. [2015], Teaching through Television: Experimental evidence on entrepreneurship education in Tanzania. Norwegian School of Economics (NHH) Choice Lab Working Paper.

Bover, O., Hospido, L. and Villanueva, E. [2018], The Impact of High School Financial Education on Financial Knowledge and Choices: Evidence from a Randomized Trial in Spain, Technical report, Documento de Trabajo N. 1801, Banco de España.

Breza, E. and Chandrasekhar, A. [2019], 'Social networks, reputation, and commitment: Evidence from a savings monitors experiment', *Econometrica* **87**(1), 175–216.

Brown, M., Grigsby, J., van der Klaauw, W., Wen, J. and Zafar, B. [2016], 'Financial Education and the Debt Behavior of the Young', *The Review of Financial Studies* **29**(9), 2490–2522.

Bruhn, M., de Souza Leão, L., Legovini, A., Marchetti, R. and Zia, B. [2016], 'The Impact of High School Financial Education: Evidence from a Large-Scale Evaluation in Brazil', *American Economic Journal: Applied Economics* **8**(4), 256–295.

Bruhn, M. and McKenzie, D. [2009], 'In pursuit of balance: Randomization in practice in development field experiments', *American Economic Journal: Applied Economics* **1**(4), 200–232.

Busso, M., Cristia, J., Hincapie, D., Messina, J. and Ripani, L. [2017], Learning Better: Public Policy for Skills Development, Technical report, Inter-American Development Bank.

Campion, A., Kiran Ekka, R. and Wenner, M. [2010], Interest Rates and Implications for Microfinance in Latin America and the Caribbean. Inter-American Development Bank, Working paper series No. 177.

Carpena, F., Cole, S., Shapiro, J. and Zia, B. [2015], The ABCs of Financial Education: Experimental Evidence on Attitudes, Behavior, and Cognitive Biases. World Bank, Policy Research Working Paper 7413.

Cole, S., Paulson, A. and Kartini Shastry, G. [2016], 'High School Curriculum and Financial Outcomes: The Impact of Mandated Personal Finance and Mathematics Courses', *The Journal of Human Resources* **51**(3), 657–698.

Cole, S., Sampson, T. and Zia, B. [2011], 'Prices or knowledge? what drives demand for financial services in emerging markets?', *Journal of Finance* **66**(6), 1933–1967.

Drexler, A., Fischer, G. and Schoar, A. [2014], 'Keeping it simple: Financial literacy and rules of thumb', *American Economic Journal: Applied Economics* **6**(2), 1–31.

Dupas, P. and Robinson, J. [2013], 'Why don't the poor save more? evidence from health savings experiments', *American Economic Review* **103**(4), 1138 – 1171.

Fernandes, D., Lynch, J. and Netemeyer, R. [2014], 'Financial literacy, financial education, and downstream financial behaviors', *Management Science* **60**(8), 1861–1883.

Flory, J. [2018], 'Formal finance and informal safety nets of the poor: Evidence from a savings field experiment', *Journal of Development Economics* **135**, 517 – 533.

Frisancho, V. [2019], 'The impact of financial education for youth', *Economics of Education Review* p. 101918.

Frisancho, V., Krishna, K., Lychagin, S. and Yavas, C. [2016], 'Better luck next time: Learning through retaking', *Journal of Economic Behavior & Organization* **125**, 120–135.

Furtado, I., Legovini, A. and Piza, C. [2017], How Early One Should Start Financial Education: Evidence from a Large Scale Experiment. World Bank, DIME Financial and PSD Program in Brief.

Gathergood, J. [2012], 'Self-control, financial literacy and consumer over-indebtness', *Journal of Economic Psychology* **33**, 590–602.

Hart, S., Stewart, K. and Jimerson, S. [2011], 'The student engagement in schools questionnaire (sesq) and the teacher engagement report form-new (terf-n): Examining the preliminary evidence', *Contemporary School Psychology* **15**, 67–79.

Hinojosa, T., Miller, S., Swanlund, A., Hallberg, K., Brown, M. and O'Brien, B. [2009], The Stock Market Game Study Final Report. Learning Point Associates.

Jamison, J., Karlan, D. and Zinman, J. [2014], Financial Education and Access to Savings Accounts: Complements or Substitutes? Evidence from Ugandan Youth Clubs. NBER Working Paper No. 20135.

Kaiser, T. and Menkhoff, L. [2017], 'Does financial education impact financial literacy and financial behavior, and if so, when?', *The World Bank Economic Review* **31**(3), 611–630.

Kaiser, T. and Menkhoff, L. [2019], 'Financial education in schools: A meta-analysis of experimental studies', *Economics of Education Review* .

Karlan, D., Kendall, J., Mann, R., Pande, R., Suri, T. and Zinman, J. [2016], Research and Impacts of Digital Financial Services. Research Working Paper Series 16-037, Harvard Kennedy School.

Karlan, D., Ratan, A. L. and Zinman, J. [2014], 'Savings by and for the poor: A research review and agenda', *Review of Income and Wealth* **60**(1), 36–78.

Luhrmann, M., Serra-Garcia, M. and Winter, J. [2018], 'The Impact of Financial Education on Adolescents' Intertemporal Choices', *American Economic Journal: Economic Policy* **10**(3), 309–332.

Lusardi, A., Michaud, P.-C. and Mitchell, O. [2017], 'Optimal financial knowledge and wealth inequality', *Journal of Political Economy* **125**(2), 431–477.

Lusardi, A. and Mitchell, O. [2014], 'The economic importance of financial literacy: Theory and evidence', *Journal of Economic Literature* **52**(1), 5–44.

Mandell, L. [2009], The Financial Literacy of Young American Adults: Results of the 2008 National Jump$tart Coalition Survey of High School Seniors and College Students., Technical report, Jump$tart Coalition.

McKenzie, D. [2012], 'Beyond baseline and follow-up: The case for more t in experiments', *Journal of Development Economics* **99**(2), 210 – 221.

Miller, M., Reichelstein, J., Salas, C. and Zia, B. [2014], 'Can you help someone become financially capable? a meta-analysis of the literature', *World Bank Research Observer* **30**(2), 220–246.

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., Houts, R., Poulton, R., Roberts, B. W., Ross, S., Sears, M. R., Thomson, W. M. and Caspi, A. [2011], 'A gradient of childhood self-control predicts health, wealth, and public safety', *Proceedings of the National Academy of Sciences* **108**(7), 2693–2698.

OECD [2014], Financial Education for Youth: The Role of Schools, Technical report, OECD Publishing.

OECD [2017], *PISA 2015 Results (Volume IV)*.

OECD/INFE [2015], National Strategies for Financial Education, Technical report, Policy Handbook.

Orozco-Cabal, L., Rodríguez, M., Herin, D., Gempeler, J. and Uribe, M. [2010], 'Validity and reliability of the abbreviated barratt impulsiveness scale in spanish (bis-15s)', *Revista Colombiana de Psiquiatría* **39**(1), 93–109.

Pervin, L. A. and John, P. [1999], The big-five trait taxonomy: History, measurement, and theoretical perspectives, *in* O. P. John and S. Srivastava, eds, 'Handbook of personality: Theory and research', New York: Guilford Press.

Seshan, G. and Yang, D. [2012], Transnational Household Finance: A Field Experiment on the Cross-Border Impacts of Financial Education for Migrant Workers. Working Paper.

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D. and Tinghög, G. [2018], 'Does self-control predict financial behavior and financial well-being?', *Journal of Behavioral and Experimental Finance* **14**, 30–38.

Tangney, J., Baumeister, R. and Boone, A. [2004], 'High self-control predicts good adjustment, less pathology, better grades, and interpersonal success', *Journal of Personality* pp. 271–324.

Urban, C., Schmeiser, M., Collins, M. and Brown, A. [2018], 'The Effects of High School Personal Financial Education Policies on Financial Behavior', *Economics of Education Review* .

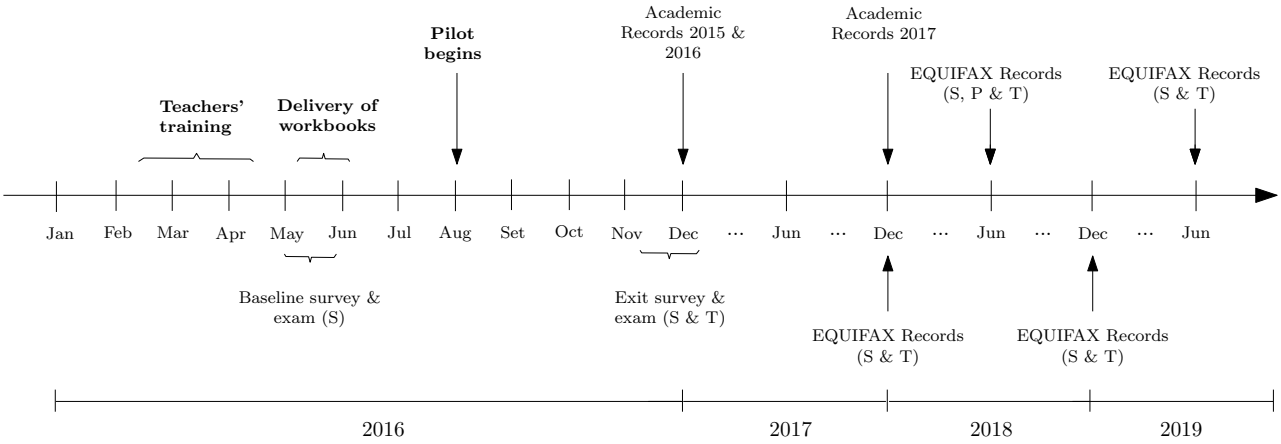
Urban, C. and Stoddard, C. [forthcoming], 'The Effects of Financial Education Graduation Requirements on Postsecondary Financing Decisions', *Journal of Money, Credit, and Banking* .

van Rooij, M. C., Lusardi, A. and Alessie, R. J. [2012], 'Financial Literacy, Retirement Planning and Household Wealth', *The Economic Journal* **122**(560), 449–478.

Willis, L. [2011], 'The financial education fallacy', *American Economic Review Papers and Proceedings* **101**(3), 429–434.

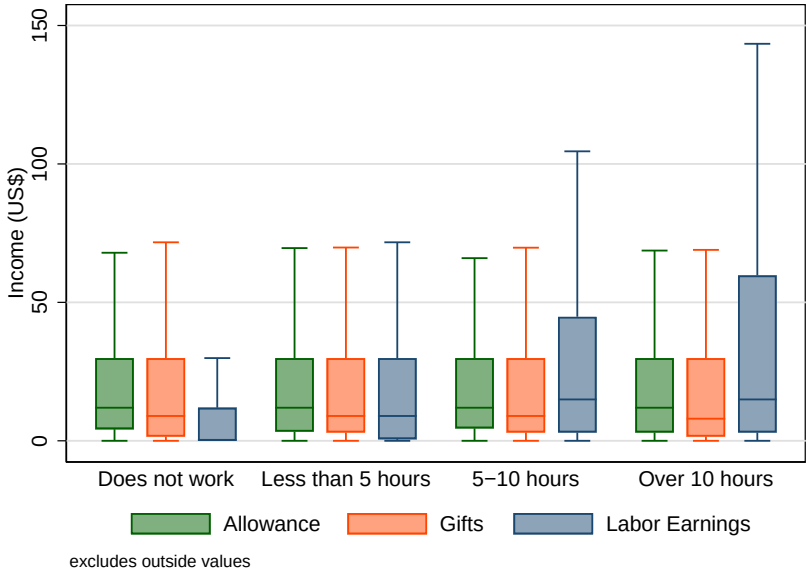
Figures and Tables

Figure 1: Study Timeline



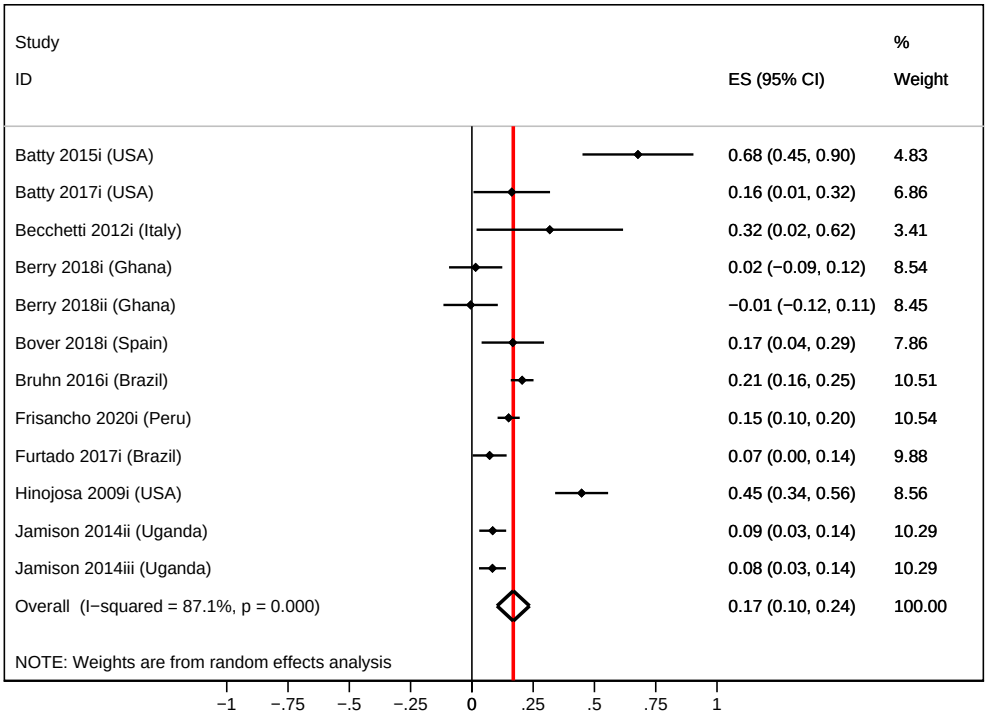
NOTE: Data collection activities may refer to the sample of students (S), parents (P), and/or teachers (T).

Figure 2: Income Distribution by Sources



NOTE: Own elaboration based on survey records.

Figure 3: Experimental Evidence for Financial Education Programs Targeting Youth: Effect Sizes on Financial Knowledge by Nature of the Requirement



NOTE: Own elaboration based on meta-analysis including the following studies: Batty et al. [2015, 2017]; Becchetti and Pisani [2012]; Bover et al. [2018]; Bruhn et al. [2016]; Furtado et al. [2017]; Hinojosa et al. [2009]; Berry et al. [2018]; Jamison et al. [2014].

Table 1: Balance check in the Baseline Sample: Student characteristics

Variable	Control mean	T-C	N
Male	0.497	0.010	20619
	[0.500]	[0.013]	
Age	15.159	0.006	16599
	[1.221]	[0.021]	
Works	0.401	-0.008	20097
	[0.490]	[0.011]	
Ratio of household members to bedrooms	1.853	0.006	19812
	[0.999]	[0.017]	
Lives with both parents	0.588	0.003	20057
	[0.492]	[0.009]	
Asset index	-0.000	-0.023	20191
	[1.000]	[0.029]	
High level of parental supervision	0.755	0.007	19141
	[0.430]	[0.006]	
Has dinner with parents 7 days a week	0.321	-0.001	20246
	[0.467]	[0.007]	
Truancy in the past 2 weeks	0.156	-0.001	19647
	[0.363]	[0.006]	
Student engagement (scale) - Baseline	-0.001	0.014	18169
	[0.883]	[0.014]	
Impulsiveness	-0.003	0.026	17261
	[0.879]	[0.013]**	
Conscientiousness	-0.002	0.006	15590
	[0.883]	[0.014]	
Self-control	-0.001	-0.000	16738
	[0.887]	[0.014]	
Time inconsistency: hyperbolic	0.126	-0.006	18082
	[0.332]	[0.004]*	
Risk averse	0.706	0.009	18974
	[0.456]	[0.006]*	
No previous exposure to financial education	0.371	-0.017	18974
	[0.483]	[0.009]**	
Financial literacy raw score (0-15)	8.029	0.129	20427
	[2.928]	[0.077]*	
GPA 2015 (0-20)	13.727	-0.034	18228
	[1.483]	[0.042]	
Financial autonomy (0-100)	40.789	0.424	19329
	[12.901]	[0.189]**	
Has a savings account	0.137	0.004	19008
	[0.344]	[0.005]	
Prepares a personal budget	0.565	-0.012	18165
	[0.496]	[0.007]*	
Compares prices before shopping	0.044	-0.003	18172
	[0.205]	[0.004]	
Bargains	0.938	0.005	18172
	[0.241]	[0.005]	
Talks to parents/tutors about family finance	0.709	-0.003	18446
	[0.454]	[0.006]	
Helps family with budgeting	0.679	0.006	18394
	[0.467]	[0.007]	

NOTE: Data from the baseline survey and exam for the sample of students present at baseline. Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors (deviations) of coefficients (control means) are in brackets.

Table 2: Balance check: Teacher characteristics

Variable	Control mean	T-C	N
Male	0.577	-0.108	452
	[0.495]	[0.041]***	
Age	46.755	-0.924	431
	[11.028]	[0.958]	
Undefined contract teacher	0.637	-0.006	434
	[0.482]	[0.038]	
Workload (hours)	0.797	-0.050	378
	[0.404]	[0.041]	
Years of teaching experience	17.177	-0.649	400
	[10.217]	[1.004]	
Degree in Social Sciences	0.632	0.014	392
	[0.484]	[0.052]	
Higher education	0.332	0.055	425
	[0.472]	[0.046]	
Teaches in 9th grade	0.531	0.060	452
	[0.500]	[0.038]	
Teaches in 10th grade	0.526	0.037	452
	[0.501]	[0.037]	
Teaches in 11th grade	0.488	0.030	452
	[0.501]	[0.036]	

NOTE: Data comes from the exit survey and exam. Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors (deviations) of coefficients (control means) are in brackets.

Table 3: ITT Effects on Students' Financial Knowledge and Academic Outcomes

		Academic Outcomes			
	Financial	2016		2017	
	Literacy	GPA	Pr(Promoted)	GPA	Pr(Promoted)
	(1)	(2)	(3)	(4)	(5)
Treatment	0.157***	-0.014	0.002	0.006	0.005
	[0.023]	[0.014]	[0.009]	[0.015]	[0.009]
Number of Observations	19487	19054	18574	11498	11703
Number of schools	296	296	296	296	296
Mean in Control	-0.01	-0.01	0.81	-0.02	0.80
R-squared	0.23	0.86	0.08	0.83	0.07

NOTE: Financial literacy exam score and GPA are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for academic outcomes, GPA and Pr(Promoted). OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week. In the case of financial literacy and GPAs, the value of the dependent variable at baseline is also included as a control.

Table 4: ITT Effects on Students' Socioemotional Skills, Preferences, and Consumption Habits

	Soft Skills & Preferences		Consumption		
	Self-Control	Pr(Hyperbolic)	Pr(Budgeting)	Shopping Habits Index	Financial Autonomy
	(1)	(2)	(3)	(4)	(5)
Treatment	0.032**	-0.000	0.006	0.060***	0.016
	[0.016]	[0.005]	[0.007]	[0.016]	[0.015]
Number of Observations	17220	13193	15672	15928	16696
Number of schools	296	296	296	296	296
Mean in Control	0.00	0.16	0.64	0.00	-0.01
R-squared	0.21	0.02	0.06	0.05	0.16

NOTE: Self-control, shopping habits index, and financial autonomy index are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for socioemotional skills and preferences (including outcomes in this table and the ones in columns 1-3 in Table A.12) and shopping habits, separately. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, has dinner with parents all days of the week, and the value of dependent variable at baseline.

Table 5: ITT Effects on Students' Access to Credit and Delinquency

	Pr(Records)	Pr(Credit)	Pr(Bank Loan)	Pr(Microcredit)	Pr(Default/ Arrears)
	(1)	(2)	(3)	(4)	(5)
Panel A: Two years after the intervention (June 2018)					
Treatment	-0.010	0.001	0.002	-0.001	-0.009
	[0.010]	[0.003]	[0.003]	[0.001]	[0.010]
Number of Observations	7850	7850	7850	7850	7850
Number of schools	296	296	296	296	296
Mean in Control	0.23	0.03	0.03	0.00	0.21
R-squared	0.07	0.03	0.03	0.03	0.07
Panel B: Three years after the intervention (June 2019)					
Treatment	-0.019**	-0.004	-0.005	0.000	-0.016*
	[0.009]	[0.004]	[0.004]	[0.001]	[0.009]
Number of Observations	13714	13714	13714	13714	13714
Number of schools	296	296	296	296	296
Mean in Control	0.30	0.07	0.07	0.00	0.27
R-squared	0.07	0.04	0.04	0.02	0.07

NOTE: School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week. Panel A (B) includes all students who became legal adults by June 2018 (June 2019). EQUIFAX records correspond to June 2018 and June 2019, two and three years after the intervention.

Table 6: ITT Effects on Parents' Access to Credit and Delinquency

	Pr(Records)	Pr(Credit)	Pr(Bank Loan)	Pr(Microcredit)	Pr(Default/ Arrears)
	(1)	(2)	(3)	(4)	(5)
Treatment	0.020**	0.001	0.004	-0.005**	0.011
	[0.008]	[0.008]	[0.008]	[0.002]	[0.008]
Number of Observations	14709	14709	14709	14709	14709
Number of schools	296	296	296	296	296
Mean in Control	0.75	0.34	0.33	0.03	0.61
R-squared	0.04	0.04	0.04	0.03	0.03

NOTE: School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls corresponding to his child: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week. EQUIFAX records correspond to June 2018, two years after the intervention.

Table 7: ITT Effects on Teachers' Financial Literacy and Consumption and Saving Habits

	Financial Literacy	Consumption		Savings		
		Pr(Budgeting)	Shopping Habits Index	Pr(Save)	Pr(Save Formally)	Pr(Save Informally)
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.320***	-0.013	0.122	0.087**∧∧	0.140***∧∧	0.080*
	(0.100)	(0.025)	(0.119)	(0.035)	(0.048)	(0.042)
Number of Observations	417	331	280	334	376	334
Number of schools	250	212	184	214	232	214
Mean in Control	0.03	0.92	0.03	0.84	0.64	0.77
R-squared	0.37	0.43	0.32	0.41	0.31	0.42

NOTE: Financial literacy exam score and shopping habits index are standardized relative to the control group in the original experimental sample with 282 schools with teacher exit survey and exam records. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. ∧ significant at 10%; ∧∧ significant at 5%; ∧ ∧ ∧ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for shopping and saving habits, separately. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, type of contract, total hours teaching, experience, degree in social sciences, and postgraduate studies.

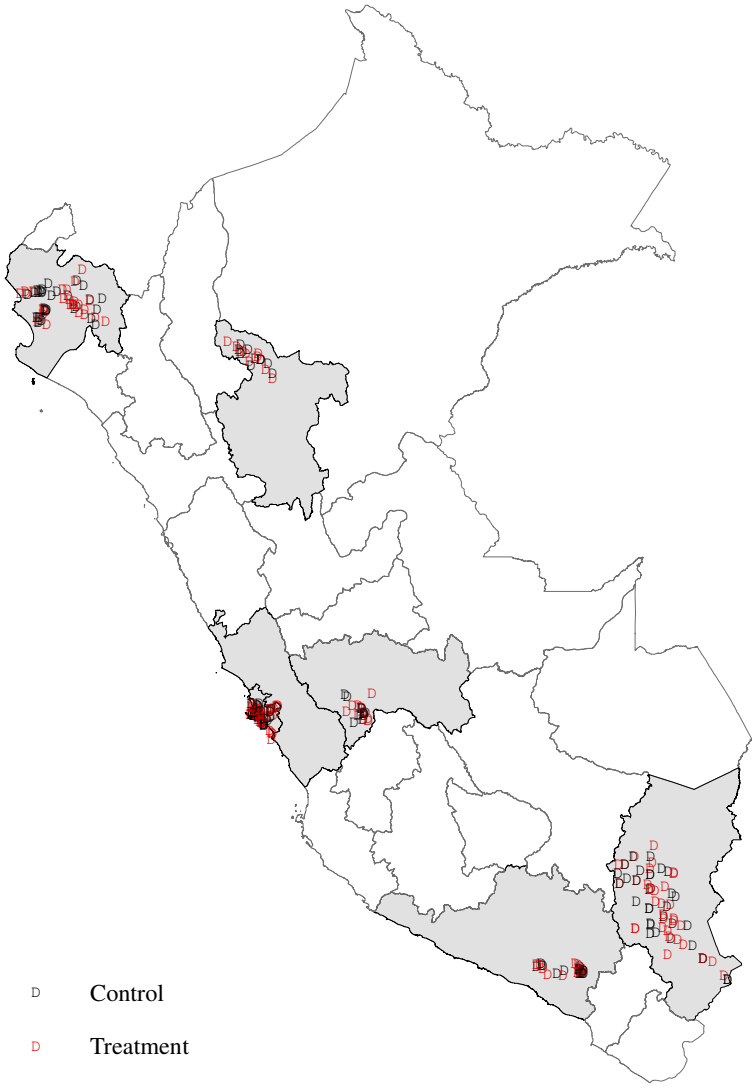
Table 8: ITT Effects on Teachers' Access to Credit and Delinquency

	Pr(Records)	Pr(Credit)	Pr(Bank Loan)	Pr(Microcredit)	Pr(Default/ Arrears)
	(1)	(2)	(3)	(4)	(5)
Panel A: Two years after the intervention (June 2018)					
Treatment	0.005	0.043	0.078*	0.006	-0.101**
	[0.012]	[0.043]	[0.043]	[0.036]	[0.044]
Number of Observations	417	417	417	417	417
Number of schools	250	250	250	250	250
Mean in Control	0.98	0.65	0.58	0.27	0.69
R-squared	0.31	0.41	0.42	0.38	0.38
Panel B: Three years after the intervention (June 2019)					
Treatment	-0.008	0.003	0.035	0.034	-0.066
	[0.007]	[0.039]	[0.041]	[0.036]	[0.041]
Number of Observations	417	417	417	417	417
Number of schools	250	250	250	250	250
Mean in Control	1.00	0.72	0.67	0.28	0.78
R-squared	0.36	0.41	0.43	0.41	0.40

NOTE: School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, type of contract, total hours teaching, experience, degree in social sciences, and postgraduate studies.

A Additional Figures and Tables (For Online Publication)

Figure A.1: Spatial Distribution of Control and Treatment Schools



NOTE: Intervention regions are highlighted grey.

Table A.1: Financial Literacy Lessons in Student Workbooks by Grade

3rd grade	4th grade	5th grade
1. Needs and resources	1. Financial products and services	1. Responsible financial consumer
1.1. Wants vs. needs	1.1. Financial system	1.1. Capacity to pay
1.2. Opportunity cost	1.2. Saving vs. Investment	1.2. Overindebtness
1.3. Savings vs. credit, expenditure vs. investment	1.3. Assets and liabilities	1.3. Financial consumer's rights
1.4. Economic agents	1.4. Financial future and capacity to pay	1.4. Protection of consumer rights
2. Budgeting	1.5. Adequate usage of financial products and services	1.5. The State and financial stability
2.1. Financial plan		2. Information
2.2. Income and expenses		2.1. Transparency in financial contracts
2.3. Budgeting		2.2. Consumers' responsibilities
2.4. Usefulness of budgets		

Table A.2: Psychometric Properties of the Students' Financial Literacy Exam

Item	Difficulty	Discriminatory	Difficulty	Discriminatory	Difficulty	Discriminatory
1	-2.526***	1.106***	-2.404***	1.406***	-2.404***	1.406***
2	-0.639***	0.863***	-1.025***	0.907***	-1.025***	0.907***
3	-0.360***	1.360***	-0.678***	1.174***	-0.678***	1.174***
4	-0.761***	0.905***	-1.039***	0.914***	-1.039***	0.914***
5	0.567***	0.704***	-0.080***	1.063***	-0.080***	1.063***
6	0.597***	1.555***	0.773***	0.492***	0.773***	0.492***
7	-6.114***	-0.285***	-0.782***	1.606***	-0.782***	1.606***
8	-0.229***	0.951***	-0.990***	1.719***	-0.990***	1.719***
9	4.933***	0.224***	0.117***	0.737***	0.117***	0.737***
10	0.147***	1.468***	2.085***	0.338***	2.085***	0.338***
11	0.070	0.913***	-0.068	0.731***	-0.068	0.731***
12	-0.079***	1.014***	-0.863***	1.773***	-0.863***	1.773***
13	0.501***	1.061***	-0.560***	1.614***	-0.560***	1.614***
14	-0.138***	1.161***	0.121***	1.099***	0.121***	1.099***
15	4.919***	0.278***	1.138***	0.492***	1.138***	0.492***

NOTE: Item-response theory estimates using a two-parameter model with students' baseline data. Significance levels * 10%, ** 5%, *** 1%.

Table A.3: Balance check: Attrition Rates between Baseline and Endline Survey

	All	9th	10th	11th
	(1)	(2)	(3)	(4)
Treatment	-0.001	-0.001	-0.000	-0.003
	[0.001]	[0.001]	[0.000]	[0.002]
Number of Observations	17226	5921	5699	5606
Number of Schools	296	293	290	291
Mean in Control	0.16	0.17	0.16	0.16
R-squared	0.08	0.06	0.02	0.16

NOTE: Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors(deviations) of coefficients(control means) are in brackets.

Table A.4: Balance check in the Endline Sample: Student characteristics

Variable	Control mean	T-C	N
Male	0.498	0.010	19487
	[0.500]	[0.013]	
Age	15.125	0.018	14149
	[1.204]	[0.021]	
Works	0.402	-0.004	16795
	[0.490]	[0.011]	
Ratio of household members to bedrooms	1.849	-0.000	16584
	[0.995]	[0.018]	
Lives with both parents	0.598	0.007	16773
	[0.490]	[0.010]	
Asset index	-0.024	-0.033	16868
	[0.994]	[0.030]	
High level of parental supervision	0.760	0.013	16000
	[0.427]	[0.007]*	
Has dinner with parents 7 days a week	0.327	-0.004	16914
	[0.469]	[0.008]	
Truancy in the past 2 weeks	0.140	0.001	16447
	[0.347]	[0.006]	
Student engagement (scale) - Baseline	0.026	0.007	15237
	[0.881]	[0.015]	
Impulsiveness	0.012	0.028	14480
	[0.878]	[0.013]**	
Conscientiousness	0.018	-0.006	13120
	[0.884]	[0.015]	
Self-control	0.012	0.002	14049
	[0.879]	[0.015]	
Time inconsistency: hyperbolic	0.125	-0.004	15142
	[0.331]	[0.004]	
Risk averse	0.708	0.006	15884
	[0.455]	[0.006]	
No previous exposure to financial education	0.373	-0.017	15884
	[0.484]	[0.009]*	
Financial literacy raw score (0-15)	8.071	0.089	17055
	[2.918]	[0.082]	
GPA 2015 (0-20)	13.741	-0.044	17723
	[1.471]	[0.041]	
Financial autonomy (0-100)	40.875	0.482	16166
	[12.959]	[0.207]**	
Has a savings account	0.137	0.002	15900
	[0.343]	[0.005]	
Prepares a personal budget	0.564	-0.014	15216
	[0.496]	[0.007]*	
Compares prices before shopping	0.043	0.002	15210
	[0.202]	[0.004]	
Bargains	0.938	-0.000	15210
	[0.241]	[0.005]	
Talks to parents/tutors about family finance	0.712	-0.001	15441
	[0.453]	[0.006]	
Helps family with budgeting	0.683	0.006	15405
	[0.465]	[0.007]	

NOTE: Data from the baseline survey and exam for the sample of students present at the exit survey and exam. Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors (deviations) of coefficients (control means) are in parentheses.

Table A.5: Balance check in the Sample of Students Matched with EQUIFAX Records by June 2018

Variable	Control mean	T-C	N
Male	0.525	0.012	4876
	[0.499]	[0.016]	
Age	16.234	0.047	4095
	[0.778]	[0.024]**	
Works	0.476	-0.003	4771
	[0.500]	[0.014]	
Ratio of household members to bedrooms	1.817	0.002	4720
	[0.951]	[0.025]	
Lives with both parents	0.562	0.001	4769
	[0.496]	[0.013]	
Asset index	-0.057	-0.032	4786
	[0.986]	[0.032]	
High level of parental supervision	0.720	0.012	4531
	[0.449]	[0.012]	
Has dinner with parents 7 days a week	0.294	0.009	4801
	[0.456]	[0.014]	
Truancy in the past 2 weeks	0.170	-0.014	4652
	[0.376]	[0.011]	
Student engagement (scale) - Baseline	0.010	0.006	4333
	[0.889]	[0.025]	
Impulsiveness	0.022	0.035	4237
	[0.876]	[0.025]	
Conscientiousness	0.027	0.002	3829
	[0.875]	[0.025]	
Self-control	-0.039	0.038	4099
	[0.894]	[0.025]	
Time inconsistency: hyperbolic	0.139	-0.002	4409
	[0.346]	[0.008]	
Risk averse	0.716	0.004	4677
	[0.451]	[0.011]	
No previous exposure to financial education	0.351	-0.043	4723
	[0.477]	[0.014]***	
Financial literacy raw score (0-15)	8.223	0.155	4851
	[2.721]	[0.105]	
GPA 2015 (0-20)	13.828	-0.109	4544
	[1.531]	[0.054]**	
Financial autonomy (0-100)	42.098	0.387	4822
	[12.381]	[0.334]	
Has a savings account	0.117	-0.002	4793
	[0.322]	[0.009]	
Prepares a personal budget	0.594	-0.025	4631
	[0.491]	[0.012]**	
Compares prices before shopping	0.008	-0.003	4703
	[0.087]	[0.002]	
Bargains	0.989	0.003	4703
	[0.105]	[0.002]	
Talks to parents/tutors about family finance	0.732	-0.007	4709
	[0.443]	[0.012]	
Helps family with budgeting	0.691	0.010	4689
	[0.462]	[0.012]	

NOTE: Data from the baseline survey and exam for the sample of students present at the exit survey and exam. Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors (deviations) of coefficients (control means) are in parentheses.

Table A.6: Balance check in the Sample of Students Matched with EQUIFAX Records by June 2019

Variable	Control mean	T-C	N
Male	0.504	0.011	8803
	[0.500]	[0.015]	
Age	15.665	0.012	7375
	[0.900]	[0.022]	
Works	0.431	-0.003	8632
	[0.495]	[0.013]	
Ratio of household members to bedrooms	1.832	-0.007	8531
	[0.961]	[0.020]	
Lives with both parents	0.580	0.019	8633
	[0.494]	[0.011]*	
Asset index	-0.013	-0.038	8669
	[0.985]	[0.032]	
High level of parental supervision	0.748	0.007	8223
	[0.434]	[0.009]	
Has dinner with parents 7 days a week	0.315	-0.005	8676
	[0.465]	[0.011]	
Truancy in the past 2 weeks	0.151	-0.008	8459
	[0.358]	[0.008]	
Student engagement (scale) - Baseline	0.035	-0.008	7894
	[0.874]	[0.019]	
Impulsiveness	0.028	0.040	7703
	[0.866]	[0.017]**	
Conscientiousness	0.039	0.001	6963
	[0.877]	[0.019]	
Self-control	-0.003	0.009	7423
	[0.876]	[0.019]	
Time inconsistency: hyperbolic	0.139	-0.007	8007
	[0.346]	[0.006]	
Risk averse	0.712	0.011	8458
	[0.453]	[0.008]	
No previous exposure to financial education	0.362	-0.031	8554
	[0.481]	[0.012]***	
Financial literacy raw score (0-15)	8.454	0.151	8753
	[2.804]	[0.092]	
GPA 2015 (0-20)	13.865	-0.082	8148
	[1.513]	[0.048]*	
Financial autonomy (0-100)	41.960	0.751	8690
	[12.406]	[0.244]***	
Has a savings account	0.119	-0.008	8647
	[0.324]	[0.007]	
Prepares a personal budget	0.586	-0.023	8356
	[0.493]	[0.009]**	
Compares prices before shopping	0.014	-0.000	8468
	[0.117]	[0.003]	
Bargains	0.979	0.004	8468
	[0.143]	[0.003]	
Talks to parents/tutors about family finance	0.724	-0.003	8475
	[0.447]	[0.009]	
Helps family with budgeting	0.690	0.010	8462
	[0.463]	[0.008]	

NOTE: Data from the baseline survey and exam for the sample of students present at the exit survey and exam. Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors (deviations) of coefficients (control means) are in parentheses.

Table A.7: Share of Missing Data by Construct and Survey Round

	Financial Literacy	Consciousness	Self-Control	Impulsiveness	Pr(Risk averse)	Pr(Hyperbolic)	Pr(Budgeting)	Shopping Habits Index	Financial Autonomy	Pr(Savings Account)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Baseline Survey										
Treatment	-0.010	-0.007	-0.006	-0.011	-0.006	-0.015	-0.009	-0.011	-0.014	-0.007
	[0.012]	[0.010]	[0.011]	[0.011]	[0.012]	[0.012]	[0.012]	[0.013]	[0.013]	[0.013]
Number of Observations	19487	19487	19487	19487	19487	19487	19487	19487	19487	19487
Number of schools	296	296	296	296	296	296	296	296	296	296
Mean in Control	0.13	0.33	0.28	0.26	0.19	0.23	0.22	0.24	0.18	0.19
R-squared	0.08	0.04	0.04	0.06	0.07	0.06	0.07	0.06	0.09	0.08
Panel B: Endline Survey										
Treatment	0.000	0.007	0.009	0.021*	0.018	0.007	-0.006	0.009	0.016	0.005
	[.]	[0.007]	[0.008]	[0.012]	[0.013]	[0.011]	[0.012]	[0.012]	[0.013]	[0.012]
Number of Observations	19487	19487	19487	19487	19487	19487	19487	19487	19487	19487
Number of schools	296	296	296	296	296	296	296	296	296	296
Mean in Control	0.00	0.19	0.11	0.32	0.30	0.32	0.20	0.18	0.13	0.15
R-squared	.	0.04	0.04	0.13	0.14	0.09	0.07	0.09	0.10	0.09

NOTE: Significance levels (* 10%; ** 5%; *** 1%) captured through OLS estimation accounting for clustered (school) standard errors. Standard errors(deviations) of coefficients(control means) are in brackets.

Table A.8: ITT Effects on Financial Literacy: Including and Excluding Questions from Teachers' Entry Exam

	All questions	Only Jump$tart and original questions
	(1)	(2)
Treatment	0.157***	0.117***
	(0.023)	(0.021)
Number of Observations	19487	19487
Number of schools	296	296
Mean in Control	-0.01	-0.00
R-squared	0.23	0.16

NOTE: Financial literacy exam score is standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week, and the value of the dependent variable at baseline.

Table A.9: ITT Effects on Grades by Course

	Math	Language	Average w/o HGE	HGE
	(1)	(2)	(3)	(4)
Treatment	-0.007	0.033*	0.001	-0.016
	[0.019]	[0.018]	[0.020]	[0.014]
Number of Observations	19054	19054	19054	19054
Number of schools	296	296	296	296
Mean in Control	-0.01	-0.01	0.00	-0.01
R-squared	0.68	0.70	0.68	0.86

NOTE: GPAs are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week, and the value of dependent variable at baseline.

Table A.10: ITT Effects on Academic Outcomes, Total Population of Students in the Experimental Sample of Schools

	2016		2017	
	GPA	Pr(Promoted)	GPA	Pr(Promoted)
	(1)	(2)	(3)	(4)
Treatment	-0.002	-0.010	0.013	0.004
	[0.011]	[0.009]	[0.014]	[0.009]
Number of Observations	54077	60074	32827	38528
Number of schools	298	298	298	298
Mean in Control	0.00	0.74	0.00	0.78
R-squared	0.88	0.03	0.86	0.03

NOTE: GPAs are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, and the value of dependent variable at baseline.

Table A.11: ITT Effects on Grades by Course, Total Population of Students in the Experimental Sample of Schools

	Math	Language	Average w/o HGE	HGE
	(1)	(2)	(3)	(4)
Treatment	0.001	0.022	0.003	-0.002
	[0.017]	[0.016]	[0.020]	[0.011]
Number of Observations	54077	54077	54077	54077
Number of schools	298	298	298	298
Mean in Control	0.00	0.00	0.00	0.00
R-squared	0.68	0.69	0.66	0.88

NOTE: GPAs are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week, and the value of dependent variable at baseline.

Table A.12: ITT Effects on Other Self-Reported Student Outcomes

	Soft Skills & Preferences			Savings
	Consciousness	Impulsiveness	Pr(Risk averse)	Pr(Account)
	(1)	(2)	(3)	(4)
Treatment	-0.013	-0.000	0.009	-0.004
	[0.015]	[0.016]	[0.007]	[0.005]
Number of Observations	15705	13015	13324	16584
Number of schools	296	296	296	296
Mean in Control	0.00	0.00	0.68	0.16
R-squared	0.20	0.18	0.08	0.11

NOTE: Consciousness and impulsiveness are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for socioemotional skills and preferences (including outcomes in this table and the ones in columns 1-2 in Table 4). OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week, and the value of the dependent variable at baseline.

Table A.13: ITT Effects on Students' Financial Knowledge, Socioemotional Skills, Preferences, and Consumption Habits by Grade

	Financial Knowledge	Soft Skills & Preferences		Consumption		
		Self-Control	Pr(Hyperbolic)	Pr(Budgeting)	Shopping Habits Index	Financial Autonomy
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Ninth Grade						
Treatment	0.179***	0.012	0.013	0.009	0.032	-0.034
	(0.035)	(0.028)	(0.012)	(0.014)	(0.031)	(0.030)
Number of Observations	4115	3656	2806	3223	3351	3479
Number of schools	286	284	276	280	284	284
Mean in Control	0.08	0.01	0.14	0.64	0.01	0.05
R-squared	0.34	0.23	0.07	0.13	0.10	0.21
Panel B: Tenth Grade						
Treatment	0.117***	0.072***∧∧∧	-0.001	-0.002	0.007	-0.003
	(0.037)	(0.026)	(0.013)	(0.013)	(0.028)	(0.030)
Number of Observations	3996	3595	2865	3371	3406	3543
Number of schools	276	270	268	270	268	270
Mean in Control	0.09	0.02	0.17	0.65	0.08	0.03
R-squared	0.30	0.30	0.07	0.10	0.11	0.22
Panel C: Eleventh Grade						
Treatment	0.205***	0.036	0.012	0.011	0.103***∧∧	0.085***∧∧
	(0.037)	(0.031)	(0.012)	(0.015)	(0.031)	(0.030)
Number of Observations	4048	3636	2819	3360	3411	3530
Number of schools	278	278	266	274	274	276
Mean in Control	0.10	0.00	0.17	0.67	0.06	0.03
R-squared	0.24	0.32	0.07	0.11	0.10	0.25

NOTE: Financial literacy exam score is standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school-grade are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. ∧ significant at 10%; ∧∧ significant at 5%; ∧∧∧ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for socioemotional skills and preferences (including outcomes in this table and the ones in columns 1-3 in Table A.12) and shopping habits, separately. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week, and the value of the dependent variable at baseline.

Table A.14: ITT Effects on Students' Financial Knowledge and Academic Outcomes: Differences-in-Differences Estimation

		GPA	
	Financial Literacy	2016	2017
	(1)	(2)	(3)
Post	0.018	-0.001	0.023
	(0.025)	(0.013)	(0.020)
Treatment	0.045	0.085*	0.086*
	(0.031)	(0.046)	(0.047)
TreatmentXPost	0.120***	0.026	-0.023
	(0.039)	(0.018)	(0.035)
Number of Observations	36542	36777	30552
Number of schools	296	296	296
Mean in Control	-0.01	-0.02	-0.02
R-squared	0.11	0.32	0.33

NOTE: Financial literacy exam score and GPA are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for GPA in 2016 and 2017. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents each day of the week.

Table A.15: ITT Effects on Students' Socioemotional Skills, Preferences, and Consumption Habits: Differences-in-Differences Estimation

	Soft Skills & Preferences		Consumption		
	Self-Control	Pr(Hyperbolic)	Pr(Budgeting)	Shopping Habits Index	Financial Autonomy
	(1)	(2)	(3)	(4)	(5)
Post	-0.001	0.031***	0.080***	0.011	0.015
	(0.019)	(0.006)	(0.008)	(0.021)	(0.017)
Treatment	0.003	-0.003	-0.014*	-0.000	0.038**
	(0.020)	(0.005)	(0.008)	(0.018)	(0.018)
TreatmentXPost	0.024	0.003	0.018	0.059*	-0.012
	(0.027)	(0.009)	(0.012)	(0.030)	(0.026)
Number of Observations	31269	28335	30888	30844	32862
Number of schools	296	296	296	296	296
Mean in Control	-0.00	0.16	0.64	0.00	-0.01
R-squared	0.06	0.01	0.04	0.04	0.04

NOTE: Self-control, shopping habits index, and financial autonomy index are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for socioemotional skills and preferences (including outcomes in this table and the ones in columns 1-3 in Table A.12) and shopping habits, separately. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week.

Table A.16: ATT Effects on Students' Financial Knowledge and Academic Outcomes

	Financial Literacy	Academic Outcomes			
		2016		2017	
		GPA	Pr(Promoted)	GPA	Pr(Promoted)
	(1)	(2)	(3)	(4)	(5)
Effective Treatment	0.197***	-0.019	0.003	0.007	0.006
	[0.029]	[0.017]	[0.011]	[0.019]	[0.012]
Number of Observations	19487	19054	18574	11498	11703
Number of schools	296	296	296	296	296
Mean in Control	-0.01	-0.01	0.81	-0.02	0.80
R-squared	0.22	0.86	0.08	0.83	0.07

NOTE: Financial literacy and GPA are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if at least one of the teachers attended one or more of the training sessions and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for academic outcomes, GPA and Pr(Promoted). OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week. In the case of financial literacy and GPAs, the value of the dependent variable at baseline is also included as a control.

Table A.17: ATT Effects on Students' Socioemotional Skills and Preferences

	Consciousness	Self-Control	Impulsiveness	Pr(Risk averse)	Pr(Hyperbolic)
	(1)	(2)	(3)	(4)	(5)
Effective Treatment	-0.016	0.041**	-0.000	0.013	-0.000
	[0.019]	[0.020]	[0.020]	[0.008]	[0.007]
Number of Observations	15705	17220	13015	13324	13193
Number of schools	296	296	296	296	296
Mean in Control	0.00	0.00	0.00	0.68	0.16
R-squared	0.20	0.21	0.18	0.07	0.02

NOTE: Consciousness, self-control, and impulsiveness are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if at least one of the teachers attended one or more of the training sessions and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, has dinner with parents all days of the week, and the value of dependent variable at baseline.

Table A.18: ATT Effects on Students' Consumption and Savings Habits

	Consumption			Savings
	Pr(Budgeting)	Shopping Habits Index	Financial Autonomy	Pr(Account)
	(1)	(2)	(3)	(4)
Effective Treatment	0.006	0.077***∧∧	0.021	-0.005
	[0.009]	[0.020]	[0.019]	[0.007]
Number of Observations	15672	15928	16696	16584
Number of schools	296	296	296	296
Mean in Control	0.64	0.00	-0.01	0.16
R-squared	0.06	0.05	0.16	0.11

NOTE: Shopping habits index and financial autonomy are standardized by grade relative to the control group in the original experimental sample of 300 schools. School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if at least one of the teachers attended one or more of the training sessions and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. ∧ significant at 10%; ∧∧ significant at 5%; ∧ ∧ ∧ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, has dinner with parents all days of the week, and the value of dependent variable at baseline.

Table A.19: ATT Effects on Students' Access to Credit and Delinquency

	Pr(Records)	Pr(Credit)	Pr(Bank Loan)	Pr(Microcredit)	Pr(Default/ Arrears)
	(1)	(2)	(3)	(4)	(5)
Panel A: Two years after the intervention (June 2018)					
Effective Treatment	-0.012	0.002	0.002	-0.001	-0.011
	[0.012]	[0.004]	[0.004]	[0.001]	[0.012]
Number of Observations	7850	7850	7850	7850	7850
Number of Schools	296	296	296	296	296
Mean in Control	0.23	0.03	0.03	0.00	0.21
R-squared	0.07	0.03	0.03	0.03	0.07
Panel A: Three years after the intervention (June 2019)					
Effective Treatment	-0.025**	-0.006	-0.006	0.000	-0.021*
	[0.012]	[0.005]	[0.005]	[0.001]	[0.012]
Number of Observations	13714	13714	13714	13714	13714
Number of Schools	296	296	296	296	296
Mean in Control	0.30	0.07	0.07	0.00	0.27
R-squared	0.07	0.04	0.04	0.02	0.07

NOTE: School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if at least one of the teachers attended one or more of the training sessions and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. $\wedge$ significant at 10%; $\wedge\wedge$ significant at 5%; $\wedge\wedge\wedge$ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: grade, sex, currently working, received financial education lessons in the past, ratio of household members to bedrooms, asset index, high level of parental supervision, lives with both parents, and has dinner with parents all days of the week. EQUIFAX records correspond to June 2018 and June 2019, two and three years after the intervention.

Table A.20: ATT Effects on Teachers' Financial Literacy and Consumption and Saving Habits

	Financial Literacy	Consumption		Savings		
		Pr(Budgeting)	Shopping Habits Index	Pr(Save)	Pr(Save Formally)	Pr(Save Informally)
	(1)	(2)	(3)	(4)	(5)	(6)
Effective Treatment	0.460***	-0.017	0.157	0.118***∧∧∧	0.195***∧∧∧	0.109**
	(0.119)	(0.027)	(0.122)	(0.038)	(0.055)	(0.047)
Number of Observations	417	331	280	334	376	334
Number of schools	250	212	184	214	232	214
Mean in Control	0.03	0.92	0.03	0.84	0.64	0.77
R-squared	0.37	0.43	0.33	0.40	0.31	0.41

NOTE: Financial literacy exam score and shopping habits index are standardized relative to the control group in the original experimental sample with 282 schools with teacher exit survey and exam records. School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if the teacher taught at least one lesson in the classroom and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. ∧ significant at 10%; ∧∧ significant at 5%; ∧∧∧ significant at 1% after correcting pvalues for multiple testing. Correction for multiple testing implemented for shopping and saving habits, separately. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, type of contract, total hours teaching, experience, degree in social sciences, and postgraduate studies.

Table A.21: ATT Effects on Teachers' Access to Credit and Delinquency

	Pr(Records)	Pr(Credit)	Pr(Bank Loan)	Pr(Microcredit)	Pr(Default/ Arrears)
	(1)	(2)	(3)	(4)	(5)
Panel A: Two years after the intervention (June 2018)					
Effective Treatment	0.007	0.062	0.112**	0.009	-0.145***∧∧∧
	(0.015)	(0.051)	(0.051)	(0.043)	(0.053)
Number of Observations	417	417	417	417	417
Number of schools	250	250	250	250	250
Mean in Control	0.98	0.65	0.58	0.27	0.69
R-squared	0.30	0.41	0.42	0.39	0.38
Panel B: Three years after the intervention (June 2019)					
Effective Treatment	-0.011	0.005	0.051	0.049	-0.095*
	(0.008)	(0.047)	(0.048)	(0.043)	(0.049)
Number of Observations	417	417	417	417	417
Number of schools	250	250	250	250	250
Mean in Control	1.00	0.72	0.67	0.28	0.78
R-squared	0.36	0.41	0.43	0.41	0.39

NOTE: School pairs with incomplete survey records for at least one school are excluded from estimation. Effective treatment is defined as a dummy equal to one if the teacher taught at least one lesson in the classroom and it is instrumented with random assignment to the treatment group. * significant at 10%; ** significant at 5%; *** significant at 1%. ∧ significant at 10%; ∧∧ significant at 5%; ∧ ∧ ∧ significant at 1% after correcting pvalues for multiple testing. OLS estimates, standard errors clustered at the school level are reported in brackets. All specifications include a set of dummy variables that correspond to the matched-pair of schools and the following set of controls: sex, type of contract, total hours teaching, experience, degree in social sciences, and postgraduate studies.

Table A.22: Determinants of the Probability to Teach the Financial Education Lessons

	Pr(cover most lessons)	Pr(cover some lessons)
	(1)	(2)
Sex	0.002	0.034
	[0.059]	[0.063]
Age	-0.002	0.001
	[0.002]	[0.003]
Staff contract	0.050	0.055
	[0.084]	[0.087]
Teaching burden (more than 25h)	-0.076	0.003
	[0.072]	[0.072]
Experienced teacher	-0.109	0.004
	[0.069]	[0.086]
Degree in social sciences	-0.042	0.014
	[0.057]	[0.068]
Average students' initial GPA	0.054	-0.086
	[0.181]	[0.206]
Average students' initial financial literacy score	0.031	0.103
	[0.311]	[0.349]
Arequipa	-0.082	-0.092
	[0.090]	[0.131]
Junin	0.367***	0.326***
	[0.104]	[0.084]
Piura	0.098	0.177**
	[0.090]	[0.088]
Puno	-0.035	-0.153
	[0.085]	[0.122]
San Martin	0.194	0.369***
	[0.136]	[0.071]
miss_contr	0.043	0.007
	[0.082]	[0.075]
Number of Observations	240	240
Number of schools	144	144
R-squared	0.11	0.14

Note: Significance levels (* 10%; ** 5%; *** 1%). OLS estimates, standard errors clustered at the school level are reported in brackets. Sample of teachers in the treatment group. Based on teachers' self report, covering most lessons implies covering at least 50% of the material in the workbooks, while covering some lessons implies covering at least one lesson of the curriculum.

B Scales Used to Measure Personality Constructs and Preferences

B.1 Conscientiousness

Please read the following statements and for each mark the box that best represents you (*Does not describe me, describes me a little, describes me, describes me a lot, completely describes me*)

(a) Does a thorough job

(b) Can be somewhat careless

(c) Is a reliable worker

(d) Tends to be disorganized

(e) Tends to be lazy

(f) Perseveres until the task is finished

(g) Does things efficiently

(h) Makes plans and follows through with them

(i) Is easily distracted

Source: Pervin and John [1999].

B.2 Self-Control

Please read the following statements and for each mark the box that best represents you (*Does not describe me, describes me a little, describes me, describes me a lot, completely describes me*)

(a) I have a hard time breaking bad habits

(b) I get distracted easily

(c) I say inappropriate things

(d) I refuse things that are bad for me, even if they are fun

(e) I am good at resisting temptation

(f) People would say that I have very strong self-discipline

(g) Pleasure and fun sometimes keep me from getting work done

(h) I do things that feel good in the moment but regret later on

(i) Sometimes I cannot stop myself from doing something, even if I know it is wrong

(j) I often act without thinking through all the alternatives

Source: Tangney et al. [2004].

B.3 Time-preferences

1. Would you prefer to receive...

200 soles today	1
250 soles in 1 month	2 (go to question 2)

2. Would you prefer to receive...

200 soles today	1
300 soles in 1 month	2 (go to question 3)

3. In questions 1 and 2, you did not accept the hypothetical payment that was offered in a month. What is the minimum amount that you would require to agree to wait instead of getting the 200 soles today?

..... soles	1
I do not want to wait	2

1. Would you prefer to receive...

200 soles in 6 months	1
250 soles in 7 months	2 (go to question 5)

2. Would you prefer to receive...

200 soles in 6 months	1
300 soles in 7 months	2 (go to question 6)

3. In questions 4 and 5, you did not accept the hypothetical payment that was offered in 7 months. What is the minimum amount that you would require to agree to wait 7 months instead of getting the 200 soles in 6 months?

..... soles	1
I do not want to wait	2

Source: Adapted from Ashraf et al. [2006].

B.4 Impulsiveness

People are different in terms of the way they behave and think about diverse situations. The next question will try to learn about how you act and think in different situations. Do not stop too long in each of the statements. Please answer quickly and honestly (*Never, occasionally, sometimes, always*)

(a) I put effort to guarantee that I will have enough money to pay for my expenditures

(b) I am more interested in the present than the future

(c) I save regularly

(d) I plan tasks carefully

(e) I am a careful thinker

(f) I am restless at lectures or classes

(g) I find it hard to remain still for long periods

(h) I concentrate easily

(i) I can think about only one thing for a long time

(j) I get easily bored when solving thought problems

Source: Orozco-Cabal et al. [2010]. The authors validated a list of statements in Spanish based on the original Barratt Impulsiveness Scale.

B.5 Risk aversion

1. If you could choose between these two options, what would you pick?

100 soles guaranteed	1
A lottery with a 50% probability of winning 150 soles and a 50% probability of winning nothing	2

2. If you could choose between these two options, what would you pick?

100 soles guaranteed	1
A lottery with a 50% probability of winning 400 soles and a 50% probability of winning nothing	2

Source: Own elaboration.

C Financial Literacy Exams

C.1 Students

NINTH GRADE

1. Rebecca has saved S/ 10,000 in a moneybox at home. Her plan is to enroll in an English course next year and she needs all of the money she saved. Which is the safest place for her money?

   (a) A closet in her bedroom

   (b) A bank savings account

   (c) In the house of a close friend

   (d) Buying jewelry that she can sell later

2. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

   (a) When you want to give tickets to your parents to travel to Europe

   (b) When you want to purchase a videogame

   (c) When you want to buy a motorcycle that would help you to get a job delivering pizza

   (d) When you want to buy fashion clothes

3. David just found a job with a take-home pay of S/ 2,000 per month. He must pay S/ 1000 for rent and S/ 150 for groceries each month. He also spends S/ 250 per month on transportation and S/ 300 in movie outings and restaurants. How many months will it take him to accumulate savings of S/ 600.

   (a) 1 month

   (b) 2 months

   (c) 3 months

   (d) 4 months

4. Jose and Manolo work together in the finance department of the same company and earn the same pay. Manolo spends his free time taking work-related classes to improve his computer skills; while Jose spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

   (a) Jose will make more because he is more social

   (b) Jose will make more because Manolo is likely to be laid off

   (c) Manolo will make more money because he is more valuable to his company

   (d) Jose and Manolo will continue to make the same money

5. The parents of Rachel told her to get groceries for the week at the supermarket. They gave her a shopping list and S/ 300. At the supermarket, she realized that the total amount she had to pay was S/ 315. Which of the following is the best solution to the problem that Rachel is facing?

   (a) Give back everything and go back home without any groceries

   (b) Ask for a discount

   (c) Leave the chocolate ice cream that was included in the shopping list

   (d) Borrow S/ 15 from a stranger in the line

6. Ana is mother of two children who attend to primary school; one is 6 and the other 9 years old. Ana is the only one who takes care of the children and has some issues managing her budget. Her friend suggested her to classify her needs by primary and secondary in order to take better financial decisions. Which of these is a secondary need at Ana's home?

   (a) Buy groceries for the month

   (b) Pay the rent

   (c) Buy a TV

   (d) Buy school supplies and uniforms

7. Julio is a house painter. He has been asked to paint a house the next Monday at 8am, but he was planning to help his brother painting his house at the same time the same day. Julio decides to refuse the offer and help his brother. What is the opportunity cost of helping his brother?

   (a) The amount he would have earned if he have accepted the offer

   (b) A little bit more than the amount he would have earned for painting the house

   (c) A little bit less than the amount he would have earned for painting the house

   (d) Julio does not have an opportunity cost for helping his brother

8. In town Q, quinoa is produced but there are no roads that connect this town with the capital of the region, which impedes the transport of the product. Besides affecting the firms that produce quinoa, this problem handicaps the families of Q because the growth of this economic activity creates more and better employment. In your opinion, who is responsible of building a new road that connects town Q to the capital of the region?

   (a) The State because it is responsible of facilitating the infrastructure that is needed to foster economic activities

   (b) Quinoa firms because they are responsible of assuming the cost of the means that would benefit them directly

   (c) The inhabitants of town Q because fostering the economic activity triggers the town development

   (d) The banks of Q. Otherwise, the firms would not be able to pay the loans they have with the banks

9. Which of the following is **NOT** a role that families play in the economy?

   (a) Establish regulatory measures to economic activities

   (b) Consumption of goods and services offered in the market

   (c) Be employed by the firms that produce goods and services

   (d) Require a minimum quality of the goods and services they consume

10. Angelica receives a take-home pay of S/. 1,500 monthly. She has decided to save S/. 100 monthly. Based on this scheme, what should she look for in her monthly plan?

    (a) Her monthly expenditures should not be higher than S/. 1,400

    (b) Her monthly expenditures should not be higher than S/. 1,500

    (c) Look for an increase of S/ 100 in her income

    (d) Her savings should not be higher than S/. 1,500 ?

11. Which of the following is an example of saving?

    (a) Raul is going to buy a car in two years from now. To achieve this, he saves a fraction of his monthly income

    (b) Raul is going to buy a car in six months from now. To achieve this, he asks for a loan in the bank

    (c) Raul recently bought a car. To face any emergency, he has purchased an insurance in a financial institution

    (d) Raul bought a car and rents it to other person. With this, he gets an additional income to spend with his family

12. Mauricio's parents give him S/ 40 weekly. From Monday through Friday he spends S/ 10 in transportation, S/ 7.5 in groceries and S/ 3 in school supplies. On Friday evenings, Mauricio gives Math lessons to his friend and receives S/ 10. How much money left does he have to go out and have fun with his friends on the weekend?

    (a) S/. 29.5

    (b) S/. 9.5

    (c) S/. 19.5

    (d) S/. 40

13. Norma has elaborated a monthly budget in the following way:
    Which is the error in Norma's budget?

Total INCOME	S/ 1800
Total EXPENDITURES	S/ 1700
SAVINGS	S/ 200

(a) Her income is greater than her expenditures

(b) Her savings are too low

(c) Her expenditures plus savings are greater than her income

(d) Her income plus savings are greater than her expenditures

14. Which of the following is an example of investment?

(a) Diana is going to open a clothing shop with her savings

(b) Diana is going to save one half of her salary in the bank

(c) Diana is going to buy an insurance in case of an emergency

(d) Diana is going to give her savings to her unemployed sister

15. The Rodriguez and The Vera are families that have lived next to each other for several years and have decided to set up a business together. The total income of The Rodriguez is greater than the total income of The Vera. Can we say that The Rodriguez are in better conditions to invest in a new business?

(a) Yes, because their income is greater

(b) No, because we have to calculate the budget and evaluate how much is left after the expenditures of each family

(c) No, The Rodriguez can lose everything tomorrow

(d) Yes, The Vera cannot invest as much as The Rodriguez in the new business

TENTH GRADE

1. Rebecca has saved S/ 10,000 in a moneybox at home. Her plan is to enroll in an English course next year and she needs all of the money she saved. Which is the safest place for her money?

   (a) A closet in her bedroom

   (b) A bank savings account

   (c) In the house of a close friend

   (d) Buying jewelry that she can sell later

2. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

   (a) When you want to give tickets to your parents to travel to Europe

   (b) When you want to purchase a videogame

   (c) When you want to buy a motorcycle that would help you to get a job delivering pizza

   (d) When you want to buy fashion clothes

3. David just found a job with a take-home pay of S/ 2,000 per month. He must pay S/ 1000 for rent and S/ 150 for groceries each month. He also spends S/ 250 per month on transportation and S/ 300 in movie outings and restaurants. How many months will it take him to accumulate savings of S/ 600.

   (a) 1 month

   (b) 2 months

   (c) 3 months

   (d) 4 months

4. Jose and Manolo work together in the finance department of the same company and earn the same pay. Manolo spends his free time taking work-related classes to improve his computer skills; while Jose spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

   (a) Jose will make more because he is more social

   (b) Jose will make more because Manolo is likely to be laid off

   (c) Manolo will make more money because he is more valuable to his company

   (d) Jose and Manolo will continue to make the same money

5. Pierina plans to pursue a Master in Finance. However, she does not have enough money to afford it and cannot wait to save because she would lose a year of studies and the possibility of getting a promotion at her job. Which of the following financial products would be the most adequate so that Pierina can afford her postgraduate studies?

   (a) Savings account

   (b) Mortgage loan

   (c) Studies loan

   (d) Credit card

6. Which of the following stakeholders does **NOT** belong to the financial intermediation process?

   (a) People that have savings accounts

   (b) People that have savings in panderos or juntas

   (c) Banks

   (d) The State

7. Marta is 20 years old and has been working in a firm for several months. Overall, she feels satisfied with the labor conditions but contributing monthly to the AFP bothers her. Marta does not understand the usefulness of this contribution since she is very young and would prefer to have that money in her hands. What would you say to Marta?

   (a) Her monthly contribution is necessary to guarantee her own pension when she retires

(b) Her monthly contribution is necessary to guarantee the pensions of all the people working in her firm

(c) Her monthly contribution is not necessary since she is less than 30 years old and she can decide to stop contributing

(d) Her monthly contribution is not necessary and she can ask for a reimbursement

8. Which of the following utilizations of a credit card harms the financial system and the society?

(a) When people use the credit card to pay for a family emergency

(b) When people use the credit card to buy things they will not be able to repay in the future

(c) When people use the credit card to buy medicines

(d) When people use the credit card to buy home appliances

9. Why is the financial system important for the society?

(a) Because the banks supply products with better conditions for poor people

(b) Because it allows people without purchasing power to consume above their income

(c) Because it connects people who save with people who need resources in a secure and efficient way

(d) Because it increases the earnings of financial entities

10. Franco has decided to save a monthly amount in a financial entity. He has done some research about the annual interest rate that banks pay and the effective annual interest rate (EAIR). These are the results of his research:

Bank	**Annual interest rate**	**EACR**
El Banquito	1.1%	1.2%
La Casa del Dinero	1.1%	1.8%
Nuestro Dinero	1.4%	1.5%

With this information, which bank should Franco choose to open a savings account?

(a) El Banquito

(b) La Casa del Dinero

(c) Nuestro Dinero

(d) It doesn't matter, all of them offer the same benefits

11. Which of the following is a passive product?

(a) Credit card

(b) Mortgage loan

(c) Savings account

(d) Consumption credit

12. Monica has S/. 4,000 and has decided to open a pet clinic. Can we say that Monica's decision is an investment?

(a) Yes, because she is allocating money to an economic activity with the goal of earning more money

(b) Yes, because she is allocating money to an activity that will benefit all the dogs in her neighborhood

(c) No, because opening a business is a more active form of saving money

(d) No, because the money to open the business comes from a loan

13. Which is of the following is **NOT** a responsible management of personal finance?

(a) Cristina is indebted with a bank and, in order to pay it, she is borrowing money from other bank

(b) Cristina is indebted with a bank and, in order to pay it, she is cutting her monthly expenses

(c) Cristina has a mortgage debt that is paying monthly for several years

(d) Cristina is saving to invest in a business in the future

14. Which of the following is an example of insurance?

(a) Sebastian has an insurance against accidents in a financial entity

(b) Sebastian is saving in a Municipal Bank because he thinks it is a more trustable and secure entity

(c) Sebastian has invested his money in his father's business because he feels more secure

(d) Sebastian has bought a safe-deposit box to save his money and avoid any risk

15. Celia needs a loan to buy her sewing machine for her atelier. She has visited 3 banks and this is the information she collected about the interest rate and the effective annual cost rate (EACR):

Bank	**Annual rate**	**EACR**
Banco para la Microempresa	9%	10.2%
Banca Amiga	8%	10.5%
Banco La Union	8.5%	9.3%

Where should Celia ask for a loan?

(a) Banco para la Microempresa

(b) Banca Amiga

(c) Banco La Union

(d) It doesn't matter, all of them offer the same benefits

ELEVENTH GRADE

1. Rebecca has saved S/ 10,000 in a moneybox at home. Her plan is to enroll in an English course next year and she needs all of the money she saved. Which is the safest place for her money?

   (a) A closet in her bedroom

   (b) A bank savings account

   (c) In the house of a close friend

   (d) Buying jewelry that she can sell later

2. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

   (a) When you want to give tickets to your parents to travel to Europe

   (b) When you want to purchase a videogame

   (c) When you want to buy a motorcycle that would help you to get a job delivering pizza

   (d) When you want to buy fashion clothes

3. David just found a job with a take-home pay of S/ 2,000 per month. He must pay S/ 1000 for rent and S/ 150 for groceries each month. He also spends S/ 250 per month on transportation and S/ 300 in movie outings and restaurants. How many months will it take him to accumulate savings of S/ 600.

   (a) 1 month

   (b) 2 months

   (c) 3 months

   (d) 4 months

4. Jose and Manolo work together in the finance department of the same company and earn the same pay. Manolo spends his free time taking work-related classes to improve his computer skills; while Jose spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

   (a) Jose will make more because he is more social

   (b) Jose will make more because Manolo is likely to be laid off

   (c) Manolo will make more money because he is more valuable to his company

   (d) Jose and Manolo will continue to make the same money

5. Nicolas makes S/. 1,800, spends S/. 1,400 to cover basic needs and allocates S/. 100 to savings. Each month, Nicolas knows that he has S/ 300 remaining to spend on entertainment activities. Today Nicolas visited a music store and saw a guitar that cost S/ 200 and he wants to purchase it because he wants to learn how to play one since he was a kid. What would you tell Nicolas?

   (a) That he has the purchasing power to buy the guitar

   (b) That he can buy the guitar but he won't be able to save this month

   (c) That he should not buy the guitar since it wasn't planned in his budget

   (d) That he should not buy the guitar because it will mess up his finances

6. Credit cards are useful for people since it allows them to satisfy needs during seasons in which they don't have enough purchasing power and enable them to pay for those things later. Which one of these is another benefit of using a credit card responsibly?

   (a) Having a good credit history, which facilitates the access to better credits

   (b) Having an important savings level, which helps to cover unexpected expenses

   (c) Having an intangible fund in case of an unemployment spell

   (d) Having access to plastic money, which avoids the necessity of having money in the pocket

7. Piero earns S/. 1,200 monthly, of which he spends at least S/. 1,000 to satisfy basic needs. Recently, he saw a TV that he likes, but is very expensive. Piero has found out that he can access to an immediate loan without paperwork, but has to pay S/ 400 monthly for 12 months. What would you recommend to Piero?

(a) To not accept the loan, because at this moment he has not the purchasing power to pay it

(b) He can accept the loan, but the will have to look for another job or ask for a raise

(c) To not accept the loan, since a TV is not a good investment

(d) He can accept the loan because his income is greater than the monthly payment

8. Melisa needs to send an amount of money to her uncle that lives abroad. She saw in the newspaper that there is bank that offers international transfers with a flat rate of S/ 2 for any transferred amount. When Melisa went to the bank, she was informed that the flat rate is valid only for those who are indebted with the bank. She looked again the newspaper and noticed that this condition is not specified. Do you think that Melisa's rights as a financial customer are being violated?

   (a) Yes, since the bank is using misleading advertising by omitting important information

   (b) Yes, since the bank is offering a preferential treatment to those who have an account

   (c) No, since she doesn't have an account, she simply cannot access the special offer

   (d) No, because she is being informed that the actual rate S/. 10 and not S/. 2

9. In which situation, is it advisable to make the minimum payment of a credit card?

   (a) Always, to have more cash available

   (b) In case of an emergency that impedes to make the full monthly payment

   (c) In a month in which one wants to treat oneself

   (d) In a month in which one has extra income

10. Three months ago, Brenda got a credit card at a bank. She made sure to read all the contract before signing it. Since then, she has been very responsible with the credit card. However, in her current monthly account, there is a purchase of an insurance that she never asked or authorized. She knows that her rights as consumer have been violated and she wants to present a complaint. Which is the best way to do it?

    (a) Presenting the complaint to the financial entity directly

    (b) Presenting the complaint to the National Institute of Defense of the Competition and Protection of the Intellectual Property (INDECOPI)

    (c) Presenting the complaint the Superintendence of Banks and Insurances (SBS)

    (d) Presenting the complaint to the Association of Banks of Peru (ASBANC)

11. A year ago, Rodrigo got a loan from bank A and this month he will finish paying it without having any delay in his monthly payments. Rodrigo needs another loan, so he approached to bank B. The bank B checked his credit history by verifying Rodrigo's status in a risk central. When Rodrigo noticed that he was found in the central risk system, he got worried and thought that he wouldn't get the loan from bank B. What would you say to Rodrigo?

    (a) To not worry because if he paid his previous loan to bank A without problems, he has a good credit history which will help him to get the loan from bank B

    (b) That he has to complain in INDECOPI because he should not be reported in the risk central

    (c) To not worry because bank B does not use the information of the risk central. They just check it to fulfill the paperwork

    (d) That bank A made a mistake and that he has to ask them to erase his information from the risk central

12. Select which one of these institutions is in charge of the regulation and supervision of financial entities, insurances and the private pensions system:

    (a) Superintendence of Banks and Insurances (SBS)

    (b) National Institute of Defense of the Competition and Protection of the Intellectual Property (INDECOPI)

    (c) Central Bank of Peru (BCRP)

    (d) Association of Banks of Peru (ASBANC)

13. After several years of saving under the mattress, Susana opened a savings account in the bank. For her bad luck, the bank broke a few months after and she does not know what to do because she is afraid of losing the S/ 30,000 that she had in her account. What would you tell Susana?

    (a) To not worry, because the State will give her back her money

    (b) To not worry, because her savings are secured with the Secure Deposit Fund (FSD)

    (c) That she took a risk and pitifully she lost her savings

    (d) That not everything is lost because she can recover 20

14. Roberto is moving and he is looking for an apartment to rent for the next two years. Recently, he found a place that he likes, but he can afford it with his current salary and savings. Given this, Roberto thinks that each month he could use his credit card to pay the rent. What would you tell Roberto?

    (a) That he won't be able to make it, because the withdrawal of cash is limited using a credit card

    (b) That what he thinks is not advisable since he does not have enough purchasing power and getting indebted using a credit card is very expensive

    (c) To do it because the purpose of a credit card is to cover expenses that are not affordable with the monthly income

    (d) To do it because he won't have to pay interests

15. Alberto has done some purchases with his credit card that were over his purchasing power. The bank that gave him the credit card has blocked it and do not want to give him another loan. Alberto knows that he has a lot of debts but he does not understand the reason of not being able to get another loan because, according to him, he is the only one who is being injured. What would you tell Alberto?

    (a) That the irresponsible use of the credit card also injures the firms, since they won't be able to receive the payment for the products that Alberto acquired

    (b) That the irresponsible use of the credit card also injures the financial system, since the bank has done some expenses that won't be able to recover

    (c) That the irresponsible use of the credit card also injures his children because they will have less opportunities due to the debts he has

    (d) That he is right, nobody, besides him, is injured in this situation

C.2 Teachers

1. Rebecca has saved S/ 10,000 in a moneybox at home. Her plan is to enroll in an English course next year and she needs all of the money she saved. Which is the safest place for her money?

   (a) A closet in her bedroom

   (b) A bank savings account

   (c) In the house of a close friend

   (d) Buying jewelry that she can sell later

2. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

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   (a) 1 month

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4. Jose and Manolo work together in the finance department of the same company and earn the same pay. Manolo spends his free time taking work-related classes to improve his computer skills; while Jose spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

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   (b) Jose will make more because Manolo is likely to be laid off

   (c) Manolo will make more money because he is more valuable to his company

   (d) Jose and Manolo will continue to make the same money

5. Julio is a house painter. He has been asked to paint a house the next Monday at 8am, but he was planning to help his brother painting his house at the same time the same day. Julio decides to refuse the offer and help his brother. What is the opportunity cost of helping his brother?

   (a) The amount he would have earned if he have accepted the offer

   (b) A little bit more than the amount he would have earned for painting the house

   (c) A little bit less than the amount he would have earned for painting the house

   (d) Julio does not have an opportunity cost for helping his brother

6. Which of the following is **NOT** a role that families play in the economy?

   (a) Establish regulatory measures to economic activities

   (b) Consumption of goods and services offered in the market

   (c) Be employed by the firms that produce goods and services

   (d) Require a minimum quality of the goods and services they consume

7. Mauricio's parents give him S/ 40 weekly. From Monday through Friday he spends S/ 10 in transportation, S/ 7.5 in groceries and S/ 3 in school supplies. On Friday evenings, Mauricio gives Math lessons to his friend and receives S/ 10. How much money left does he have to go out and have fun with his friends on the weekend?

   (a) S/. 29.5

   (b) S/. 9.5

(c) S/. 19.5

(d) S/. 40

8. The Rodriguez and The Vera are families that have lived next to each other for several years and have decided to set up a business together. The total income of The Rodriguez is greater than the total income of The Vera. Can we say that The Rodriguez are in better conditions to invest in a new business?

   (a) Yes, because their income is greater

   (b) No, because we have to calculate the budget and evaluate how much is left after the expenditures of each family

   (c) No, The RodrÃguez can lose everything tomorrow

   (d) Yes, The Vera cannot invest as much as The Rodriguez in the new business

9. Pierina plans to pursue a Master in Finance. However, she does not have enough money to afford it and cannot wait to save because she would lose a year of studies and the possibility of getting a promotion at her job. Which of the following financial products would be the most adequate so that Pierina can afford her postgraduate studies?

   (a) Savings account

   (b) Mortgage loan

   (c) Studies loan

   (d) Credit card

10. Which of the following utilizations of a credit card harms the financial system and the society?

    (a) When people use the credit card to pay for a family emergency

    (b) When people use the credit card to buy things they will not be able to repay in the future

    (c) When people use the credit card to buy medicines

    (d) When people use the credit card to buy home appliances

11. Franco has decided to save a monthly amount in a financial entity. He has done some research about the annual interest rate that banks pay and the effective annual interest rate (EAIR). These are the results of his research:

Bank	**Annual interest rate**	**EACR**
El Banquito	1.1%	1.2%
La Casa del Dinero	1.1%	1.8%
Nuestro Dinero	1.4%	1.5%

    With this information, which bank should Franco choose to open a savings account?

    (a) El Banquito

    (b) La Casa del Dinero

    (c) Nuestro Dinero

    (d) It doesn't matter, all of them offer the same benefits

12. Which of the following is an example of insurance?

    (a) Sebastian has an insurance against accidents in a financial entity

    (b) Sebastian is saving in a Municipal Bank because he thinks it is a more trustable and secure entity

    (c) Sebastian has invested his money in his father's business because he feels more secure

    (d) Sebastian has bought a safe-deposit box to save his money and avoid any risk

13. Nicolas makes S/. 1,800, spends S/. 1,400 to cover basic needs and allocates S/. 100 to savings. Each month, Nicolas knows that he has S/ 300 remaining to spend on entertainment activities. Today Nicolas visited a music store and saw a guitar that cost S/ 200 and he wants to purchase it because he wants to learn how to play one since he was a kid. What would you tell Nicolas?

(a) That he has the purchasing power to buy the guitar

(b) That he can buy the guitar but he won't be able to save this month

(c) That he should not buy the guitar since it wasn't planned in his budget

(d) That he should not buy the guitar because it will mess up his finances

14. Three months ago, Brenda got a credit card at a bank. She made sure to read all the contract before signing it. Since then, she has been very responsible with the credit card. However, in her current monthly account, there is a purchase of an insurance that she never asked or authorized. She knows that her rights as consumer have been violated and she wants to present a complaint. Which is the best way to do it?

    (a) Presenting the complaint to the financial entity directly

    (b) Presenting the complaint to the National Institute of Defense of the Competition and Protection of the Intellectual Property (INDECOPI)

    (c) Presenting the complaint the Superintendence of Banks and Insurances (SBS)

    (d) Presenting the complaint to the Association of Banks of Peru (ASBANC)

15. Roberto is moving and he is looking for an apartment to rent for the next two years. Recently, he found a place that he likes, but he can afford it with his current salary and savings. Given this, Roberto thinks that each month he could use his credit card to pay the rent. What would you tell Roberto?

    (a) That he won't be able to make it, because the withdrawal of cash is limited using a credit card

    (b) That what he thinks is not advisable since he does not have enough purchasing power and getting indebted using a credit card is very expensive

    (c) To do it because the purpose of a credit card is to cover expenses that are not affordable with the monthly income

    (d) To do it because he won't have to pay interests

D Normalization of GPAs (For Online Publication)

Using raw GPAs as a performance measure poses several problems since they are not comparable across schools due to differential school quality, grade inflation, grading criteria, among other reasons. To deal with this issue, we construct *school quality normalized* GPAs [Frisancho et al., 2016]. For each subject i in grade g and school s, we define the adjustment factor, A_{igs}:

$$A_{igs} = \frac{\overline{\text{GPA}}_{igs}}{\overline{\text{Exam Score}}_{gs}} \div \frac{\overline{\text{GPA}}_{ig}}{\overline{\text{Exam Score}}_{g}} \tag{D.1}$$

where $\overline{\text{GPA}}_{igs}$ is the average GPA for subject i in grade g and school s. Similarly, $\overline{\text{Exam Score}}_{gs}$ is the average score in the baseline financial literacy exam for grade g in school s. $\overline{\text{GPA}}_{ig}$ and $\overline{\text{Exam Score}}_{g}$ are the average GPA for subject j and exam scores for all students in the same grade, irrespective of the school.

The ratio in the numerator in (D.1) should go up if the school is inflating grades relative to its true quality, for example. If the average GPA in math at grade g and school s is 8/10 but the average exam score for these students is only 5/10, grade g in school s is worse than the raw GPAs suggest. After all, since all students in the same grade take the same baseline financial literacy exam and are graded with the same objective criteria, $\overline{\text{Exam Score}}_{gs}$ should be a good proxy for the quality of the school on a unique scale. The ratio in the denominator in (D.1) is just a constant for all the students in the same grade and it takes the adjustment factor by subject to a common scale.

Define the school quality normalized GPA in subject i for student n in grade g and school s as:

$$\text{GPAnorm}_{nigs} = 100 \left(\frac{\widetilde{\text{GPA}}_{nigs}}{\widetilde{\text{GPA}}_{ig}^{\max}} \right)$$

where:

$$\widetilde{\text{GPA}}_{nigs} = \left(\frac{\text{GPA}_{nigs}}{A_{igs}} \right)$$

and $\widetilde{\text{GPA}}_{ig}^{\max}$ is just the maximum $\widetilde{\text{GPA}}_{nigs}$ in a given grade. Notice that this normalization penalizes grade inflation through a higher A_{igs}.