GIVING A SECOND CHANCE: AN AFTER – SCHOOL PROGRAM IN A SHANTYTOWN INTERACTING WITH PARENTS ´TYPE

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Giving a Second Chance: an After-School Program in a Shantytown Interacting with Parents' *Type*

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Abstract

Most discussion of after-school programs in shantytowns has centered on estimating mean impacts of programs, and results are not conclusive. Previous literature provides some explanations for these mixed results but this paper provides a new channel: the effectiveness of an after-school program on students depends on their parents' *type*. One can argue that those parents who live in a shantytown may be there due to their *bad type* or because of bad luck (*good type* parents who are in a shantytown because they had bad luck in their lives but if they received an opportunity –such as an after-school program for their children- they would exploit it). The complementarities between after-school and parents' *good type* are not obvious. Is a good policy to suggest responsible and committed parents to leave their children many hours a day in an after-school program? Would be better for those children to remain at home in contact with their committed parents? Should policy be directed to the children of *bad type* parents? By using random assignment to evaluate an after-school program in a developing country, we find that it is effective in raising children's school achievement for those whose parents are of *good type*. Thus, this paper provides evidence that the knowledge of the distribution of impacts

is crucial to guide public policy and it is not enough just to change the environments in which youth spend their afterschool hours, increasing time in safe, supervised settings.

JEL Classification: I38; I28.

Keywords: after-school; education; impact evaluation; randomized experiment.

I. Introduction

In recent years, a salutary trend to guide policy choices by empirical evidence has developed increasing experimental and non-experimental evaluations of after-school programs directed to low income students. After-school programs have been hypothesized to improve child behavioural and educational achievements, but evidence whether they really do is mixed.

Previous literature provides possible explanations for the little or no-significance of the impact of after-school programs, including (i) the possible inexistence of a sequenced set of activities designed to achieve the targeted skill objectives (Apsler, 2009); (ii) the limited duration of the intervention evaluated: new skills cannot be acquired instantaneously, it takes time and effort to develop any new behaviors, and relatively complicated skills often must be broken down into smaller steps and mastered sequentially (Durlak and Weissberg, 2007), and also it takes time – often several years – for programs to be fully implemented and they undergo substantial changes in features, operation, and content during the first several years of development (Mahoney and Zigler, 2006); (iii) the existence of negative peer associations (Zief, Lauver and Maynard, 2006) that may provide "deviance training" or may reinforce deviant attitudes and antisocial behavior (Rorie et al., 2010); (iv) children may be more fatigued and acting out because they are spending more time out of their households, or could be misbehaving due to programs tolerated behavior for which students would be disciplined during

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regular school (James-Burdumy, Dynarski and Deke, 2008); (v) the possible low degree of contact with the after-school educators (Grolnick et al., 2007); (vi) the necessity of the staff effectiveness at creating emotional bonds with the youth participants (Gottfredson et al., 2010); (vii) the fact that other several accepted goals of after-school programs were not considered adequately (e.g., positive youth development, parent satisfaction, facilitation of work, peace of mind) (Mahoney and Zigler, 2006); (viii) the "crossover" condition (also known as "contamination") that usually refers to the inadvertent application of the treatment to the control/comparison group or the inadvertent failure to apply the treatment to persons assigned to receive it (Mahoney and Zigler, 2006): families randomly selected into the control condition may still be in need of after-school services and will most likely secure other after-school arrangements, diluting differences between experimental and control conditions if children receive any benefits from alternative arrangements (Riggs and Greenberg, 2004); (ix) it is not yet clear whether the relationship between attendance rates and after-school outcomes is linear or whether there is a point of diminishing returns after which attendance has a negative effect (Riggs and Greenberg, 2004); (x) it may be not enough to merely decrease children's idle time, but rather it is necessary to explore the type and quality of extracurricular involvement available to today's children (Weisman et al, 2003).

Another explanation not addressed in the literature is that mean impact of after-schools can be mixed because of heterogeneity. Hence, it is important to answer questions related to the variation in the impacts across individuals or groups of individuals. In particular, one could argue that in a population like a shantytown, one could find two types of individuals, (i) those who live there because they are of *bad type* –lack of responsibility and conscientiousness or uncommitted with great aspirations and with the importance of education for their family, for example-, and (ii) those who are of *good type* but live in that poor region because of bad luck (*good type* individuals who had

bad fortune in their lives and ended in a shantytown). It is questionable that the effect of an after-school program on poor students would be the same no matter the *type* of their parents. This paper investigates heterogeneity in treatment effects of the after-school program *Apoyo Escolar* using experimental data.

Since 1997, the Educative Center *Los Pinos* have been developing an after-school program called *Apoyo Escolar* in a neighborhood that shows one of the largest rates of poverty, drop-out rates from school, grade retention, drug consumption, and domestic violence in Uruguay. Every day, children attend *Apoyo Escolar* after their school time, and have lunch, practice sports, and receive support with their homework during five hours. In the short run, the program seeks to improve academic performance and behavior at classroom. Also, we plan to collect data on other long term outcomes, such as involvement into criminal activities, drug consumption, and participation in higher education. In this paper, we focus on the short run impact of the program (we just need time to evaluate longer term effects).

The rest of the paper is as follows. Section II reviews the related literature. Section III describes the program and explains the experiment design. Section IV presents the econometric model and the results. Section V concludes.

II. Related literature

Previous literature on impact evaluation of after-school programs shows a great variety of activities enclosed by this name but many of these programs differ to a great extent in the timing, the aims, the target population, the staff qualification, the supplier (school or community) and the neighborhood characteristics (Beets et al. 2009; Brown Cross et al. 2007; Dzewaltowski 2010; Eble et al. 2010; Engels et al. 2005; He, Linden, and MacLeod 2009; Grolnick et al. 2007; Gottfredson, Cross and Soulé 2007; Gottfredson 2004; Gottfredson et al. 2005; Tebes et al. 2007).

Because of this variability, it is important for the researcher to define properly the program object of study: in the present study, we concentrate in the impact evaluation on children's educational attainments particularly of those programs that operate on a regular basis after school time, that include some academic support services besides the recreational activities and that serve primarily low-income students of poor-performing elementary schools.

Many researchers provide deep summaries of previous evaluations of after-school programs (Apsler, 2009; Bodilly and Beckett, 2005; Durlak and Weissberg, 2007; Gottfredson et al., 2010; Granger, 2008; Lauer et al., 2006; Zief, Lauver and Maynard, 2006). Among the recent randomized impact evaluations are James-Burdumy, Dynarski and Deke (2008) and Black et al. (2009), while some examples of non-experimental approaches are Arbreton (2008), Dumais (2009), Hishinuma et al. (2009), Joun Won and Han (2010), Roche, Astone and Bishai (2007), Riggs (2006), Russell, Mielke and Reisner (2009), Turmo et al. (2009), Vanderhaar and Munoz (2006), Zimmer, Hamilton and Christina (2010).

Zief, Lauver and Maynard (2006) and Aizer (2004) offer some mechanisms through which after-school programs could improve outcomes for participants, changing the environments in which youth spend their afterschool time—for example, increasing time in safe, supervised settings; academic support; participating in enriching activities; creating more positive peer associations; and increasing parental involvement in home and school activities. Also, Turmo et al. (2009) emphasize other positive mechanisms such as that after-school programs provide pupils with more learning opportunities than the experiences that school provides. The hypothesis is that after-school care schemes offer a better knowledge-basis for learning than the school and home environments only-that is, attending an after-school program can mean more time spent on homework (quantity of learning) and higher concentration on learning due to professional

surveillance by the after-school staff (quality of learning). Thus, after-school programs have been hypothesized to improve child behavioural and educational achievements, but the empirical evidence on the impact of after-school programs is not conclusive. In order to guide public policy, it is important to answer the question of for whom are afterschool programs most effective and under which circumstances. Many of these evaluations focus exclusively in the mean impact, leaving unanswered questions related to the variation in the impacts across individuals or groups of individuals. In particular there's no precedent in previous literature about the interaction effect of attending after-school and parents' *type* (*good type/bad type*) on children's education at shantytowns.

III. Program and experiment design

<u>The Program</u>

The Educative Center *Los Pinos* is a non-governmental organization at Casavalle, a neighborhood in the suburbs of Montevideo. This neighborhood shows one of the largest rates of poverty, drop-out rates from school, grade retention, drugs consumption, and domestic violence in Uruguay. Since 1997 *Los Pinos* has been developing a program called *Apoyo Escolar* that is focused on male children between six and 15 years old. Children enter *Apoyo Escolar* when they are at first school grade and are allowed to stay until they complete Middle School (nine years).

Currently 220 children attend daily the program at *Los Pinos*, distributed in nine different groups by age and school grade. Through the academic year, from Monday to Friday, children attend school in the morning and *Los Pinos* in the afternoon (five hours a day). At *Los Pinos* they have lunch, practice sports, and receive support with their homework. *Los Pinos* also has a computer room where children can improve their computational skills. The program includes sports competitions (mainly athletics and rugby) against private schools from non-poor neighborhoods in order to make them

interact with children from a different social background. Besides, during most of school vacation time, children attend *Los Pinos* in the afternoon for recreational activities. In addition, twice a year *Los Pinos* organizes trips to the countryside for three days, and also to other cities that they probably could have never visited otherwise.

In order to attend *Los Pinos*, each child has to pay ten dollars monthly (the average salary in this neighborhood is 200 dollars per month); if he is not able to afford it, a relative has to help once a week in the cleaning of the building. The remaining economic resources of *Los Pinos* come from public funds (20 percent) and private donors (80 percent).

The experiment design and data

Randomized impact evaluations are the gold standard but they are few in comparison with other non-experimental approaches in previous literature (regression with control variables, propensity score, building of an artificial matching control group and evaluation of the treated pre and post-after-school programs without a control group, among them). The non-experimental approaches have a potential serious bias problem due to the existence of unobservable characteristics that affect both the participation in after-school activities and the educational outcomes.

In the present study, for the evaluation design we used randomized trials. The publicity of the after-school program *Apoyo Escolar* had the target of finding male children starting their first grade of Primary School in 2010. Thus, during November and December 2009, promoters from *Los Pinos* visited eight local schools and provided the directors of these schools with brochures of *Apoyo Escolar* to distribute among parents. During February 2010 promoters from *Los Pinos* visited house by house (and also local stores) of poor neighborhoods surrounding *Los Pinos* and distributed brochures of *Apoyo*

Escolar. From this advertizing effort, 54 candidates showed up. All the candidates were interviewed with their parents or mentor at *Los Pinos*.

The selection process was as follows: (i) all 54 applicants (and their parents) were subject to an interview. In this baseline survey we collected data on a wide array of both children characteristics and household characteristics. To facilitate future contact we also asked information such as personal email, postal address, and telephone number; (ii) from this population, 28 applicants were randomly assigned to the treated group. The remaining candidates were assigned to the control group.

A necessary condition for the validity of the impact evaluation results is that every pre-treatment characteristic must be balanced between the control group and the treated group (the balancing condition). Thus, once the random allocation was performed, the balancing condition was checked. In case of significant differences at the ten percent level in mean pre-treatment characteristics between control and treated groups the random assignment procedure was repeated until we obtained an allocation that fulfills the balancing condition.

[Insert Table 1]

Table 1 reports the balancing condition and includes, besides baselines characteristics that are directly available by the personal survey, two composite variables built as indexes. One of these composite variables is *Wealth Index*. Children from wealthier households have more material resources to support their educational performance, so we create an index of relative wealth using the information of the personal interview that provides data about goods in the household such as hot water heater, refrigerator, colour television, cable TV service, washing machine, dishwasher, microwave, computer, internet connection and automobile for personal use. For each good i, we have

constructed a dummy variable d_i that takes value one if the house has this good or service, and zero otherwise.

$$\text{"relative wealth index"} = \frac{\sum_{i=1}^{i=13}\left[1 - mean(d_i)\right] d_i}{\sum_{i=1}^{i=13}\left[1 - mean(d_i)\right]}$$

Therefore, as an indicator of relative welfare, the formula above assigned greater weight for those goods or services that are less frequent at households.

The other composite variable is *Some Kind of Disability*, a dummy variable that takes the value one if the child has permanent difficulties to see though wearing glasses, or has permanent difficulties to hear though wearing audiphones, or has permanent difficulties to learn, talk or walk, and zero otherwise.

The main source of data on outcomes is the official school report that provides educational outcomes for each student. In Uruguay each student attending primary school receives a final school report in December and this report provides information about the variation of academic performance and behavior between March and December (the academic year in Uruguay). Both academic performance and behavior at classroom take the values 1 (*Non satisfactory*) to 10 (*Excellent*). In order to approve the academic year, each student must achieve at least the value 4 (*Good*) in academic performance. Thus, we used the final report of December 2010 to get the data on these educational outcomes.

As usual in random evaluations of educational programs in extremely poor regions, some observations suffered attrition at December 2010: six students of the original treatment group and two students of the control group. Though we found some outcomes for them via phone calls, we were not able to collect the complete official school report in those eight cases due to different causes (family problems that derived in changing address and refusal to give the data due to lack of confidence). In Table 2, we compare the pre-treatment characteristics between the individuals that have suffered attrition and

those students who remain in the treated/control groups. Baseline data provide a measure of the similarity of these two groups, while three variables are not balanced (*children's age*, *grade retention in 2009* and *both biological parents at home*).

[Insert Table 2]

As most empirical evaluations in shantytowns, this research experienced a rate of non compliance, and Table 3 reports this rate. The presence of non compliant students introduces bias, so we employ intention-to treat and instrumental variables to address this issue.

[Insert Table 3]

IV. Econometric model and results

The primary purpose of this study is to determine the causal effect of attending *Apoyo Escolar* on children academic achievements and behavior. Formally we want to estimate the following equation:

$$Y_i = a + bT_i + e_i \qquad (1)$$

where Y_i is any of the outcomes of interest for student i (*Grade Retention, Variation of Academic Performance, Variation of Behavior at Classroom*), T_i is a dummy variable that takes the value of one for students assigned to the treated group and zero otherwise, b is the parameter of interest, and e_i is the error term.

To address endogeneity of attending the after-school program *Apoyo Escolar* in educational outcomes, we estimate equation (1) also by Two Stage Least Squares (TSLS), where the endogenous dummy variable *Attended Apoyo Escolar* is instrumented by the exogenous *Randomly Assigned to Apoyo Escolar*. First-stage estimates are reported in Table 4. The point estimate of the coefficient on *Randomly Assigned to After-*

School is significantly different from zero and indicates that the probability for attending *Apoyo Escolar* is 23 percentage points higher for those randomly selected to the after-school program compared to those who were randomly selected to the control group.

[Insert Table 4]

Firstly, in order to draw general conclusions in a context of multiple outcomes, in Table 5 we present findings of a summary index that aggregate information over the three educational outcomes. To construct this summary index we followed the procedure used in Kling, Liebman and Katz (2007). This overall index is defined to be the equally weighted average of z-scores of its components, with the sign of each measure oriented[1] so that more beneficial outcomes have higher scores. The z-scores are calculated by subtracting the control group mean and dividing by the control group standard deviation.

[Insert Table 5]

In Table 5, the results of column (1) reports the intent-to-treat (ITT) estimates, the average treatment effect (OLS) estimates, and the TSLS estimates of the impact of the after-school *Apoyo Escolar* on *Grade Retention, the Variation of Academic Performance and the Variation of Behavior at Classroom.* As Table 5 shows in column (1), the average estimates do not report any significant impact on school first grade children of *Apoyo Escolar* at the end of the first academic year. These results are consistent with previous literature that find little or null effects of after-school programs.

Before the starting of the program, studying qualitative information provided by educators of the after-school program, we include proxy variables of parents' backing,

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[1] Summary Index = (-grade retention +variation of academic performance +variation of behavior at school)/3, all components built as z-scores.

and commitment in the baseline survey. In interviews with educators, we find that they consider that parents backing and engagement in their children's education is a key issue to warrant the positive outcomes sought by the program *Apoyo Escolar* at *Los Pinos*. In addition, educators tell us that, despite their experience accumulated in the first 13 years of *Los Pinos*, they find very difficult to measure "parents' backing and engagement" because it does not seem to be related to parents' education, or to the fact of living with both biological parents, or parents' status in the labor market. Therefore, in the parents' interview preceding the draw, we incorporate questions seeking for observable pre-treatment characteristics that may reasonably be signals of "parents' backing and engagement". We include four variables to employ them as proxy of parents backing: (i) frequency of parents' attendance to school meetings; (ii) frequency of homework revision by parents; (iii) frequency of having lunch/supper parents and children together; (iv) a dummy variable that takes the value one if the family reports to have more than ten books (different from textbooks and simple magazines) at home. Among these four variables, only the variable *More than Ten Books at Home* has variability –in the other three variables, nearly all parents answer the same- and we employ it. Extensive research has been conducted to examine the relationship between student achievements and home environments such as the number of books. For instance, both Liu (2009) and Liu and Withford (2011) find that the number of books at home are associated with students' attainment of science proficiency. Liu and Withford (2011) suggest that the presence of books at home may be a measure of family cultural capital and a predictor of personal and familiar habits such as the relative preference for educational activities over other activities, parents' guidance on school matters, the stimulation to explore and discuss ideas and events, the language employed at home, and parents' aspirations. This cultural capital could in turn guide social mobility and accumulation of human capital. Ozkal, Tekkaya, Sungur, Cakiroglu and Cakiroglu (2011) show an association between books at

home and the availability of a place at home devoted to study, and this suggests another possible channel between books at home and parents' commitment with education. Korat, Klein, and Segal-Drori (2007) relate books at home with children early literacy achievements by means of the frequency of parental book reading to the young child and parental exposure to books. Also, Ngorosho (2011) shows the existence of home environment variables that are significant correlated with reading and writing tests, and sums up previous literature that reports that the availability of books at home is important for the development of children's literacy.

Hence, we assume that the variable *More than Ten Books at Home* could be positively associated with parents' commitment and engagement with their children's educational future (*good type* parents). This allows us to go beyond the simple mean impacts that have so far dominated the literature.

Thus, we now focus our attention on the interaction effect:

$$Y_i = a + b(T_i \times M_i) + cT_i + dM_i + e_i \qquad (2)$$

where Y_i is any of the outcomes of interest for student i, T_i is a dummy variable that takes the value of one for students of the treated group and zero otherwise, M_i is a dummy variable that takes the value one for the students with more than ten books at home, b is the parameter of interest, and e_i is the error term.

The column (2) in Table 5 shows that the direction of the effects of *Apoyo Escolar* interacted with the proxy of parents' *type* is positive for ITT, OLS and TSLS specifications. Also, in the ITT model, the effect, on the overall index that averages together all three outcomes, is statistically significant at 1.5 percent level (and the size of this overall effect is more than one standard deviation, in comparison with the control

group[2]). These results are similar when we control for the variables that are unbalanced due to attrition (*age*, *grade retention in 2009*, *both biological parents at home*)[3]. The lack of statistical power could explain, at least partly, the low significance of the TSLS specification.

Also, the column (2) in Table 5 reports that the point estimate of the coefficient on *More than Ten Books at Home* –the proxy of parents' *good type*- is not significantly different from zero for all specifications (ITT, OLS and TSLS). This could suggest that parents' *good type* alone is not enough and they need a help, an opportunity to raise their children's achievements – such as an after-school program for their kids.

The fact that attending *Apoyo Escolar* interacted with parents' *good type* increases the index of overall performance may be the result of different patterns of effects over the individual outcomes. Thus, we investigate next the effects on each of the three educational outcomes.

[Insert Table 6]

As Table 6 shows, in the three specifications (ITT, OLS and TSLS), all the coefficients of the interaction variables have the expected signs: attending after-school interacting with parents' engagement in their children's education reduces grade retention and impacts favorably on the variation of academic performance and behavior at classroom. The ITT estimates show that the interaction variable *Randomly Assigned to After-School x More than Ten Books at Home* has a significant positive impact around 1.5 grade points[4] on the *Variation of Academic Performance* (column 4) and on the

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[2] The absolute magnitudes of the indices are in units akin to standardized test scores: the estimates shows where the mean of the treatment group is in the distribution of the control group in terms of standard deviation units.

[3] Results mentioned but not shown are available from the authors upon request.

[4] Remember that both academic performance and behavior at classroom take the values 1 (*Non satisfactory*) to 10 (*Excellent*).

Variation of Behavior at Classroom (column 6) at ten percent of significance. Also, after-school attendance interacted with parents' backing seems to impact on grade retention. Both ITT and OLS estimates show that the interaction variable reduces the probability of *Grade Retention* in virtually 40 percent (column 2). As well, all these results are similar when we control for the variables that are unbalanced due to attrition (*age*, *grade retention in 2009, both biological parents at home*)[5]. Thus, the study finds evidence that after-school programs would demand parents' backing and commitment. The program *Apoyo Escolar* of *Los Pinos* has a positive impact on performance at school in those children whose parents are of *good type*.

V. Conclusions

Impact evaluations of after-school programs have grown rapidly in recent years, spurred by the pressure to guide policy choices by empirical evidence. Many of these evaluations focus exclusively in the mean impact, leaving unanswered questions related to the variation in the impacts across individuals or groups. After-school programs have been hypothesized to improve child behavioural and educational achievements, but evidence whether they really do is mixed. Could these mixed results be related to the heterogeneity of effects? One could argue that in a population like a shantytown, one could find two types of individuals, (i) those who live there because they are of *bad type* –lack of responsibility and conscientiousness or uncommitted with great aspirations and with the importance of education for their family, for example-, and (ii) those who are of *good type* but live in that poor region because of bad luck (*good type* individuals who had bad fortune in their lives and ended in a shantytown). By using interaction variables that allow us to go beyond the simple mean impacts that dominate the literature, we found that after-school for disadvantaged children seems to be effective in raising school

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[5] Results mentioned but not shown are available from the authors upon request.

achievement for those whose parents show commitment and engagement with their children's attainments despite living in a shantytown (*good type* parents that seem to live there due to bad luck). These findings in favor of the complementarities between after-school and parents' *good type* are not obvious. Is a good policy to suggest responsible and committed parents to leave their children many hours a day in an after-school program? Would be better for those children to remain at home in contact with their committed parents? Should policy be directed to the children of *bad type* parents? We have concentrated in the impact evaluation on children's educational attainments of the after-school program *Apoyo Escolar* developed by the educative center *Los Pinos,* a non-governmental organization situated in the middle of shantytowns, that operates in its own building on a regular basis after school time, that includes –in an intense regime of 5 hours per day all the year- academic support services besides the recreational activities and that serves low-income students of poor-performing elementary schools. We use random assignment to evaluate this after-school program and employ a proxy of parents' *type* (grade of backing and commitment with the education of their children). Using personal surveys and children individual educational data provided by their official school report at the end of the academic year, our findings suggest that the program *Apoyo Escolar* of *Los Pinos* has a positive impact on educational and behavioral outcomes in those children whose parents are of *good type*. One potential explanation of these findings is that after-school programs do not produce positive impacts simply by changing the environments in which students spend their afterschool time, increasing time in safe, supervised settings: also parents' involvement and backing seems to be crucial. This result could help to guide public policy.

We have to bear in mind that, in this first follow-up, we are evaluating just the impact of a nine month program on children of 6 or 7 years old. In future research, it is necessary to track children and their families during more time in order to evaluate mid

and long-term impacts: new skills cannot be acquired instantaneously, it takes time and effort to develop any new behaviors, and relatively complicated skills often must be broken down into smaller steps and mastered sequentially.

Since *Apoyo Escolar* at *Los Pinos* is a program that includes a great variety of recreational and educational activities, it is interesting to evaluate, in further research, the relative impacts of the different activities embraced at *Apoyo Escolar*. Is it enough just to change the environments in which youth spend their afterschool time—for example, increasing time in safe, supervised settings? Or academic support and participating in enriching activities are the crucial activities? Which are the relative impacts of creating more positive peer associations, and increasing parental involvement in home and school activities? The evaluation of the different features behind an after-school program would provide a deeper picture of how these programs work, could help researchers to disentangle the mechanisms behind the positive impacts obtained and could provide educators with more tools to focus in the essential features and improve the programs.

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Table 1. Pre-treatment characteristics by treatment assignment

	Treated	Control	Difference	p-value
Age (in months)	75.920	77.740	-1.810	0.359
	(6.710)	(7.798)		
Grade Retention in 2009	0.214	0.222	-0.007	0.944
	(0.417)	(0.423)		
More than 10 Books at Home	0.428	0.518	-0.089	0.513
	(0.503)	(0.509)		
Attended Preschool Program	0.357	0.444	-0.087	0.517
	(0.487)	(0.506)		
Mother's First Son	0.428	0.259	0.169	0.193
	(0.503)	(0.446)		
Drugs/Alcohol Problems at Home	0.107	0.111	-0.003	0.963
	(0.314)	(0.320)		
Some Kind of Disability	0.357	0.444	-0.087	0.517
	(0.487)	(0.506)		
Parent Unemployment	0.071	0.111	-0.039	0.616
	(0.262)	(0.320)		
Time from House to Los Pinos	12.141	13.001	-0.857	0.730
(in minutes)	(10.490)	(7.565)		
Number of Siblings	1.531	1.550	-0.019	0.954
	(1.290)	(1.250)		
Inhabitants at Home	4.600	4.700	-0.096	0.799
	(1.396)	(1.409)		
Both biological parents	0.392	0.555	-0.162	0.234
	(0.497)	(0.506)		
Mother's Age (in years)	32.280	32.330	-0.047	0.982
	(8.780)	(7.021)		
Mother's Education (in years)	7.100	7.000	0.107	0.842
	(2.131)	(1.818)		
Wealth Index	0.247	0.242	0.004	0.887
	(0.127)	(0.123)		
School Los Junquillos	0.035	0.111	-0.075	0.290
	(0.188)	(0.320)		
School 341 Artilleros Orientales	0.107	0.111	-0.003	0.963
	(0.314)	(0.320)		
School 336 Los Ángeles	0.142	0.222	-0.079	0.454
	(0.356)	(0.423)		
School 335 Capitán Tula	0.285	0.222	0.063	0.597
	(0.460)	(0.423)		
Observations	28	26		

Note: Standard deviations are in parentheses.

Table 2. Pre-treatment characteristics of those who suffered attrition

	Treated & Control	Suffered Attrition	Difference	p-value
Age (in months)	75.0217	83.375	-8.353	0.000
	(4.649)	(8.158)		
Grade Retention in 2009	0.130	0.625	-0.494	0.001
	(0.340)	(0.517)		
Attended Preschool Program	0.391	0.500	-0.108	0.572
	(0.493)	(0.534)		
Mother's First Son	0.347	0.375	-0.027	0.884
	(0.481)	(0.517)		
Drugs/Alcohol Problems at Home	0.108	0.125	-0.016	0.894
	(0.314)	(0.353)		
Some Kind of Disability	0.369	0.500	-0.131	0.494
	(0.488)	(0.534)		
Parent Unemployment	0.108	0.000	0.108	0.336
	(0.314)	(0.000)		
Time from House to Los Pinos (in minutes)	13.391	8.750	4.641	0.186
	(9.634)	(3.535)		
Number of Siblings	1.478	1.500	-0.021	0.962
	(1.206)	(1.069)		
Inhabitants at Home	4.652	4.250	0.402	0.433
	(1.385)	(0.886)		
Both biological parents	0.521	0.125	0.396	0.038
	(0.505)	(0.353)		
Mother's Age (in years)	32.130	33.875	-1.744	0.571
	(8.479)	(3.563)		
Mother's Education (in years)	7.173	6.125	1.048	0.165
	(1.889)	(2.295)		
Wealth Index	0.253	0.199	0.053	0.269
	(0.123)	(0.134)		
School Los Junquillos	0.086	0.000	0.086	0.395
	(0.284)	(0.000)		
School 341 Artilleros Orientales	0.130	0.000	0.130	0.287
	(0.340)	(0.000)		
School 336 Los Ángeles	0.195	0.000	0.195	0.176
	(0.401)	(0.000)		
School 335 Capitán Tula	0.260	0.250	0.010	0.949
	(0.443)	(0.462)		
Observations	46	8		

Note: Standard deviations are in parentheses.

Table 3 – Treated and randomly assigned to after-school

After-School Attendance	Randomly Assigned to After-School		Total
	0	1	Total
0	19	14	33
1	7	14	21
Total	26	28	54

Table 4. First-stage regression

	Dependent Variable: After-School Attendance
Randomly Assigned to After-School	0.230^{*}
	(.131)
Observations	54

Notes: Standard errors are in parentheses. *Significant at the 10% level.

Table 5 - Effects of *Apoyo Escolar* on overall index of performance at school

	(1) Effect of *Apoyo Escolar*	(2) Effects of interaction
Randomly Assigned to After-School	0.0437 (0.855)	-0.493 (0.125)
More than Ten Books at Home		-0.466 (0.146)
Randomly Assigned to After-School x More than Ten Books at Home		1.160 (0.015)
Model	ITT	ITT
After-School Attendance	0.0383 (0.874)	-0.351 (0.295)
More than Ten Books at Home		-0.277 (0.383)
After-School Attendance x More than Ten Books at Home		0.800 (0.100)
Model	OLS	OLS
After-School Attendance	0.146 (0.856)	-5.031 (0.538)
More than Ten Books at Home		-2.577 (0.465)
After-School Attendance x More than Ten Books at Home		6.251 (0.453)
Model	TSLS	TSLS
Observations	46	46

p-values in parentheses

Table 6 - Effects of after-school on specific outcomes

	(1) Grade Retention (effect of *Apoyo Escolar*)	(2) Grade Retention (effects of interaction)	(3) Variation of Academic Performance at School (effect of *Apoyo Escolar*)	(4) Variation of Academic Performance at School (effects of interaction)	(5) Variation of Behavior at School (effect of *Apoyo Escolar*)	(6) Variation of Behavior at School (effects of interaction)
Randomly Assigned to After-School	-0.0483 (0.670)	0.123 (0.440)	0.0833 (0.826)	-0.552 (0.283)	-0.00758 (0.984)	-0.818 (0.104)
More than Ten Books at Home		0.217 (0.185)		-0.322 (0.530)		-0.741 (0.139)
Randomly Assigned to After-School x More than Ten Books at Home		-0.340 (0.139)		1.450 (0.056)		1.741 (0.019)
Model	ITT	ITT	ITT	ITT	ITT	ITT
After-School Attendance	0.0119 (0.917)	0.233 (0.146)	0.254 (0.506)	0.0143 (0.979)	-0.112 (0.766)	-0.643 (0.221)
More than Ten Books at Home		0.241 (0.107)		0.131 (0.797)		-0.393 (0.429)
After-School Attendance x More than Ten Books at Home		-0.450 (0.050)		0.469 (0.543)		1.093 (0.149)
Model	OLS	OLS	OLS	OLS	OLS	OLS
After-School Attendance	-0.180 (0.680)	1.900 (0.675)	0.278 (0.825)	-5.643 (0.593)	-0.0253 (0.984)	-8.357 (0.532)
More than Ten Books at Home		1.008 (0.585)		-2.752 (0.546)		-4.170 (0.470)
After-School Attendance x More than Ten Books at Home		-2.337 (0.609)		7.283 (0.498)		10.04 (0.460)
Model	TSLS	TSLS	TSLS	TSLS	TSLS	TSLS
Observations	49	49	46	46	46	46

p-values in parentheses