

Do longer school days have enduring educational, occupational or income effects?

A natural experiment on the effects of lengthening primary school days in Buenos Aires, Argentina

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1. Introduction

In 1971, longer school days were decreed for around half the primary schools in the city of Buenos Aires, Argentina. The policy covered all the city neighborhoods and the schools were chosen roughly at random. As a consequence, it was created an unusual opportunity for a natural experiment. In 2006 and 2007, we interviewed a sample of 380 alumni of the 1971 cohort, thirty years after their 1977 graduation in schools both with and without longer days. We tried to identify how the length of their school days affected their education, occupation and income.

After this introduction we describe in section 2 the main traits of the aforementioned policy. Section 3, devoted to the review of the literature is longer than usual. We thought it was important to review and to put in contact both, the older literature on the relationship between the length of school schedules and academic results and, on the other hand, the newer literature devoted to renew the educational production function approach using random or natural experiments. Cross-references between different literatures are rare but, from our point of view, they can help to a better understanding to the issues dealt with here. Section 4 presents the design of the experiment and the characteristics of the data base. Section 5 is devoted to show the main results of the experiment. We conclude in section 6 with a discussion of the results and some of their policy implications.

2. The policy and its context

2.1. The educational system in Argentina and Buenos Aires in 1970. Since the end of the nineteenth century, the Argentine educational system has been traditionally governed by the principles of free and universal access, laity in the public schools and, up to the late 1970s, seven years of compulsory primary education.² Although constitutionally in the hands of the provinces, the federal government continued running some primary schools in most provinces until the late 1970s and early 1980s. The private sector – both religious and secular – was also authorized to run primary and secondary schools. The case of the city of Buenos Aires was peculiar. As the capital of Argentina, until 1996 its administration was in the hands of the federal government, and the same happened with its schools. Enrollment rates in Argentina have been traditionally high when compared to other Latin American countries, and much higher in the city of Buenos Aires than in the rest of the country. At the federal level, enrollment rates for primary, secondary and tertiary education at the end of the 1970s were 93.9%, 63.3% and 18.9% respectively.

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² At the end of the 1970s, the first year of pre-school education was also decreed to be compulsory, and in the early 1990s compulsory education was extended up to the tenth year.

2.2. *The policy of lengthening school days in the city of Buenos Aires.* The policy consisted in the introduction of a double shift (DS) or full time schooling³ in the primary schools of the city of Buenos Aires. It began very gradually, in 1960, and was drastically expanded to almost 50% of the schools in the late 1960s and early 1970s. The new curriculum was put fully in place in 1971.⁴ For the purposes of school administration, the city of Buenos Aires was – and still is – divided into 21 School Districts (SD).

Even where middle classes predominate in the city, there are important socio-economic differences among their quarters and SD. The policy was originally conceived to achieve both educational and social purposes (CNE, 1968 and 1971), and was evenly applied in all the school districts, in such a way that in the early 1970s the proportion of DS primary schools in every school district was around 50% of the total.

From a social point of view, the idea was to provide a solution to the uneven consequences of the increasing participation of women in the labor force. Whilst richer households could pay for nurses or other domestic help, the poorer could not. For that reason, the first DS schools were in poorer SDs. This policy was changed in the late 1960s, when educational purposes began to dominate over social purposes. The change was clearly shown in the parallel modification of emphasis of admission criteria. In 1968, DS schools were ordered to give priority to: (1) the familiar, social and economic needs of the candidates; (2) the proximity of the student's address to that of the school; and (3) the students with sisters or brothers in the school.

In 1971, however, it was clearly established that the main and unavoidable condition to be admitted was to live near the school. Only after that was fulfilled could the school consider the following additional social criteria: (1) the family's unfavorable socioeconomic conditions; (2) whether both parents were working, without domestic help; and (3) the number of siblings.

The 1971 reform of the admission criteria was critical in reducing the selection bias of our research. In addition, it is very well known that the address and the siblings-in-the-school criteria have been predominant in the city of Buenos Aires.

Academic content was very precisely defined for the new DS schools. Extra time was assigned to the following activities:

- a) reinforcement of the academic content already in place, particularly language and mathematics (35%);
- (b) one on one teacher-assisted studying (25%);
- (c) foreign language, typically English (12.5%);
- (d) health, gym and saving habits (7.5%); and
- (e) crafts and job training (20%).

Although originally minded to teach the children useful abilities for the labor market, much of the craft and job training looked old-fashioned from the very beginning.

3. Longer school days, enduring effects of education and natural experiments: a review of the literature

As far as the authors are aware, no previous research has been done with the same purposes and methods of this paper, that is, to assess the enduring educational, occupational and income effects of longer school days. For that reason, we separately review the literature on three different issues: the effects of instructional time on educational outcomes; the enduring, lifetime effects of education and, finally, natural experiments performed on education. It is a little surprising that the vast majority of the literature on the

³ The traditional length of a primary school's schedule in Argentina has been between four and four and a half hours, either in the mornings (more common) or in the afternoons. This system is known as simple schedule or day (*jornada simple*). Accordingly, the new system was named full schedule or day (*jornada completa*) or double shift (*doble jornada*). The length of the school day in the new system was nearly eight and a half hours, including around two hours for lunch.

⁴ See Ministerio de Cultura y Educación (1970).

effectiveness of instructional time was written between 1960 and 1990, as if the discussion has disappeared since then. We also note at the end of the revision, however, a recent revival of the interest in instructional time as an educational policy.

3.1. *Longer school days (allocated/scheduled time) and educational outcomes.* This approach has a long tradition in educational sciences. Up to the middle of the last century it was mostly inspired in the behaviorist and even the Taylorist schools of thought (CIPPEC, 2006). Carroll (1963) was perhaps the first to adopt a more pedagogically oriented approach. Most of the literature since then has agreed that increasing the allocation of instructional time has positive but small impacts on educational achievements, and that these impacts tend to be higher, the lower the countries' GDP and the students' socio-economic status (SES).

One of the oldest and most comprehensive revisions of this literature is Cotton (1989). She distinguishes different varieties of allocated time: school time (number of school days and hours per day); classroom time (hours spent at classrooms); instructional time (the portion of classroom time spent teaching students particular knowledge, concepts or skills); engaged time or time-on-task (portions of time during which students are paying attention to a learning task and attempting to learn); and academic learning time (ALT)⁵. Cotton emphasizes the importance of keeping in mind this taxonomy, because comparisons such as the ratio of school time to instructional time and the ratio of classroom time to time-on-task have produced shocking findings. Only about half of the typical school day is actually used for instruction and the students are engaged in learning activities for only about half of their in-class time.⁶ Cotton concludes⁷ that: (a) there is a small, positive relationship between allocated time and students' achievements; (b) there is a stronger, but still small, relationship between time-on-task and achievements; (c) there is a strong and positive association between ALT and students' achievements and attitudes; (d) there are greater achievements and enhanced attitudes when time-on-task is interactive with the teacher; (e) lower-ability students benefit more from increases in allocated or engaged time, while higher-ability students only benefit very slightly, if at all; (f) the benefits are greater in highly structured fields of study, such as mathematics and foreign languages.

Only one year after Cotton, Berliner (1990) also begins his revision by reminding of the multi-dimensionality of instructional time. He emphasizes that the popularity of research on allocated or scheduled time is just a consequence of the easiness to measure it.⁸ Contrary to the majority of the literature⁹, Berliner concludes that: (a) despite the difficulties of working with a complex variable like raw instructional time in developed countries, the effect of quantity of instruction on achievement is clear and of great relevance to policy debates about education; and (b) the effects of quantity and quality of schooling are much clearer in lesser developed countries.

He adds that Hyman, Wright and Reed (1975) is one of the few studies on the enduring effects of quantity of schooling on the overall quality of the life one leads. Sixteen years after

⁵ ALT refers to that portion of engaged time that students spend working on tasks at an appropriate level of difficulty for them and experiencing high levels of success.

⁶ The rest of the time was typically expended in classroom procedural matters, transitions, disciplinary matters, dead time or off-task activities. After reviewing McMeekin (1993), Thrupp (1998) and Martinic (2002), CIPPEC arrives to the same conclusions regarding the scarcity of effective classroom time, adding that the problem is more serious in regions like Latin America and in poor socio-economic environments.

⁷ Cotton (1989) revised 57 research studies - mainly from developed countries - concerned with the relationship between the educational time factors cited above and the student outcomes of achievement and attitudes. Twenty-nine are primary sources and 28 secondary (reviews, syntheses, and meta-analyses).

⁸ He also points out that most of the contemporary arguments on the role of allocated instructional time on students' achievements were an outgrowth of the Coleman report (Coleman et al., 1966), with its skeptical view regarding the impact on educational outcomes of increased school resources of almost any kind, including time.

⁹ In a shorter revision, Pittman et al. (1986) coincide with Berliner's first conclusion.

Berliner, Bellei (2006) concludes from his revision¹⁰ that most of the American studies on the subject agree: (a) on the existence of a positive and statistically significant relationship between instructional time and academic achievements of the students; (b) on the modest size that relationship; (c) that it is stronger for students with initially low academic achievements; and (d) that it tends to be curvilinear, showing diminishing returns to scale to the increase in instructional time. Bellei argues that the methodological limitations of most of the reviewed studies are huge and come from the small and non-randomly selected samples, the limited range of the independent variables, the cross-sectional nature of most of the studies, the short periods of time involved (generally less than one year) and, finally and most importantly, that it is not clear to what extent the reviewed studies were controlled by other factors with the potential to affect the findings.

Finally, Fuller and Clarke (1994), quoted by CIPPEC (2006), analyze literature specifically referred to developing countries and conclude that the effect of instructional time on educational outcomes is stronger there. CIPPEC (2006) does not find many studies on Latin America, but all of them coincide with the results obtained by Fuller and Clarke (1994).¹¹

School term's length. A close family of studies has analyzed the educational, occupational and income effects of the length of the school year. In his own study, Bellei (2006) evaluates, with a natural experimental methodology, the Chilean "Full School Day-Program", designed to increase the yearly high school instructional time from 955 to 1,216 hours. Every year, an additional group of high schools has been integrated into the program, thereby "potentially establishing a natural experiment". The selection of the schools was not done randomly, but decided by the government according to certain criteria. Bellei uses a differences-in-differences approach and argues that it provides an unbiased estimate of the causal effect of the program on students' academic achievement, as measured by standardized tests. His main findings indicate that the program had positive effects on students' achievements, both in language (between 0.05 and 0.07 standard deviations) and mathematics (around 0.07 sd¹²), and stronger in rural and municipal schools than in urban and private schools.

Marcotte (2005) also performed a natural experiment on the effects of instructional time on Maryland's primary school test scores. He found that natural variation in snowfall over time, which influenced the number of effective school days, has a small but significant effect on students' performance in their exams.¹³ According to Pischke (2007), most of the studies on the effects of the length of the school term, including his own, find that they are positive and significant only regarding educational outcomes like avoiding repetition, but not as regards test scores, future earnings or employment.

3.2. Enduring effects of education. The classical reference here is Hyman, Wright and Reed (1975), who analyze responses to general knowledge questions in public opinion surveys between 1947 and 1974.¹⁴ Based on the fact that the higher the respondents' level of educational accomplishment, the more often were the correct responses given, the authors conclude that "education produces large, pervasive, and enduring effects on knowledge and receptivity to knowledge" (Hyman et al., 1975: 109). This effect of education

¹⁰ In addition to other already quoted papers, he revises Jencks et al. (1972); Bloom (1976); Wiley (1976); Borg (1980); Fisher et al. (1980); Frederick and Walberg (1980); Karweit and Slavin (1981); Brown and Saks (1986, 1987) and Link and Mulligan (1986).

¹¹ Cardoso (Uruguay, n/d); Cervini (Argentina, 2001); Ministerio de Educación de Chile (2003); ANEP (Uruguay, 2003) and Bellei (Chile, 2006).

¹² Standard deviation.

¹³ Only 1 to 2% fewer students tested in harsh winters performed satisfactorily in math than did students examined after mild winters.

¹⁴ In these surveys, people of different ages and educational attainment were polled on their knowledge of a wide variety of issues, from identifying prominent public figures to responding to questions on vocabulary.

is successfully controlled by gender, religion, ethnicity, geographical origin, age, socioeconomic background and current occupational status.

Wolfe (1980) emphasizes, however, that the study is weak because the authors could not control for early intelligence or propensity to learn, in contrast to the vast literature demonstrating that intelligence has a strong effect upon socioeconomic achievements, and that it is likely that all analyses of educational effects which do not include IQ variables suffer severe, although unknown, specification errors.¹⁵ Using a causal model of the enduring effects of education, including the estimated effects of intelligence measures, he concludes that previous studies have seriously overestimated the enduring effects of education¹⁶. A very important point added by Wolfe is that education does increase general intelligence, in such a way that its indirect effect on vocabulary through adult IQ is five times the size of the direct effect.¹⁷

More recently, in the age of the methodologies of instrumental variables and natural experiments, Duflo (2001) studies the educational and labor market outcomes of the construction of 61,000 primary schools in Indonesia in a very short period (1974-1978). Measuring the effects twenty years after the program, in 1995, she finds that: (a) it increased 0.25 to 0.40 the average years of education; (b) it improved by 12% the probability that an affected child would complete primary school; and (c) it raised wages ranging from 3% to 5.4%¹⁸. Combining both effects, she estimates economic returns to education ranging from 6.8% to 10.6%.¹⁹ She also warns about the risks of generalizing her results to other contexts because a number of factors, such as the strong emphasis on education in Indonesia at that time, the possibility of general equilibrium effects of the program on the returns to education²⁰ and the fact that the program induced variations only at the primary school level, while returns to secondary education might have been different. Additionally, individuals whose education level changed because of the program may experience returns to education that differ from the population average because, for instance, only individuals with high expected returns responded quickly to the enrollment opportunities open with the program. Duflo recognizes that the program increased the *quantity* of education and that it is sometimes feared that deterioration in the quality of education might result from this type of program, offsetting any gain in quantity.

Also based on a natural experiment, Meghir and Palme (2003 and 2004) evaluate, around forty years later, the impact on educational attainment and earnings of a major school reform that took place in the 1950s in Sweden. The reform had many common elements with those in other European countries at that time, and included an increase in the years of compulsory schooling, a new national curriculum and the abolition of selection by ability into academic and non-academic streams at the age of twelve. The authors find that the reform increased both the educational attainment and the earnings of those whose parents only had compulsory education. However, the earnings of those with more educated parents declined

¹⁵ His point is very relevant because it is very uncommon nowadays to include intelligence measures in studies of the determinants of educational outcomes. Meghir and Palme (2003, 2004) are some of the exceptions.

¹⁶ He recognizes, however, that his results are conditional until confirmed by longitudinal studies in which intelligence scores are obtained for a representative sample of children, and their subsequent levels of educational, intellectual, and verbal achievements are measured.

¹⁷ "This is the interpretation I would like to draw-that education's primary effect is a generalized development of adult cognitive skills, not necessarily the retention of specific bits of knowledge (Wolfe, 1980, p.113)".

¹⁸ She thinks that the increase in wages she finds proves that there is a combined effect of quality and quantity changes in education leading to an increase in human capital.

¹⁹ She also argues that her 2SLS estimates are similar to OLS estimates and also similar to most estimates reported for developed countries, but smaller than estimates reported in Psacharopoulos (1994) for developing economies.

²⁰ Because of the measuring of the returns twenty years after the program, in an environment where the education levels were higher than when the program began, individuals' returns may be lower than they would be in other developing countries.

- possibly because of a dilution of quality at the top end of the education levels. Although this study is a benchmark in the research of long lasting effects of education, it was not possible to separate in it the effects of the increase in the quantity of education - years of schooling - from the *qualitative* ones - such as the new curriculum or the elimination of selection by ability at the age of twelve. The effects found were also small (see Table 1).²¹

Finally, but perhaps most importantly, Schweinhart et al (2005) report the results of the High/Scope Perry Preschool Study Through Age 40. They identify “both the short- and long-term effects of a high-quality preschool program on young children living in poverty”. They come from a randomized experiment in which a sample of 123 low-income African American children - who were assessed to be at high risk of school failure - was split into a treatment group of 53 and a control group of 68. They measure a variety of outcomes at ages 3, 11, 14, 15, 19, 27 and 40. They find “evidence of positive effects on program-group children’s intellectual performance, school experiences, lifetime earnings and crime rates: Their school achievement was at a higher level, they were more committed to school, and more of them graduated from high school than members of the no-program group. In their adult lives program participants have achieved higher earnings and committed fewer crimes than members of the no-program group (pp. xv and xvi).”

3.3. *Natural and randomized experiments in education.* Fortunately, during this century, there has been a blossoming of a new family of natural and random experiments on the educational and labor market effects of different educational policies. It has renewed the hopes of a better understanding of this very relevant question, after the disappointing results of the vast educational production function research program that followed the challenge posed by Coleman et al. (1966).²² Although more accurate than the previous research program, the most important common trait of this new vintage is that most of the effects of the measured educational policies on educational outcomes are positive but modest, as can be observed in Table 1.²³ Regrettably, only a few experiments have studied the enduring effects of educational policies.

Table 1. Compared results of natural (N) and random (R) experiments on outcomes of educational policies. Primary (P) and Secondary (S) education

Authors (date)	Treatment / Duration of the experiment	Results
A. Preschool improvements		
1. Schweinhart et al. (2005, R, preschool).	High-quality preschool (High Scope Perry Project), Chicago, USA). Duration: 37 years. ²⁴	<p><i>Graduation.</i> High school graduation rates of 77% in the treatment group and 60% in the control group.</p> <p><i>Income.</i> 60% of the treatment group vs. 40% of the control group earning ≥ US\$20.000.</p> <p><i>Quality of life.</i> The treatment group at 40 also had lower crime rates, higher employment rates, more fathers assuming child-rearing responsibilities and higher scores in various intellectual</p>

²¹ As a benchmark for the magnitude of these effects, Anders Björklund (2000) estimates the wage premium per additional year of education to be 4.6% for Sweden (Meghir and Palme, 2004).

²² Two relevant contributions to get a balance of the educational production function research program are Glewwe (2002) and Akerlof and Kranton (2002).

²³ Piketty argues that the class size is perhaps the clearest case at the time of assessing the superiority of natural experiments.

²⁴ ‘Duration’ refers to the time span between the treatment and the measurement of their effects.

		and language tests at very different ages.
2. Kremer and Vermeersch (2004, R, preschool)	Free school meals. Kenya. Duration: 1 year.	<i>Attendance.</i> In spite of the increased fees in treatment schools, attendance to them improved by 8.5 pp (31%). Attendance gains were both for current students and students who had never attended before.
3. Berlinsky et al. (2006, N, preschool).	Effects of a vast preprimary classrooms construction program. Argentina. Duration: 4/5 years.	<i>Attendance.</i> One year of preprimary school increases average third grade test scores by 8% of a mean or by 0.23 of the sd of the distribution of test scores. <i>Non cognitive skills.</i> Preprimary school attendance positively affected student's self-control in the third grade as measured by behaviors such as attention, effort, class participation, and discipline.
B. Increase in school's resources		
4. Duflo (2001, N, P and S).	Program of schools construction. Indonesia. Duration: 20 years.	<i>Graduation.</i> 12% increase in the probability of primary school completion. <i>Years of education.</i> Increase of 0.25 to 0.4 of a year. <i>Wages.</i> 3% to 7% increase in wages. <i>Rates of return.</i> 6.8% to 10.6% for primary education.
5. Glewwe et al. (2007, R, P).	Random provision of textbooks to primary schools in Kenya. Duration: 4 years.	<i>Test scores.</i> No increase in test scores, contrary to the results of the previous literature. Textbooks increased scores for students with high initial academic achievement. Students with weaker academic backgrounds did not benefit from the textbooks. Many of them could not read the textbooks, which were written in English, most students' third language.
6. Duflo et al. (2006) and Evans et al. (2008), R, P.	Provision of free uniforms with an average price of \$ 5.82. Kenya. Duration: up to 5 years.	<i>Attendance.</i> For younger pupils, 6 pp increase (7%) in school attendance and 13 pp (15%) increase for student without a uniform prior to program. For older pupils, 13.5% decline in absence. <i>Years of education.</i> Years of enrollment increased by 0.5 year (13%).
C. Class size		
7. Krueger (1999, R, P).	Reduction of class size (Tennessee STAR Project). Duration: 4 years.	<i>Test scores.</i> Performance of students in smaller classes increased by 4 percentile points the first year and by 1 percentile point per year in subsequent years. Test scores in smaller classes rose by about 0.22 sd. Class size had a larger effect for minority students. <i>Future earnings.</i> A 0.22 sd improvement in test scores resulting from smaller

		class sizes implied an improvement of 1.7% and 2.4% average male and female earnings, respectively.
8. Piketty and Valdenaire (2006, N, P and S).	Class size exogenously determined by the policy of putting a ceiling of 30 students per classroom. France. Duration: 6 years.	<i>Test scores and test scores' gaps.</i> The reduction of one pupil per primary class allowed an increase in the range of 0.3-0.4 points in math's test scores (0.7 in less socio-economically endowed contexts). These results implied that 5 pupils less per classroom in the poorer zones could lead to close 46% of the tests results' gap between them and the non-poor zones. With the same policies, the gap would be closed 22% at the college level and only 4% at the <i>lycée</i> .
9. Dee and West (2008, R, early P).	Reduction of class size (Tennessee STAR Project). Duration: 8 years / 2 years.	<i>Non cognitive skills.</i> Early-grade class-size reductions did improve subsequent student initiative, but these effects did not persist into the 8th grade. Smaller classes in the 8th grade led to 0.05 to 0.09 improvements in measures of student engagement, persisting two years later. Internal rate of return was 4.6% overall and 7.9 in urban schools.
D. Conditional cash transfers		
10. Schultz (2004, R, P and S)	Cash transfers conditional on school attendance and take-up of health services. Education grants reduced private costs of going to school by 50-75%. Health grants equivalent to 20-20% of household income. PROGRESA program, Mexico.	<i>Attendance.</i> Between 3.4 and 3.6 pp increase in attendance for all children in grades 1 to 8. A 11.1 pp increase (19%) in attendance for students who have completed 6th grade and 14.5 pp increase for girls who have completed 6th grade. Spillovers to ineligibles in treatment villages of 5 pp (7%) in secondary enrollment.
11. Barrera-Osorio et al. (2008, R, P and S)	Three kinds of conditional cash transfers. Bogotá, Colombia. Duration: one year.	<p>1. <i>Direct cash transfers.</i> <i>Attendance, permanence.</i> Increases of 2.8 pp in school attendance; 2.6 pp in school permanence. <i>Years of education.</i> Increases of 2.8 pp in the following year's enrollment and 23 pp in the probability to matriculate in tertiary studies. <i>Graduation.</i> 4.0 pp increase in graduation rates</p> <p>2. <i>Part of the cash transfer postponed.</i> <i>Enrollment</i> in both secondary and tertiary institutions increased over the basic treatment by 3.6 and 3.3 pp, respectively, without reducing the current attendance. <i>Spillovers.</i> Negative spillovers on the non-selected siblings and some positive</p>

		peer effects on educational outcomes.
D. Additional teaching support		
12. Banerjee et al. (2005, R, P).	Additional teaching support to lagging children in India. Duration: 2 years.	<i>Test scores.</i> 0.14 / 0.28 sd increase in test scores compared to non-treated peers. One year after the program, initial gains faded to about 0.10 sd.
13. Banerjee et al. (2005, R, P).	Computer-assisted learning program: 2 hours per week of shared computer time. India. Duration: 2 (and more) years.	<i>Test scores.</i> 0.35 and 0.47 sd increase in math scores in the first and second year of the program respectively. After that, the increase tended to fall.
E. Peers effect		
14. Goux and Maurin (2007, N, S).	Neighbors' peer effects. France. Duration: cross-section, educational performance up to lower secondary.	<i>Repetition.</i> The probability of repetition was found to be 0.20 sd higher for adolescents (15-16 years) living in neighborhoods with a higher proportion of mates that have already been held back a grade at age 15.
F. Training programs		
15. Attanasio et al. (2008, R, Training).	Training program in Colombia, with school and on-the-job components. Duration: 19 to 21 months.	<i>Earnings and employment.</i> In the case of women, training increased wage and salaried earnings, the probability of being employed, the amount of days and hours worked, and the probability of having a formal job with a written contract. Smaller effects on men: training only increased wage and salaried earnings and the probability of having a formal job and with a written contract, but not of having employment. Salaried earnings increased 18% for women and 8% for men. <i>Cost-Benefit.</i> The rate of return of the program emerging from cost-benefit analysis was 13.5% for women and 4.5% for men. On-the job training intensity increased the returns of the program.
G. School reforms		
16. Meghir and Palme (2003, 2004, N, S).	Sweden vast school reform (1950s): increase in the years of compulsory schooling; new national curriculum; abolition of selection by ability at the age of 12. Duration: around 30 years.	<i>Years of education.</i> Increase by 0.298 of a year, entirely due to the increase in the educational attainment of those with unskilled fathers. <i>Earnings.</i> Overall, 1.42% increase in earnings. For those with unskilled fathers, the reform increased earnings by 3.4%. <i>Rates of return.</i> If all the changes in earnings were due to changes in the quantity of education, the results implied returns of 6.0% for low ability individuals, 11.6% for those with high abilities and 8.4% overall. If other

		variables played a role those returns were upper bounds.
17. Hoxby and Rockoff (2005, N, P).	Comparison between "lotteried-out" and "lotteried-in" students in the applications to charter schools in Chicago (USA). Duration: 2 years (average).	Compared to their lotteried-out fellow applicants, students who applied, and attended to, charter schools an average of two years starting in the elementary grades, scored about 6 national percentile rank points higher, both math and reading.
G. Length of the school year		
18. Marcotte (2005, N, P and S).	Longer school year as measured by harshness of winters. Maryland (USA). Duration: cross-section, same year.	<i>Test scores.</i> Only between 1 and 2 percent fewer students performed satisfactorily after harsh winters than did students examined after mild winters.
19. Bellei (2006, N, S).	"Full-School-Day Program" in Chile: increase from 955 to 1216 hours per year in secondary schools. Duration: 2 years.	<i>Test scores.</i> The program had a positive effect on students' achievement, both in language (between 0.05 and 0.07 sd) and math (around 0.06 sd). Stronger effects were attained in rural and municipal schools than in urban and private schools.
20. Sims (2006, N, P)	Increase in school days, particularly the ones devoted to prepare for the tests. Wisconsin, USA. Duration: 5 years (average)	<i>Test scores.</i> Clear and positive relationship between math scores of 4th graders and days of preparation. The implied effect was small in both in an absolute sense and relative to other educational reforms.

A brief summary of the results shown in Table 1 is as follows. The educational policy (treatment) with more intense and widespread effects on income, educational and employment outcomes is high-quality preschool education (Schweinhart et al., 2005). Also worth mentioning are class size at the primary level, with strong effects on test scores' gaps (Piketty and Valdenaire, 2006); conditional cash transfer effects on access to tertiary education (Barrera-Osorio et al., 2008); training program impacts on wages and employment (Attanasio et al., 2008); effects of preschool meals on attendance (Kremer and Vermeersch, 2004); and school construction on graduation rates and school attendance (Duflo, 2001; Berlinsky et al., 2006). Surprisingly, and perhaps due to identification problems, vast school reforms appear as having more modest effects (Meghir and Palme, 2003 and 2004; Hoxby and Rockoff, 2006). Regarding the lengthening of the school year, the only effects analyzed up to now are test scores, and the three studies reviewed (Marcotte, 2005; Bellei, 2006 and Sims, 2006) show smaller impacts on them than other treatments shown in Table 1. Finally, some of the studies, as Banerjee et al (2005) and Hoxby and Rockoff (2005), emphasize the importance of quality over "quantity" of education. This, as well as the critical importance of early childhood education, appears to be clearly proved by Schweinhart et al. as can be seen in its impact on a rich set of dependent variables, from income to intellectual development.

3.4. *Recent revival of instructional time as an educational policy.* The already quoted, recent works of Meghir and Palme (2003 and 2004), Banerjee et al. (2005), Bellei (2006) and

CIPECC (2006)²⁵ reveal a sort of revival of the instructional time as an educational policy, perhaps due to the fact that it is a strategy relatively simple to implement. However, impacts of additional instructional time give the impression of being very modest up to now, validating the point made by Cotton (1989): "Significant increases in the quantity of schooling would be required to bring about even modest increases in achievement".

4. The design of the experiment and the database

4.1. *General approach.* We used the kind of natural experiment methodology normally applied to observational studies. As it is well known, in this methodological framework, the estimation of the effects of the treatment may be biased because of the existence of confounding factors, and the comparison of sample means among groups is not optimal. To avoid this problem, we used the propensity score matching²⁶ to reduce the bias in the estimation of the outcomes, that is, comparing the outcomes using treated and control subjects who are as similar as possible (Becker and Ichino, 2002). Since this method is not sufficient to estimate the Average Effect of Treatment on the Treated (ATT), we used the Kernel matching approach, in which all units of the treatment group are matched with a weighted average of all units of the control group, with weights that are inversely proportional to the distance between the propensity scores of treated and controls.

4.2. *Data base and sample.* The database comes from a randomly sampled survey applied to the 1971 cohort. The selection of this cohort is methodologically very relevant, because it was the first to attend the primary schools of the city of Buenos Aires after the generalization of the DS policy. Although we cannot say that this device eliminates the selection bias problems typical of these studies, it very probably helps at least to reduce them. The survey included items such as educational attainment at all levels, information about subjects' parents, current SES and labor status. The questionnaire included both closed and open questions. To design the sample (Table 2), two variables were taken into account: the UBN (unsatisfied basic needs)²⁷ and the 1980 primary enrollment of the schools' districts.

Table 2. Characteristics of the sample

			Total	Shift		Parents' SES			Students' SES		
				Simple	Double	High	Medium	Low	High	Medium	Low
Gender	Male	Obs.	185	86	99	22	73	90	61	59	65
		%	48.7%	50.0%	47.6%	53.7%	50.0%	46.6%	56.0%	41.8%	50.0%
	Female	Obs.	195	86	109	19	73	103	48	82	65
		%	51.3%	50.0%	52.4%	46.3%	50.0%	53.4%	44.0%	58.2%	50.0%
Total	Observations		380	172	208	41	146	193	109	141	130
	%		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

²⁵ CIPPEC (2006) reviews some of the policy-oriented papers that analyze increased instructional time from different (mainly positive) points of view, including Husti (1992); Pereyra (1992 a and b); Slavin (1996); Martinic (1998 and 2002); Aguerro (1998), and more recently Feldfeber et al. (2003); Boissiere (2004) and Llach et al. (2006). They also refer to some critical studies like Kurweit (1985) and National Education Commission (1994).

²⁶ Defined by Rosenbaum and Rubin (1983) as the conditional probability of receiving a treatment, given the pre-treatment characteristics.

²⁷ Unsatisfied basic needs (UBN) is a compound index of social indicators like housing quality, employment status and educational attainment.

We interviewed people who finished the primary school in 1977 in: (a) double shift (DS) schools, where the policy was implemented in 1971 (treatment group), and (b) simple shift (SS) schools with similar characteristics in pre-treatment variables such as socioeconomic status (SES) and geographic proximity (control group).

5. Results: more education does not imply better education

5.1. *Mean differences.* Mean differences between treatment and control groups are presented in Table 3.²⁸

Table 3. Outcomes' variables

Outcomes	Obs.	Mean	Std. Dev.	Treated group's mean (I)	Control group's mean (II)	(I-II)	
Educational							
Repetition in primary school (1: yes, 0:no)	380	0.06	0.23	0.05	0.07	-0.02	°
Conclusion of high school (1: yes, 0: no)	380	0.90	0.30	0.94	0.86	0.08	***
Repetition in high school (1: yes, 0:no)	375	0.21	0.40	0.22	0.19	0.03	°
Tertiary (post-secondary) studies (1: yes, 0:no)	343	0.83	0.38	0.83	0.83	0.00	°
Conclusion of the first tertiary study (1: yes, 0: no)	285	0.76	0.43	0.77	0.75	0.02	°
Timely conclusion of the first tertiary study (1: yes, 0:no)	216	0.67	0.47	0.65	0.70	-0.05	°
Year in which the first tertiary study was interrupted	64	2.44	1.28	2.50	2.36	0.14	°
Second tertiary study, if the first was finished (1: yes, 0:no)	216	0.26	0.44	0.28	0.24	0.04	°
Conclusion of the second tertiary study if the first one was finished (1: yes, 0: no)	57	0.61	0.49	0.69	0.50	0.19	*
Timely conclusion of the second tertiary, if the first one was finished (1: yes, 0:no)	35	0.66	0.48	0.67	0.64	0.03	°
Year in which the second tertiary study was interrupted, if the first one was finished	22	1.68	0.89	1.27	2.09	0.82	**
Postgraduate studies (1: yes, 0:no)	67	0.96	0.21	0.92	1	-0.08	**
Type of postgraduate studies (1: post degree, 2: master, 3: PhD)	64	1.41	0.61	1.51	1.28	0.03	*
Conclusion of the postgraduate studies (1: yes, 0: no)	64	0.80	0.41	0.74	0.86	0.12	°
Knowledge of a foreign language (1: yes, 0:no)	380	0.87	0.33	0.90	0.84	0.06	**
Labor							
Work during the studies (1: yes, 0:no)	380	0.65	0.48	0.68	0.62	0.06	°
Job related to the career during the studies (1: yes, 0:no)	247	0.61	0.49	0.66	0.55	0.11	**
Number of hours worked during the studies	244	6.80	2.17	6.80	6.80	0.00	°
Quality of the present job (1: stable, 2: occasional)	331	1.02	0.14	1.02	1.02	0.00	°
Unemployed status of the person surveyed (% rate)	380	0.04	0.19	0.05	0.03	0.02	°
Changes of job since the person began working	378	3.63	3.98	3.17	4.18	-1.01	***
Number of times unemployed since the person began working	374	0.66	1.32	0.56	0.77	-0.21	*
Quality of the present job of the household head (1: stable, 2: occasional)	362	1.01	0.12	1.02	1.01	0.01	°
Unemployed status of the household head (% rate)	380	0.02	0.15	0.03	0.02	0.01	°
Income							

²⁸ Descriptive statistics of pre-treatment and treatment variables are shown in Appendix 1.

Net current monthly income (*)	295	3.23	2.05	3.19	3.27	-0.08	°
Others							
Students' SES at the present (1: low, 2: medium, 3: high)	380	1.94	0.79	2	1.88	0.12	*
Presence of children in the current household (1:yes, 0:no)	380	0.78	0.42	0.78	0.77	0.01	°
Number of children in the current household	380	1.55	1.11	1.50	1.60	-0.10	°
Educational level of the spouse (2: lowest, 10: highest)	261	6.80	1.98	7.04	6.50	0.54	**
Educational level of the household head (2: lowest, 10: highest)	380	7.24	2.07	7.33	7.15	0.18	°
* Significant at 10%. ** Significant at 5%. ***Significant at 1%. °Not significant. (*) 1: less than \$323, 2: \$324 -\$484; 3: \$485-\$635, 4:\$636-\$806, 5: \$807-\$968, 6:\$969-\$1290, 7: >\$1290.							

Some of the relevant variables that cannot be considered to have the same mean in both groups are the following: (a) conclusion of high school is higher in the treatment group (TG) and changes of jobs are higher in the control group (CG), both significant at 1%; (b) knowledge of a foreign language, a job related to the career and the educational level of the spouse are higher in TG; postgraduate studies are higher in the CG and their members abandoned the second tertiary study later; all of them significant at 5%; and (c) conclusion of the second tertiary study, the quality of postgraduate studies and the current SES are higher in the TG, and unemployment frequency is higher in the CG, all of them significant at 10%.

Tables 4 to 6 show the main and statistically significant mean differences in outcomes' variables of students originally coming from low, medium and high SES, respectively. In the case of low SES students, conclusion of high school remains higher for TG and significant at 1%; the same happens with knowledge of a foreign language, but now significant at 5%; and primary school grade repetition is lower in CG, but only significant at 10%.

Table 4. Outcomes of students from low SES households

Outcomes	Obs.	Mean	Std. Dev.	Treated group's mean (I)	Control group's mean (II)	(I-II)	
Educational							
Repetition in primary school (1: yes, 0:no)	193	0.08	0.27	0.04	0.11	-0.07	**
Conclusion of high school (1: yes, 0: no)	193	0.83	0.37	0.91	0.76	0.15	***
Repetition in high school (1: yes, 0:no)	189	0.28	0.45	0.33	0.22	0.11	*
Knowledge of a foreign language (1: yes, 0:no)	193	0.83	0.37	0.89	0.78	0.11	**
Labor							
Number of hours worked during the studies	103	7.25	2.11	7.53	6.96	0.57	*
Changes of job since the person began working	192	3.69	3.62	3.18	4.16	0.98	**
Others							
Number of children in the current household	193	1.67	1.10	1.52	1.81	0.29	**
* Significant at 10%. ** Significant at 5%. ***Significant at 1%.							

In the case of medium SES students, both the conclusion of a second tertiary study and the quality of postgraduate studies are higher in the TG, but the members of the CG abandoned the second tertiary study later; all these results are significant at 1%. Contrary to what happened with low SES students, high school graduation rates are higher in the CG, and the same happens with the frequency of unemployment, being all these results significant at 5%. The originally middle SES group is the only one in which a significant (at 10%) mean difference appears with their current SES, that is higher in the CG.

Finally, in the case of the high SES group, repetition in high school is higher in TG and the quality of postgraduate studies is higher in CG, both of them significant at 10%.

Table 5. Outcomes of students from medium SES households

Outcomes	Obs.	Mean	Std. Dev.	Treated group's mean (I)	Control group's mean (II)	(I-II)	
Educational							
Conclusion of high school (1: yes, 0: no)	146	0.97	0.18	0.94	1.00	-0.06	**
Conclusion of the second tertiary study if the first one was finished (1: yes, 0: no)	26	0.50	0.51	0.69	0.20	0.49	***
Timely conclusion of the second tertiary study if the first one was finished (1: yes, 0: no)	13	0.62	0.51	0.72	0.00	0.72	**
Year in which the second tertiary study was interrupted if the first one was finished	13	1.92	0.95	1.00	2.50	-1.50	***
Type of postgraduate studies (1: post degree, 2: master, 3: PhD)	35	1.40	0.65	1.63	1.13	0.51	***
Labor							
Changes of job since the person began working	145	3.76	4.74	3.16	4.63	-1.47	**
Number of times unemployed since the person began working	146	0.58	1.55	0.41	0.84	0.43	**
Others							
Students' SES at the present (1: low, 2: medium, 3: high)	146	2.26	0.69	2.20	2.36	-0.16	*
* Significant at 10%. ** Significant at 5%. ***Significant at 1%.							

Table 6. Outcomes of students from high SES households

Outcomes	Obs.	Mean	Std. Dev.	Treated group's mean (I)	Control group's mean (II)	(I-II)	
Educational							
Repetition in high school (1: yes, 0: no)	41	0.10	0.30	0.14	0.00	0.14	*
Type of postgraduate studies (1: post degree, 2: master, 3: PhD)	13	1.62	0.65	1.44	2	-0.56	*
Labor							
Job related to the career during the studies (1: yes, 0: no)	34	0.88	0.33	1	0.64	0.36	***
* Significant at 10%. ** Significant at 5%. ***Significant at 1%.							

5.2. *Educational, occupational and income effects.* With the exception of students' nationality and gender, pre-treatment variables cannot be considered to have the same mean (Appendix 1). It follows that mean differences between TG and CG in the outcome variables cannot be considered as the result of the treatment per se. In order to control for these pre-existing differences, we adopt the Kernel's propensity score matching. In the following tables we present the estimation of the average effect of the policy on the treatment group (Attk), as reflected in the mean differences attributable to the treatment after controlling them for the differences in pre-treatment variables. On the other hand, to estimate the impact of the double shift, we eliminate the outliers in the control group. In other words, we do not include in the sample individuals whose propensity score is lower than the minimum probability observed in the treatment group.

DS is found to have positive and significant effects in the following educational outcomes. (a) The conclusion of high school: secondary school graduation rate is 21% in the

TG, and this is one of the most relevant results of our research. (b) The access to, and the conclusion in time of, a second tertiary study. (c) The probability to have a job related to the career during the studies. (d) The educational level of the spouse and of the household head. On the other hand, the educational variable where the treatment appears as having negative and significant effects are the timely conclusion of the first tertiary study and the conclusion of postgraduate studies. Another positive and significant effect of the DS is to change jobs less frequently (Table 7).

Table 7. Average effects of the double shift and standard errors

Outcomes	ATTK	Boot se
<i>Educational</i>		
Repetition in primary school	-0.10	0.09
Conclusion of high school	0.21*	0.09
Repetition in high school	0.03	0.07
Tertiary (post-secondary) studies	-0.04	0.06
Conclusion of the first tertiary study	0.06	0.14
Timely conclusion of the first tertiary study	-0.16*	0.06
Year in which the first tertiary study was interrupted	-0.16	0.30
Second tertiary study if the person finished the first one	0.15*	0.10
Conclusion of the second tertiary study if the first one was finished	0.06	0.23
Timely conclusion of the second tertiary study if the first one was finished	0.51*	0.24
Year in which the second tertiary study was interrupted if the first one was finished the first one	-1.18*	0.56
Postgraduate studies	-0.07	0.14
Type of postgraduate studies	0.29	0.20
Conclusion of the postgraduate studies	-0.21*	0.11
Knowledge of a foreign language	0.09	0.09
<i>Labor</i>		
Work during the studies	0.13	0.10
Work related to the career during the studies	0.21*	0.09
Number of hours worked during the studies	-0.06	0.50
Quality of work of the person surveyed at the present	-0.03	0.06
Unemployed status of the person being surveyed at the present	0.01	0.04
Changes of job since the person began working	-1.43*	0.59
Unemployed status since the person began working	-0.29	0.23
Quality of work of the household head at the present	-0.03	0.06
Unemployed status of the household head at the present	-0.01	0.04
<i>Income</i>		
Net monthly income of the person being surveyed at the present	0.02	0.63
<i>Others</i>		
Students' SES at the present	0.20	0.18
Presence of children in the current household	0.02	0.08
Number of children in the current household	0.03	0.17
Educational level of the spouse	0.93*	0.33
Educational level of the household head	0.73*	0.42
*Significant at 5%		

Notes: a) Attk: Average effect of treatment with Kernel matching. b) Boot se: Bootstrapping of standard errors.

We also calculated the effects of the treatment for each one of the three levels of students' household's SES. In Tables 8 to 10 we only show statistically significant effects. In the group of low SES students, TG's high school graduation rate is 22% higher – again, a very relevant result; a second tertiary study once finished the first one is 25% more probable and, on the other side of the coin, repetition in high school is 13% higher. In the group of medium SES, a big variety of results appears. On the one hand, DS shows a positive and significant effect in the timely conclusion of the second tertiary study -once the first is finished- as well as in the quality of the postgraduate studies and in the probability of having a job related to the career while studying. On the other hand, DS has a small, but negative and significant impact on the conclusion of high school and the access to tertiary studies. Another negative, but stronger effect is on the access to postgraduate studies. The middle SES one is the only group in which DS has a positive impact on income but, surprisingly, a negative impact on the current students' SES.²⁹ In the case of the high SES group, DS appears associated to higher repetition in high school, lower graduation rates in postgraduate studies and lower income.

Table 8. Students from low SES households
Average effects of the double shift and standard errors

Outcomes	ATTK	Boot se
<i>Educational</i>		
Conclusion of high school	0.22*	0.09
Repetition in high school	0.13*	0.07
Second tertiary study if the person finished the first one	0.25*	0.16
<i>Labor</i>		
Changes of job since the person began working	-1.55*	0.07
<i>*Significant at 5%</i>		

Notes: see Table 7.

Table 9. Students from medium SES households
Average effects of the double shift and standard errors

	ATTK	Boot se
<i>Educational Outcomes' variables</i>		
Conclusion of high school	-0.06*	0.03
Tertiary studies	-0.05*	0.03
Timely conclusion of the second tertiary study if the first one was finished	0.73*	0.15
Year in which the second tertiary study was interrupted if the first one was finished	-1.77*	0.41
Postgraduate studies	-0.44*	0.10
Type of postgraduate studies	0.66*	0.19
Conclusion of the postgraduate studies	-0.21*	0.11
<i>Labor Outcomes' variables</i>		
Work during the studies	-0.17*	0.06

²⁹ This is not incompatible, because SES is measured only by educational and employment quality variables without including income.

Job related to the career during the studies	0.34*	0.18
Income Outcomes' variables		
Net monthly income of the person being surveyed at the present	1.04*	0.59
Other Outcomes' variables		
Students' SES at the present	-0.50*	0.12
*Significant at 5%		

Notes: see Table 7.

**Table 10. Students from high SES households
Average effects of the double shift and standard errors**

	ATTK	Boot se
Educational Outcomes' variables		
Repetition in high school	0.14*	0.08
Conclusion of the postgraduate studies	-0.33*	0.16
Labor Outcomes' variables		
Work during the studies	-0.13*	0.08
Changes of job since the person began working	0.39*	0.22
Income Outcomes' variables		
Net monthly income of the person being surveyed at the present	-1.57*	0.85
Other Outcomes' variables		
Number of children in the current household	1.22*	0.71
*Significant at 5%		

Notes: see Table 7.

6. Discussion and policy implications

We have shown that the introduction of longer school days in half of the primary schools of the city of Buenos Aires in 1971 has significantly improved only one, but very relevant, educational outcome. Students that attended DS primary schools had a secondary school graduation rate 21% higher than those that attended single shift primary schools. Moreover, this result is mainly explained by what happened with the low SES students. Regarding the tertiary and postgraduate educational levels, we have found both positive and negative impacts of DS. These last results, taken together with the absence of enduring effects of DS on income and employment and with the fact that DS students do not have a better knowledge of a second language of study in spite of having had it as a subject in the school, suggest that the contents' and learning's quality in DS schools was not satisfactory. This is something very relevant to keep in mind at the time of considering the extension of DS to other schools of to the whole educational system. Our paper helps to emphasize that even more important than having longer school days are the contents of the additional hours. Just to give an example, academic results' improvement could be very different if those hours are just an extension of the current curriculum or, instead, if they allow the disadvantaged students to develop their skills and abilities through the teaching and learning of a second language, sports, arts and technologies, i.e., the same subjects that their advantaged mates can normally learn and practice.

The general meaning of our results coincides with most of the literature reviewed in this paper, even the one performed with the more demanding methodology of natural experiments. Impacts of a wide variety of educational policies can be big and relevant regarding the "quantity" of education, but very seldom as regards the quality of education or other lifelong effects. The main exceptions we found are a high-quality preschool

(Schweinhart et al.) and, potentially, class size in primary schools of low SES children (Piketty and Valdenaire). In the first case, the effects are not only important, but also widespread to personality, labor, income and citizenship outcomes. In the second case, the impact is very strong on test scores. Taken all these results (including this paper's) together, it sounds true the claim made by Piketty and Valdenaire (2006), who argue that a targeted allocation of resources to poorer - or the poorest - schools and students could have a significant impact in reducing educational inequalities, and that this effectiveness will be much greater if it concentrates from early childhood onwards. However, it also seems clear that we still need more and better research to understand what specific policies are needed to improve the quality of education for the poor.

Appendix 1
Descriptive statistic on pre treatment and treatment variables³⁰

	Obs.	Mean	Std. Dev.	Treatment group's mean (I)	Control group's mean (II)	(I-II)	
Pre-Treatment Variables							
Nationality (1: argentine, 0: foreigner)	380	1.00	0.07	1.00	1.00	0.00	°
Age	372	41.52	0.70	41.44	41.62	0.17	***
Gender (1: men, 0: women)	380	0.49	0.50	0.48	0.50	0.02	°
School SES (1: low, 2: medium, 3: high)	380	2.00	0.75	2.09	1.90	0.19	***
Parent's SES (1: low, 2: medium, 3: high)	380	1.60	0.68	1.69	1.49	0.19	***
Type of School (1: men and women, 2: women, 3:men)	380	1.40	0.71	1.62	1.13	0.49	***
Number of students	375	25.56	5.73	27.83	22.79	5.05	***
Number of sections	380	1.67	1.16	1.90	1.40	0.13	***
Father's educational level (1: lowest, 10: highest)	380	4.47	2.10	4.68	4.20	0.51	**
Mother's educational level (1: lowest, 10: highest)	370	5.08	2.37	5.17	4.67	0.48	**
Treatment Variables							
Foreign language as a subject (1: yes, 0:no)	380	0.52	0.50	0.93	0.02	0.90	***
Cultural activities (1: yes, 0: no)	380	0.67	0.47	0.67	0.67	0.00	°
Place where the cultural activities take place (0: nowhere, 1: at school, 2: at home, 3: at home and at school)	380	1.31	0.97	1.32	1.31	0.01	°
Presence of lunch service (1: yes, 0: no)	378	0.59	0.49	1.00	0.08	0.92	***
Assistance to the lunch service (1: yes, 0:no)	221	0.66	0.48	0.70	0.07	0.62	***
<i>*significant at 10%. ** significant at 5%. *** significant at 1%. °not significant</i>							

³⁰ Some other characteristics of both groups are: (a) more than half of the students changed their primary school; (b) most of those who attended a double shift primary school changed to a simple shift high school; (c) 76% of the students who started tertiary studies concluded them, and 70% of them did so in time; (d) many surveyed people worked during their studies and that work was related to what they were studying.

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