An Analysis on the Feasibility of Supporting and Funding Rural Education through Private Education in Argentina

by

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ABSTRACT

The quality of education in Argentina has been declining over the past decades, affecting specially rural and marginalized sectors of the population.

Given the current circumstances, in which the government has increased the amount of the GDP invested in education, and there is still no concrete evidence that the quality of the education is improving, the objective of this thesis is to find alternatives to solve this problem through a private and self-sustainable initiative in which private education can cross-collaborate and fund rural or marginalized schools in Argentina.

My research will focus on determining whether it is feasible to establish a sustainable model of collaboration, and determining which is the most impactful way to establish it.

The aim of this thesis is to examine the effectiveness of a sustainable self-funding model, which partners elite and rural/marginalized schools.

This cooperation model should help students from impoverished backgrounds to achieve higher education performance, enabling them to succeed in having access to a better quality of life, and hopefully will result in a more fair and inclusive society.

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Chapter 1

"If your goal is to progress one year, sow wheat.
If your goal is to progress ten years, sow trees.
If your goal is to progress one hundred years,
educate your children".

Confucius

Why focus on education

In order to be prepared to face and compete in an increasingly interdependent world, countries must count on human capital that can match or exceed the demands of the labor market.

During the last years, Argentina has had a declining performance in standardized tests as PISA (Program for International Assessment). PISA is an international study launched by the OECD (Organization for Economic Co-operation and Development) in 1997. This test measures the academic achievements of 15-year-old students around the world and evaluates the knowledge of students in areas as reading, mathematics and science. (See Annex 1. Relative evolution of Argentina in terms of quality of education). (Auguste, Echart & Franchetti, 2008).

Analysis will be based on the progress Argentina had in this test, as it is a reliable source of information validated internationally, but will not be the only aspect of the decline in education that will be discussed. Other indicators, such as youngsters dropping out of school, repetition level, etc. will also be considered.

Argentina´s many social problems (corruption, poverty, ineffective governments,

lack of innovation and trust to attract foreign investments) have a common root: lack of quality education independent of region or socio-economic background.

By looking at examples of countries that have excelled at improving living standards, economic growth and developing a knowledge economy, such as Finland, South Korea or Singapore, we will find as a common factor that they all focused intensively on education.

Economic growth can be the result of policies that are not directly related to education, however, in order to *sustain* growth, countries should guarantee they can supply qualified human capital to focus on and produce technological advancement through the creation of breakthrough innovations. For this, a country can either import expertise, or develop domestic talent through education initiatives.

The graph below (Figure 1) describes the desirable link of events all economies should follow in order to be better positioned to provide improved living conditions to their people.

Figure 1. Desirable evolution of education´s impact.

Chapter 2

"In education, it is not about how much you cover,
it is about how much you uncover".

Professor Robert Freund

How is the Argentinian education system doing today?

Today the quality of Argentinian education system is low. The public education system is not recognized to be of high standards. The paragraphs below provide facts to elaborate on the poor quality and some factors that contribute to the poor quality.

Poor performance of Argentinian students in OECD PISA study

PISA scores will be used as the main reference to affirm that the performance of Argentinian students has declined. Argentina participated in other international standardized tests such as TIMSS (Trends in International Mathematics and Science Study) and PIRLS (Progress in International Reading Literacy Study), however its participation was not sustained over time.

TIMSS measures trends in mathematics and science at 4th and 8th grades, and is conducted every four years.

PIRLS measures trends in reading comprehension at 4^{th} grade, and is conducted every five years.

Argentina participated in TIMSS on 1995 and 2003. In the 2003 examination Argentina only participated in the 8^{th} grade edition, but not the 4^{th} grade edition. In 1999, 2007 and 2011 Argentina did not participate. There is a more advanced version of TIMSS, which measures trends in advanced mathematics and physics for students in their final year of secondary school in which Argentina participated in the 1995 edition,

but not in 2008.

In PIRLS Argentina participated in 2001 edition, but not in 2006 or 2011 editions. For PIRLS there is also another version called Pre-PIRLS (an easier version of PIRLS) that was only conducted once in 2011. Argentina did not to participate.

Due to the instability of the participation in these examinations, we will base our analysis on PISA exclusively, as otherwise it is not possible to compare the student's performance evolution over time.

In the case of PISA, Argentina participated in 2000, 2006, 2009 and 2012. The scores for 2012 will be made public in December 2013.

As an example, in the 2009 assessment, Argentina ranked 58th in reading-comprehension, 55th in mathematics and 56th in science, out of 65th countries that took the test. (Polack, 2013)

It is relevant to mention that Argentina´s Ministry of Education also started conducting internal examinations through the National Education Operative ONE (Operativo Nacional de Educación), which assesses language, mathematics, natural and social sciences, on a sample of students from third, sixth, ninth, and twelfth grades. In the year 2000 the test was administered to all students in these grades as the National Census took place that same year.

The 2010 edition of the test was additionally administered to all students in the last year of secondary school.

According to the results of the ONE test, the highest concentration of students is in "the middle", which means their achievement is considered "satisfactory". The percentage of students that are in the "middle" category and the "high" category together, account for 65.5 % in natural sciences, 70 % in natural sciences and

mathematics and 73.7 % in language. (Censo de finalización de la escuela secundaria. Informe de resultados. ONE Operativo Nacional de Evaluación 2010.)

While the results of the internal examinations seem positive, the contrasting poor PISA results suggest that Argentinian authorities are using lower standards than the ones used by the OECD assessments. What is important to highlight, is that PISA compares students from all over the world. If Argentinian authorities only consider their internal examinations, they will make the mistake of not benchmarking themselves with countries that might be potential competitors, and are doing better than them.

What results alarming is that comparing the results from PISA 2009 and ONE 2010, the findings from both exams are almost contrary. Analyzing them individually, might lead to very different conclusions.

For our analysis, PISA results offer powerful evidence that demonstrates that Argentina compared to other countries is in a weak position.

There is some controversy on measuring a country's quality education by only looking at the performance in international standardized tests. For the sake of simplicity, we consider that PISA is a reliable source of information. They show Argentina´s scores in comparison with countries from all over the world, not only countries with similar income level or from the same geographic region. Concurrently, we consider that comparing Argentina with other countries is a valid framework in which we can position the country compared to other nations.

Dropouts

The amount of students that drop out school increases, as students grow older. This is imperceptible during the first years of school, but it turns a big problem as students move into the last years of secondary school. As it is predictable, most of the students that drop out school come from poor backgrounds and attend public schools.

According to the Report elaborated by Cimientos Foundation (Cimientos, 2011), based on the information elaborated by DINIECE- National Direction of Information and Evaluation of the Education Quality- (Dirección Nacional de Información y Evaluación de la Calidad Educativa) dependent on the Ministry of Education, up to 2009; the percentage of abandonment in the first three year of secondary school (known as basic cycle, or "ciclo básico"), was five times higher for students on the public sector, 10.51 %, compared to students coming from the private sector, where the percentage is 2.23 %.

The provinces in which the dropout rates are higher are Misiones (17.29 %), Corrientes (14.79 %), Santiago del Estero (15.52 %) and Rio Negro (14.15 %).

We mention the provinces individually, because the general average 10.51 % can lead to wrong assumptions. The high percentage of dropouts in provinces like Misiones, are a good example to show the depth of the problem.

The oriented cycle, or "ciclo orientado", refers to the last three years of secondary school, where the problem of dropouts is much worse, with some alarming figures, reaching an overall 19.79 %.

Most students drop out in the last year of school. This can be explained by the fact that they do not sit for the final exams they have pending when they finish classes. In Argentina students can finish the last year of secondary school without getting a pass on the classes they took that last year. This last year of secondary school is the only one students cannot repeat. But, they will not finish their secondary school until they pass all the exams that they left pending.

In certain jurisdictions as Buenos Aires the abandonment rate is 25,22 %, in Misiones it is 23.82 %, Mendoza 20.85 % and Santa Fe 19.91 %. Even in the provinces that have the lower level of abandonment, the numbers are alarmingly high: La Rioja

with 10.04 %, Neuquén 11.52 %, Ciudad de Buenos Aires 12.80 %, Chaco 13.92 %, and Formosa 13.72 %.

These numbers give us a hint on the amount of students that will continue their studies and continue to pursue a University degree.

Another problem is the overage of students. In the same report (Cimientos, 2011), the information corresponding to years 2004 and 2005 mentions that the overage rate is of 22.8 % for students in EGB 1 and 2, 32.2 % in EGB 3 and 35.5 % in polimodal years.

There is a study conducted by the Inter-American Development Bank (Herran, 2001) that talks about the reasons for which youngsters drop out school in Argentina.

Once more, the problem is concentrated on students coming from low-income families. The study points this problem as "the bottleneck towards equalizing education opportunities and outcomes, given that completing secondary education is the *minimum threshold set by the labor market in a context of increased competitiveness and globalization".*

The fact that students do not finish their studies has a dramatic effect on their future employment perspectives and lifelong earnings.

In its conclusion, the study recommends to have an integral approach in education policies that combines supply and demand measures, making school more interesting and more effective.

It also mentions that students that drop out school do it because they have a long record of deficient skill building and repetition that starts early in their academic years and even at a pre-primary age. Therefore, the study suggest that targeted education programs aimed at students with lower learning achievements should start early in their lives, when they are attending primary education, that is when difficulties start. Another

recommendation is to start with pre-primary education, as it is a "*powerful tool for preparing them to do well in primary and later on in secondary education*", as it makes an analogy between learning and treating a disease. The more preventive work that is done, starting in primary or pre-primary education, the easier it will be for the system not to deal with "terminal patients", or students that give up on school when there is no corrective measure that can be taken. Not a scholarship or any other incentive can keep them into the system, as they carry with them a long story of academic failures.

Repetition level

This is a key indicator in a student´s academic life, as it will determine their future performance.

To make a student repeat the school year does not solve the learning problems, it stigmatizes students and has a very high economic cost. There is evidence that repeating the school year leads to future failure and early school abandonment.

In primary school the most critical period is the first grade, where the repetition rate was almost 9 % in 2009, and it diminishes to 4.2 % in the 6th year. (Cimientos, 2011). (See Annex 3, Repetition rate 2009).

The problem gets worse in secondary school, especially in the first years. The highest repetition rates are in the 8th year. The repetition rates in the secondary level are alarmingly high. The gap between the rate of repetition in public and private institutions is very high, being 14.54 % and 5.19 % respectively.

Another problem with repetition is that it is extremely inefficient in terms of cost. The whole system suffers this impact, as students have to study again the subjects in which they succeeded, meaning that the education system pays for these lessons twice.

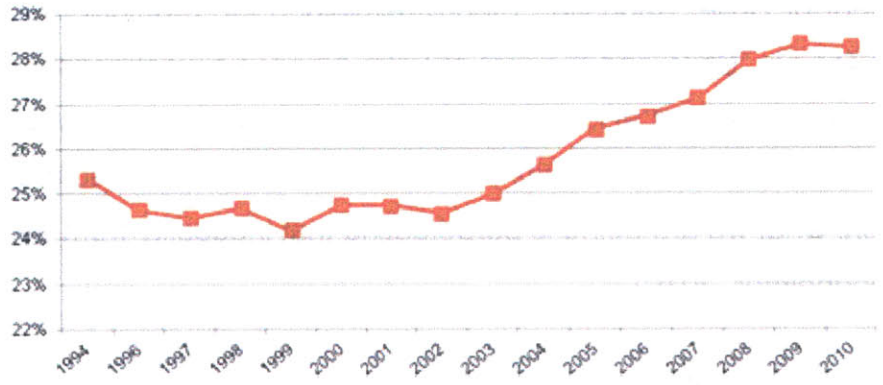
This system is not only inefficient economically, but it also results in a demoralizing situation for the students and teachers. Casting a shadow in students life that can have negative effects until adulthood.

Shift from public to private education

In Argentina good quality education is provided, but mainly in elite private institutions for sectors of the population that can afford it. Although there are some prestigious public schools that deliver high quality education, they are a vast minority.

Private education enrollment has been steadily increasing since 1994.

In the period between 1994 and 1997, there was 7.3 % increase in private enrollment. Between 1999 and 2001 there was a 7 % increase, between 2001 and 2003 it was 0.9 % increase and between 2003 and 2010, a 20.7 % increase. (Narodowski & Moschetti, 2012).



Graph 1. Evolution of the percentage of private enrolment from 1994 to 2010

Factors that contribute to the problem

Inequality in Argentina

Apart from the overall poor performance of the education system in Argentina, there is also a growing gap in the quality between public (especially rural/marginalized schools) and private ones.

We cannot affirm that the private elite schools are improving their performance, but we can affirm that the quality of public school is declining. There are many factors that contribute to this rapid detriment such as poor compensation of teachers, which derives in permanent tensions between the unions and the authorities, poor working conditions for teachers, high dropout and repetition rates.

In Argentina, education has become a tool to deepen the pattern of increasing inequality, instead of being a tool to equalize opportunities.

The president of Chile, Sebastián Piñera, explained the problem that Chile and Latin America are facing: "Chile and the rest of Latin America's weaknesses is not only the poor quality of education, but also the inequality of that poor quality. When the more privileged sectors have quality of education, and the more vulnerable sectors have poor quality of education, what we are doing is perpetuating that inequality from generation to generation". (Oppenheimer, 2010)

A study conducted by the Inter-American Development Bank (Auguste, Echart & Franchetti, 2008) analyzes the quality of education and the factors that affect it based on the scores of standardized tests.

The study concludes that Argentina is very badly positioned in relation to countries with similar income level when it comes to results of international standardized tests. It is performing way below the expected level given its income level.

The quality of education is very unequally distributed according to the students' socio economic status, and this is tied to the high inequality in income distribution.

Although Argentina´s expenditures in education are similar to other countries with similar income level (in terms of percentage of GDP), the problem is that the country has a young population. Therefore expenditures per students become less contrasted to comparable countries. Concurrently, the slope of the efficiency in which resources are deployed is lower than comparable countries.

Other factors that influence the poor quality of education is the fact that Argentinian parents buy less children books and read less to their children compared to similar income level countries.

When it comes to the way teachers teach there is not a conscious effort to increase the performance of weaker students. There is no differentiated teaching for students with different learning styles or different learning pace.

There is a belief among Argentinians that because there is free education for all (from kindergarten to University level) it means it is accessible to all. This study shows that this availability does not equalize opportunities. The facts that the quality of education at early stages is so poor, makes students be self-restricted even when there is free education available. Low-income students do not have equal opportunities. The place and family in which they were born, will constraint them in their adults life. And this generates a negative reinforcing loop.

Factors affecting poor performance

In the ONE 2010 results, there is a description of the factors that affect academics results. The correlation between academic performance and their socio-economic background is very strong. (Censo de finalización de la escuela secundaria. Informe de resultados. ONE Operativo Nacional de Evaluación 2010.)

The socio-economic level of the family influences the students performance, showing that only 4.4 % of the students that are in the poorest quintile will achieve a high score in mathematics, while the 26 % of students that are in the wealthiest quintile will achieve high scores. In language the proportion is of 8.7 % and 31.7 % respectively.

For mother's education level the relationship is the same. Students whose mother did not finish primary school, achieve high scores in mathematics and language test is a 4.3% of the cases, while the percentage for students whose mother completed a university degree is of 45.8 %. The same trend follows for the language examinations.

The family´s cultural capital, the fact that there are books in the home of the student, is one of the most used indicators to show the cultural capital of the family and allows making inferences between the relationships that exists between this "capital" and the student´s academic performance. The students that achieve high scores in the mathematics test, that has less than 10 books in their home are a 4.4 %, while students that have more than 100 books in their home and have high scores are 29 %.

There is an inverse correlation between the amount of books at home and the academic performance of students.

The poor quality of the infrastructure where students receive instruction also has a negative impact on performance.

The age of students during the last year of their secondary school shows evidence of the student´s history. The older the student is, it shows that there might have been a late incorporation to academic life, that they repeated the same year, that they left school temporarily, or a combination of the previous options. The older a student is, the bigger the chances that they will have poor academic results are.

Students who repeat the year, experience a decrease in their academic performance. If this happens more than once, the more years they repeat, the worse

their performance gets as time goes by. Another factor that impact on students future performance is their academic results for the previous year.

This leads to think that if a young child is stimulated properly from the early years of life, it might have a big impact on the child´s future. The same will happen in an opposite way, if the child is not stimulated.

Given all this evidence, we can conclude that in Argentina, inequality is given by birth, due to lineage and socio-economic conditions. In the current situation, talent and effort combined are not enough to match the starting point of the most privileged.

Problem´s perception

There is a common perception among Argentinian citizens that their education system is one of the bests in Latin America.

On the other hand, there is concrete data that proves that Argentinian students are falling behind compared to peers from other countries.

An article published by the Inter-American Development Bank shows that 55 percent of Argentinian citizens are satisfied with the quality of education. (See Annex 2. Satisfaction with Education and Test Scores)

This article also mentions that parents that are less educated value aspects such as discipline and if the school is clean over the quality of education.

The most pressing problem behind this misperception is that education is not on the political agenda and citizens are not pushing governments to take action in this area.

Although there has been progress in the amount of students enrolled, and the availability of options to access the education system; there are still problems related to

high repetition rates that lead to youngsters dropping out school, or finishing school in more years than they should. Although many indicators show that there is more investment in education, the performance of Argentinian students in international standardized test, is decreasing.

The quality of education is the problem. According to the study: "the average score of 15-year-old students in seven Latin American countries that took the PISA test, run by the Organization of Economic Cooperation and Development, is about one grade level below the average score of the 25 percent worst performing OECD students tested. In addition, between 20 percent and 40 percent of the students in the seven Latin American countries scored less than the lowest skill level in the test, which means they lack basic literacy skills. The Latin American countries that took part in the testing program were Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay".

This misperception of the Argentinian people; the inability of the government to determine and execute the proper policies, and the fact that the topic of education is not highly ranked in the political agenda; impedes them to develop the sense of urgency needed to trigger actions to lift them from the problem they are in.

Inability to attract quality teachers

The teaching profession is not well regarded in Argentina and it teachers are poorly paid.

The long-lasting tensions between teachers´ union and local authorities, result in a high absentee rate in public schools. As a consequence, there is an increasing tendency to opt for private education, even in the segments of the population with lower income levels. Even mid low-income sectors perceive public education as decadent. (San Martin, 2012). All these elements put together create a negative reinforcing loop. In chapter 4, there is greater detail on the teaching profession in Argentina.

Chapter 3

"You need to find a coordinating device"

Professor Roberto Rigobon

Government efforts

Although education is not a priority in the political agenda, it is undeniable that there have been some efforts made by the government to improve the education system. The percentage of GDP invested in education has increased, but as Argentina has a relatively young population, the investment per students is relatively low in relation to other countries with similar income level.

The fact that Argentina is investing more does not mean that investments are making an impact, as indicated earlier.

Analyzing this in the light of what happens in other countries, unless Argentina focuses on the problem of education, the future does not look promising.

Below is the summary of the initiatives driven by the government to address the problem of education.

1. Law 22,047, enacted in 1979.
2. Federal Law of Education, number 24,195 "Ley Federal de Educación", enacted in 1993.
3. Law 26,075, enacted in 2006. (Modifies law 25,919 "Fondo nacional de incentivo docente")
4. National law of Education. Law 26,206, enacted in 2006. "Ley Nacional de Educación"

Law 22,047. Year 1979

This law illustrates the way in which the education system is currently structured. The Federal Council of Education was created, under the aegis of this law. The Ministers of Education of each province and the National Minister of Education constitute this body. Together they decide the Education policy that will be implemented in the country.

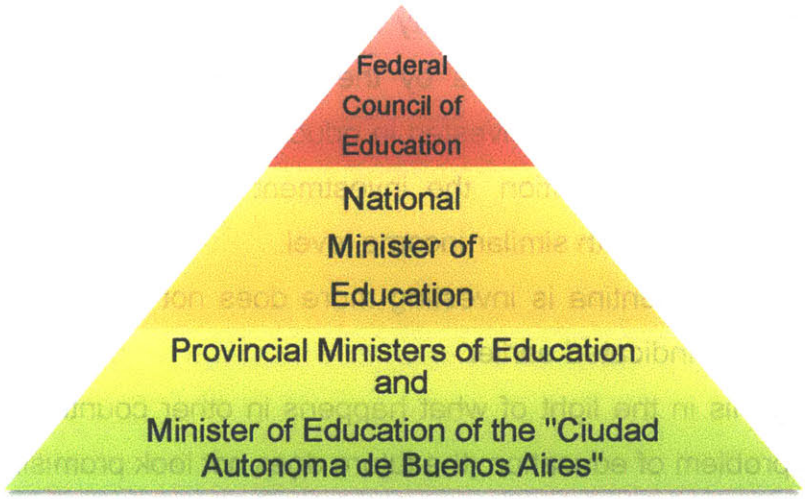


Figure 2. Current hierarchy of the organs that define the Education policies in Argentina

This law also included the creation of the Federal Network of Continual teachers' training.

Federal Law of Education 24,195. Year 1993

The law 24,195 intended to change the entire system, by defining responsibilities by jurisdictions.

In Argentina the responsibilities are at two levels: the federal (national) and provincial level. The taxes are collected at a federal level and distributed to the

provinces thereafter. Argentina has 24 jurisdictions (provinces), each one of them in charge of designing, financing and executing the education policy.

The 10th article of the law establishes that the structure of the system will be implemented gradually, progressively and will be integrated by:

- Initial education: constituted by pre-school for kids from 3 to 5 years old. The last year of this cycle is compulsory.
- General Basic Education ("Educación General Básica" EGB, in Spanish): compulsory for children between ages of 6-14 years.
- Polimodal Education: applicable for a period of three years after finishing the EGB cycle.
- Superior education: This education level includes University and non-University (tertiary) degrees, and is applicable after completing the polimodal cycle.
- Quaternary education.

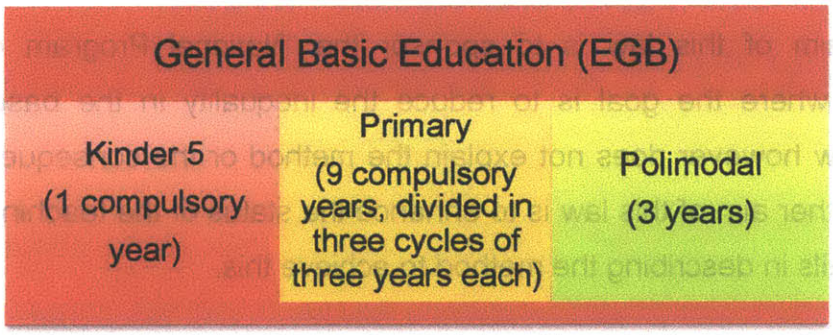


Figure 3. Educations system structure

The 19th article of the law describes the objectives of the teaching profession. The 49th article outlines the need to assess the quality of the education system, the curriculum of all the different cycles, the quality of learning of the students and the quality of teacher´s training. The law however does not mention the metrics to be used, their frequency, and their consequences in the event of unsatisfactory results.

Law 26,075. Year 2006

This law required allocation of resources to target a minimum of 6 percent of GDP by the year 2010. The yearly increase was projected according to the following schedule:

Year	Percentage of GDP dedicated to education
2006	4.7
2007	5
2008	5.3
2009	5.6
2010	6

This law guarantees a minimum of 10 years of compulsory education, from kindergarten (since age 5), to the 9th grade (age 14). Before this law was promulgated the compulsory years of education were just the seven years, from ages 6 to 13.

Another aim of this law is to sponsor the "National Program of Teachers' Compensation", where the goal is to reduce the inequality in the base salaries of teachers. The law however does not explain the method or the consequences of non-compliance. Another aim of this law is to enhance the status of the teaching profession, but yet again it fails in describing the method to achieve this.

The 2nd article (sections C and D) expresses the intention of including children from low-income communities into the system by "compensation systems that allow equal opportunities in the national education system" and "advance in the universalization of the polimodal level". There is no clarity on the mechanisms to achieve the objectives of these sections.

National Law of Education 26,206. Year 2006.

The first articles of this law, enunciate a statement of purpose.

2nd article: "Education and knowledge are public goods; and personal and *social rights guaranteed by the State.*"

3rd article: "*Education is a national priority* and a state policy to build a just society, reaffirming the sovereignty and national identity, deepening democratic citizenship, respect for human rights and fundamental freedoms and *strengthen the socioeconomic development of the Nation.*"

4th article: "The Federal Government, the provinces and the Autonomous City of Buenos Aires *have the primary and non-delegable responsibility to provide comprehensive education, permanently and of quality for all the inhabitants of the nation, guaranteeing equality, free and equity in the exercise of this right*, with the participation of social organizations and families."

The 5th title "Policies for the promotion of education equality" (articles 79 to 83), 6th title "Quality of education" (articles 84 to 86), and Chapter 3 "Information and evaluation of the education system" enunciate the intention of the Federal Council of Education to work on these three aspects, however there is no clear message on the frameworks, budget, execution and concrete measures of the outcomes to these policies.

This law provides more relevance to the Federal Council of Education.

In order to create a system that is holistic, the law considers children from day 45 post-birth as a new pedagogical unity. It also defines compulsory years of education from ages 5 until children finish secondary school, meaning 13 years of compulsory education, coinciding with the conclusion of the polimodal cycle.

On evaluating the laws, it can be concluded that they are well intentioned but seem ineffective, as they do not provide clarity on the ways to achieve the objective.

Until such time that all Argentinian stakeholders become more self-critical, concrete and ambitious in their expectations, push authorities to be more accountable for their performance, they will not find the "coordinating device" to create and sustain an education system that will equip them with skills to be competitive in the 21st century.

Chapter 4

"He who opens a school door closes a prison"

Victor Hugo

Benchmarks

Focusing in Argentina, based on the PISA scores, we will compare some policies of other countries that are also participating on PISA tests.

We wanted to compare Argentina with countries that are top performers in PISA tests, such as Finland and Singapore, in order to see what the most efficient education systems are doing, and analyze if this initiatives can be replicated.

In first place the comparison is to identify some key aspects that this countries are managing successfully, together with positioning Argentina in the world and identify areas for improvement.

Expenditures in education as a percentage of GDP

As we mentioned before, Argentina´s government made the decision to increase their expenditures in education through increasing the percentage of their GDP invested in education. (See Annex 4. Percentage of GDP spent in education in Argentina and Singapore).

Singapore is decreasing the percentage they spend in education and simultaneously they remain one of the best performers in PISA tests.

Finnish students have one of the highest scores in PISA tests and there cumulative cost spent in USD is among the lowest in the World. This means that even if the government decides to spend more in education; unfortunately that does not always translate into a positive outcome in terms of high-test scores or better learning. (Sahlberg, 2011)

Another interesting fact, in the Finnish case, is that the amount spent per student is the same all around the country, compared to countries like US or Argentina where it varies across different jurisdictions. (Gamerman, 2008)

In the case of Singapore, and many other Asian countries as South Korea, there is also a huge industry of private afterschool programs in which parents spend high sums to complement the education their children receive at day school. This is also a common practice in many other Asian countries. So we should also consider this amount of money besides the percentage of GDP spent in education.

Schooling days and length of school days

Since the year 2003, under the law 25,864 the compulsory schooling days in Argentina are 180 for all the education institutions within the country.

In the text of the law there is no penalty for parent who don´t comply with this norm.

In Singapore the school term for year 2013 takes into account 40 weeks of curriculum time for the school year, resulting in 200 days. The penalty for not complying with this norm is that the parent/guardian of the child has to pay a fine not exceeding $5,000, or to imprisonment for a term not exceeding 12 months, or to both; as stated in the Compulsory Education Act (Cap 51). (Ministry of Education, Singapore, 2013)

As an example, in Singapore´s Ministry of Educations' website is announced for year 2013: 11 days of holiday, compared to 18 from Argentina.

Another aspect that has been analyzed is the impact of longer school days. A study conducted in Argentina in 1971 (Llach, Adrogué & Gigaglia, 2010) showed that increasing the length of school days to double shift in half of the primary schools of the city of Buenos Aires in, impacted positively on the secondary graduation rate (it was 21% higher on students who did not attend double shift schools). Concurrently, the study showed that it is crucial not only to increase the amount of hours, but also to focus on the content and learning quality transmitted to students in these hours. Many of the students did not show mastery on a second language or a positive impact on income or employment although they attended the double shift schools. There must be placed special attention to this outcomes given that the implementation of double shift in all schools, represents a 40 percent increase in education expenditures.

Repetition vs. personalized teaching

Finnish student´s repetition grade went from 12 % to 2 % through implementing modular education and personalized ways of teaching.

The modular system allows the student to focus only in the areas in which they had difficulties to learn.

After the implementation of the comprehensive school reform in Finland (Sahlberg, 2011), upper-secondary schools in Finland started operating the modular curriculum that allows students to adjust their studies with their interests. Of course, there is early guidance and counseling to help students understand what they want to pursue later in their professional lives, and simultaneously, through this changes the promotion rate went up dramatically.

Teacher´s training and compensation

Given that quality of teachers is considered one of the most impactful factors in student's academic achievements, we looked into what Finland does when it comes to teachers training and selection.

In Finland, to become a teacher´s assistant a bachelor's degree is the minimum requirement. In order to become a teacher, a Masters in Education is required. (Oppenheimer, 2010)

The teaching profession is among the favorite for upper-secondary school graduates. It is consistently rated as one of the most admired professions, ahead of medical doctors, architects and lawyers.

To become a primary school teacher is highly competitive. The selection process is divided in two phases: First, a group of applicants is selected based on their matriculation examination scores, their upper-secondary school diploma issued by the school, records of out-of-school accomplishments, and a national entrance exam which focuses in a wide range of education issues.

The second selection phase consists on interviewing the candidates that were selected in the first phase, why they decided to become teachers. (Sahlberg, 2011)

This selection process and the high demand of teaching positions indicate that the most qualified students apply for teaching positions.

Teaching in Finland is considered as a highly reputable profession, such a being an engineer, doctor or economist.

In terms of payment, Finnish teachers make slightly more money than the average national salary, and their payment increases together with their work experience, and it is not merit based. This demonstrates that the salary level is not the main motive to become a teacher.

In contrast, Argentina's teachers, only require a non-university degree to teach, and there is a stronger stress in the pedagogical side than in the content side. The teaching profession in Argentina is considered a "second class" profession.

The problem with this, is that the most qualified students are very unlikely to devote themselves to teach, as it is not only a badly paid job, but also not recognized socially as a prestigious profession.

Many teachers have to take more than one teaching position in order to achieve a reasonable salary, which ends up affecting the quality of their work as well as their student´s quality of learning.

There are constant tensions between the local authorities and the teacher´s unions, for better salaries. Most times this tensions end up affecting students from public schools, which are the most vulnerable; the ones that attend public schools because they cannot afford private education. As we will see, many low-income families are sending their children to private heavily subsidized schools, rather than public schools to avoid having their children missing school days.

Very frequently teachers from public institutions go on strike, delaying the beginning of classes, and in most cases this days will never be recovered. We mentioned the law 25,864, which establishes that students will have 180 compulsory days of school, but in reality this rarely happens, due to the reasons we just described.

Chapter 5

"The accident of birth is a major source of inequality"

Professor James Heckman

What it takes to achieve a world-class education system?

There are many facts that affect a student´s performance. Keeping in mind some of the best examples of successful school reforms, these were the common factors in successful systems. (Stewart, 2012)

- A strong vision and leadership.
  As we mentioned before, in the case of Singapore, the authorities adopted a long-term commitment and vision. It is known that changes in education can only be seen after a minimum time of one to two generations. In the early days of this relatively new nation, they knew that the main resource they had was their human capital. This made authorities focus on keeping an updated and competitive curriculum that is future oriented.
  When we mention leadership, we should keep in mind the commitment of the society as well as local authorities. The reason for success is the participation of all stakeholders. A key element of this shared vision among all stakeholders is parents' involvement.

- Alignment and coherence in policies implementation.
  In Singapore policies are executed the way they are planned. When policies are planned, all the stakeholders from the Ministry of Education to teachers are aligned and assess if it works. This brings a lot of cohesion among all participants.

The Singaporean education system is referred as one of the springboards that allowed them to pass from being a third-world country to a first-world country in only one generation. Singapore became a country that attracts foreign investment, in a big proportion, due to the quality of their human capital and ease to operate. There were no shortcuts to get to this point; Singaporeans made education their highest priority and the government was determined to make this happen. (See Annex 5. Argentina and Singapore GDP per capita PPP evolution).

- High-quality teachers

  The fact that makes the biggest impacts on students' academic achievements is the quality of teachers. Teaching quality is the heart of school improvement.

  The overall quality of a school rests on the quality of it´s teaching force, and the quality of the teaching force will depend on the system in place to give them support.

  As teaching has to compete with other professions, in order to attract talent, the system should place the right incentives in place for this to happen. Countries with successful education systems are placing a lot of emphasis in recruiting, training, support, compensation and evaluation of teachers.

  According to Vivien Stewart: "schools cannot be turned around or driven to higher achievement without strong and effective without strong and effective leadership focused on results"

A study published by Mc. Kinsey & Company (Braun, 2007), identified what the best performing schools did to become top performers. It identified 3 key elements that are the ones that have the biggest impact on quality: 1. Getting the right people to become teachers. 2. Develop them into effective instructors. 3. Ensuring that the system is able to deliver the best possible instruction for every child.

The main driver of school excellence and students performance is the quality of the teachers. The study refers to a seminal research study conducted in Tennessee that showed that if two average eight years old students were assigned a high performer

teacher, and the other a low performer teacher, their performance diverged by more than 50 percentile points within three years. Students assigned to high performer teachers tend to progress three times faster than those assigned with low performing teachers.

The negative influence of a assigning a low performing teacher for several years, especially in early years of schooling, can affect a student´s performance in irreversible ways.

By age seven, students that score in the top 20 percent in test of literacy and numeracy, are already twice as likely to complete a university degree compared with children in the bottom 20 percent.

As a final consideration, if we could combine "alignment and coherence in policy implementation" together with "strong vision and leadership", we would be in presence of the coordination device we mentioned earlier. These two elements combined could drive forward the process of change we consider is needed.

Technology

We could not conclude our research without mentioning technology as one of the most powerful instrument to deliver education to a large amount of students at a lower cost.

Technology has no physical boundaries and content can be delivered at a reasonable low cost once the contents have been developed and the hardware is no longer a novelty and costs have been driven down.

Technology engages students to attend school and explore by themselves, stimulating their curiosity. It also enables a student-centric classroom, and turns the teacher into a guide and a supporter of the learning process. Technology allows them to learn at their own pace and respecting student´s unique their learning style. Students can repeat the lessons they did not master and move on to the next without having to

keep up with the pace of the rest of their cohort. This is called mastery-based learning. (Diamandis & Kotler, 2012)

What makes technology so powerful is that content can be delivered to any student, at any time, independently on their background, socio-economic status and location; internet´s penetration is equalizing access to education. The "accident of birth" in this case, is not an impediment for opportunity.

Another fact in which technology makes a tremendous impact is in places were there is a shortage of teachers, through technology the amount of students per teacher can be increased.

Professor Clayton Christensen studied extensively the impact of technology in the classroom and the impact of student centric systems in which the teacher only acts as a guide on student´s journey learning through the implementation of technology: "Student-centric learning opens the door for students to learn in ways that match their intelligence types in the places and the paces they prefer by combining content in customized sequences. As modularity and customization reach a tipping point, there is another opportunity for change...teachers can serve as professional learning coaches and content architects to help individual students progress- and they can be a guide on the side, not a sage in the stage." (Christensen, Horn & Johnson, 2008). "Data suggests that by 2019, about 50 percent of high school courses in the US will be delivered online."

Lately there has been an increasing demand for online courses and this tendency is growing worldwide. In the US, the best example is the University of Phoenix. This institution only provides online education and became the university with the largest amount of students in the country.

The tendency is for online education to grow, and expand it´s reach. Some very successful initiatives are free online courses as Kahn Academy, which can be accessed from any computer in the world with Internet access.

A way in which governments made efforts to include technology in the classroom, was through programs like "One laptop per child" OLPC, which provides students with a personal computer for their own personal use. There are mixed reviews about the efficacy of this programs, but what we want to show is that there are many governments, among them Argentina´s government, who are providing personal computers to their students to narrow the "digital gap". Argentina has two initiatives in this field: Plan Sarmiento, only in the Ciudad Autónoma de Buenos Aires and Plan Conectar Igualdad, at a country level focusing on high school students.

One strong criticism that is related to these plans of delivering computers to students, is that frequently, due to a lack of proper planning, the adaption rate of students is much faster than teacher´s. The reason for this is that teachers are not appropriately trained and also there is a perception that computers will replace teachers.

For sure, with a more conscientious planning, the result of these initiatives would have a much far-reaching impact. With appropriate monitoring, the impact of these plans would be better perceived by the teaching community and most of all, benefit students to a greater extent.

Last but not least, a poor implementation of this programs, might explain why although the amount of investment in education increases, the results are not tangible.

Chapter 6

"Poverty is not solved with growth.
Poverty is solved with education"

César Gaviria, former president of Colombia

Ways to address the problem of inequality

Revisiting the facts we described until now, we are in a good position to arrive at some conclusions on how to address the problem of poor quality education and socio-economic disparity levels given in Argentina.

First of all, one of the biggest challenges for Argentinians is that they do not comprehend the problem they are in, and most sadly, they do not see it is a problem affecting all of them. This is not just a problem for the lower classes. It is true that they are the most affected, but concurrently, no company can grow, therefore the country cannot grow without access to qualified workers.

Without wise investment in education today, there will not be qualified human capital for tomorrow. As a result of this situation, social tensions across all sectors will only increase.

In Argentina, the erratic education policies implemented in recent years, the increased portion of GDP invested in education with no palpable results, the tensions between teachers´ unions and local authorities together with the lack of acknowledgement of society, make a recipe for disaster.

Based on the past performance of local authorities in addressing this problem, it seems very doubtful that the solution will come from the public sector. The lack of social pressure makes one believe that there is no sign of change in the short term.

We are missing a coordinating device that brings all the actors from across sectors to work together on a sustainable solution once and for all.

The shift from public to private education is certainly a flaw of the system, in a country that lists in its constitution the right to high-quality, free education for all.

We see the shift from public to private education as an opportunity to turn the system around, *starting to build on the system's own flaws.*

Private sector's participation in Argentina

There has been a shift in demand from public to private education over the past decades.

Middle and upper classes started demanding private education decades ago, as it is perceived to provide a safer environment for children, where children will be better nurtured and where the quality of education is also *perceived* as superior. There are other facts for which parents from middle-upper classes choose private institutions, and it is related to the social aspect. Argentinian parents assign a lot of value to the networking opportunities school provides to their children, linking their social environment and future employment possibilities. This fact is relevant enough to be mentioned but it is not within the scope of our research. We mention it as it is useful information to understand the background which parents use to make the decision in which school they want their children to study and why. (Tiramonti & Ziegler, 2008)

What is new is that in the last few years even the middle-lower classes have started to demand private education for their children. Each time more, the lower income sectors of society choose to pay for a service that has always been provided for free.

Parents opt for private education because the public education system is going through a legitimacy and fiscal crisis. The high level of conflict between the public authorities and unions around salaries are also driving demand. This conflict translates to increased absenteeism by teachers generating a burden for working parents.

There is evidence that students that receive private education score better in standardized tests and there is a comparable higher satisfaction level from parents.

Public education has been losing relevance and prestige in Argentina since 1960 and participation in the private sector has been in steady increase. Big cities such as Buenos Aires, Cordoba, Rosario and Tucuman, are among the highest positions in worldwide rankings of privatization of education. In many of them the percentage of students in the private sector is up to 35 percent, and in many districts of Buenos Aires, such as Vicente Lopez and San Isidro, this percentage scales up to 65 percent and is increasing every year. This increase has been steady even through the economic breakdown of year 2001. (Narodowski, 2010)

The number of students attending pre-school, has increased 23 % since 2003 and 57 % of those parents chose a private institution. In the case of secondary schools the student population increased 5 % of which 40 % opted for private schools.

Private education grew at a rate of 20 % while the public education diminished a 5 %. (Narodowski, 2012)

The tenth article of law 26,206 states that: "The National Government will not sign bilateral or multilateral free trade agreements that imply conceiving education as a lucrative service or encourage any form of commercialization of public education." It is true that the privatization of public education is not being achieved by signing free trade agreements, but it is happening steadily, for other reasons that local authorities are not able to prevent.

In conclusion, there is a process taking place in Argentina, through which more families choose private education over public education. The "privatization" is taking place.

Proposed solution relying on the private sector

As mentioned above, we do not see an effective solution coming from the public sector, until the right incentives are put in place.

The alternative proposed is a private initiative that can implement an innovative model, building on the flaws in public sector education, for example focusing on teacher training, providing adequate work conditions and appropriate payment for teachers.

The demand for private education is increasing and the biggest increase is in the lower income communities, as they leave public education and opt for low-cost private education. The demand for high-cost education is also increasing.

There is a growing underserved market that could be addressed with a social end: to narrow the gap between elite and marginalized/ rural schools, through knowledge sharing between these two groups.

A suitable solution to narrow the gap is to have high-quality private schools cross-subsidize rural or marginalized schools in low-income communities, focusing in enhancing teacher's quality.

One alternative to put this network of schools into place is to create a foundation, and use it to offer high-quality education in mid-to-high class neighborhoods, and run them until they break even and become self-sustainable. It is important to remember that foundations can make use of tax breaks, which constitutes a critical advantage in this business model.

Once the foundation runs this school and the school becomes financially self-sustainable, the cross- collaboration with other schools can start. It is important to emphasize that the main objective of the joint work is to provide children from low-income communities access to education that they would never have been able to achieve were it not for this initiative.

Right now most elite private school are doing solidarity projects. The problem with these projects is that they only cover a small part of the children´s need and most of the times it is a temporary effort, not sustained all over the year. In most schools the collaboration is done by sending food, school supplies, clothes, but unfortunately not through collaboration in terms of sharing knowledge or best practices. We consider that these two aspects are the most valuable assets private elite schools have to share.

This collaboration model should be implemented through a hub and spoke structure, where the private school is the hub and the rural or marginalized schools that participate in the program are the spokes. A single private school with the right programs in place can collaborate simultaneously with many rural or marginalized schools, increasing the number of schools impacted.

The ways of collaborations we are considering are:

- Knowledge transfer
- Sharing curriculum
- Sharing best practices
- One-to-one mentorship between teachers

The main characteristic of this model is that it focuses on improving teacher´s quality through training.

The model we are considering can be executed in one of two ways:

1. Collaboration with existing rural or marginalized schools
2. Simultaneous operation of our "parent" private school in collaboration with low-cost private schools in marginal or rural areas. Meaning, opening private low cost schools in rural/marginalized areas subsidized by the parent school.

The strong point about this model is that it does not depend on donations as it was conceived from the beginning as a self-sustaining entity. There are other foundations and NGOs working in education in Argentina, but they all depend on donations. That would be our main differentiating factor. As we want to scale our reach, we could receive donations or grants but they would not be our main source of income. The philanthropic culture in Argentina isn't as strong as it is elsewhere such as in the US. This is why it is to make our project financially independent. Another advantage of being self-sustaining is that it would require a greater degree of internal accountability. At least in Argentina, the private sector is better at this point than the public sector.

The advantage of this initiative is that if it is successful, many good practices from the private sector can be adopted.

Although our main focus is executing the collaboration between these two groups (elite and marginalized or rural); our expectation is that this initiative will attract parents from mid-high income sector that will want to pay for this elite education with a strong social component. This project appeals to their social awareness as well as their interest in having their kids acquiring the so-called "XXI Century" skills.

Even when our approach is to work on the private sector and make it our platform to collaborate with the public sector where the most needy schools are, we know that the public sector is the only one that can make change at a big scale. The intention is to set an example, and hopefully, this initiative will produce a ripple effect.

One ripple effect could be manifest is to influence the public sector to implement policies that can change the system to raise the education level and narrow the gap between the privileged and the underprivileged students.

Narrowing our approach: early childhood education

The problem we are analyzing has a well-rooted social and political background that unfortunately the private sector has limited power to address in it´s entirety. For sure the public sector would be in a much better position to address this issue as they have the economic resources. Without a pragmatic solution they have not done so. For this reason, we acknowledge the importance of narrowing the scope of our activities in order to achieve a higher level of impact.

In our research we found that there are many alternatives to invest in education.

Focusing our efforts in certain groups has more lasting and powerful effects. For that reason we think the best way to start is with early childhood education focusing on children from 2 to 5 years old, with the expectation to be able to expand our target group from birth through secondary education.

There has been extensive research done on the impacts of early childhood education; and many studies conclude that it is the investment with the highest returns.

Programs as the High Scope Perry Pre-school Program probed that the return for funds invested in education can be $16 for every dollar invested. (Schweinhart, Barnett & Belfield, 2005).

Other measures indicate an estimated rate of return (the return per dollar of cost) in excess of 14 percent (Heckman, Moon, Pinto, & Yavitz, 2008). This rate is higher than standard returns on stock market equity (7.2 percent). The education returns are underestimated rates because they do not account for the economic returns to health and mental health nor do they include the returns for society.

This study was done between 1962 and 1967 with 123 low-income children that were 3 and 4 years old.

Children were divided in two groups. One group participated in a preschool program and the other did not. Children that received education, received half-day instruction for 30 weeks, and the teacher-student ratio was approximately 1:5. The curriculum was based on Jean Piaget´s guidelines and there was an effort to involve parents of these children.

Once kids finished with this program, researchers followed up every year from age 3 to 11, and again at ages 14, 15, 19 and 27, being the last time at the age of forty.

The study concluded that children that received education:

- Were 18% more likely to complete high school or post-secondary education
- Had employment rates 14 % higher at age 40.
- From the children that did not receive education; 55% had five or more arrests by the age of 40 vs. 36% in the case of children that received education.
- Were 22% more likely to earn at least $2,000 monthly by the age of 40
- Were 23% more likely to own their home
- Were 21% less likely to depend on welfare

Another study that showed similar results is the Abecedarian Project, the long lasting effects of early childhood education were seen as children did better at reading and math and tend to stay longer in school. They also have higher chances to graduate from high school, attend a four-year college and most participants waited longer to have their first child.

The value of these two projects is that they tracked students that took part of them for many years, and both conclude that the outcomes stand the test of time.

This type of investment has the enormous advantage that it is preventive. With an effective implementation the achievement gap would narrow over time, and at a lower cost for society and less suffering for these vulnerable segments. The average

cost of these programs was $ 7,000 per year, in 2003; while the cost of prison expenditures was between $ 20,000 and 40,000 per year. From an economic point of view there should be no question on where to invest; simultaneously, there are lots of unmeasured costs in a violent uneducated community that cannot be counted but are still present.

The costs of corrective measures are higher than interventions done earlier in life. Some of these corrective measures are: reduced pupil-teacher ratio, convict rehabilitation programs, adult literacy programs, expenditures on police and welfare.

As governments are currently spending resources in all the corrective measures we mentioned above, if they could switch the investment from corrective to preventive measures, they would be saving money at the end of the day.

One of the biggest defenders of investments in early childhood education is the Nobel Prize winner, Professor James Heckman from the University of Chicago. His research in this field is another source of evidence that the investments in early stages of life have the highest returns, and through early childhood interventions, inequality can be attacked at it´s source. Early interventions boost the productivity of the economy. (Heckman, 2008) Late remediation measures implemented to compensate deficient early years are proven not to be as effective and more costly. That is why policy should target the malleable early years.

Any program should be implemented paying close attention to social sensitivities among the communities that will be participating in it.

According to Heckman, "*Effective strategies would engage the private sector to mobilize resources and produce a menu of programs from which parents can choose".*

What was not mentioned until now is that there are other factors that play a critical role in a child´s development. The most important factors are the social environment in which they grow up and family support. These two have a huge influence on future perspectives of development.

Chapter 7

"Dare mighty things"

Theodore Roosevelt

Final remarks

Based on the information presented, it is evident that Argentina's education system has been declining. It would have been good to count on more data points to reinforce this statement, but there is not much data availability as participation in international examinations has not been constant over time.

There is proof that the system is shifting towards private education at all socio-economic levels.

It is also clear that the government could not implement effective policies to solve the problem of poor quality and inequality in education.

Education is not a national priority for the government. As long as Argentinians remain unaware of the seriousness of this problem, they will not push authorities for an urgent change. One of the elements that should trigger this immediate need for action is that youngsters consider their education as an opportunity cost, instead of a tool for social mobility.

Argentinians have a track record on protests when they have to send a clear message to the government. Until now there has never been a cross-country protest claiming for better education conditions.

A fact that results encouraging is the increase of NGOs interested in this space.

The private sector must step in, as this is a problem that will impact them shortly, when they do not find available of qualified human capital.

Our proposal is that with a twist of innovation, the right team in place and investment, the foundation we propose can be established and make the private sector part of the solution.

The tax break foundations can make use of, makes the difference. As the profits that derive from the tax exemption, give the extra income necessary to afford for this cross-collaboration. This is what makes our model economically feasible and self-sustainable.

The scheme proposed allows implementing this mentoring system, that is not ambitious in terms of the amount of economic resources required, but it is in terms of the social impact that can be made.

Annexes

Annex 1. Relative evolution of Argentina in terms of quality of education) (Auguste, Echart & Franchetti, 2008)

Ranking best to worst	1950s	1960s	2000s	2006s
1	Norway	Japan	Netherlands	Finland
2	Switzerland	Norway	Japan	Canada
3	Denmark	Sweden	Rep. of Korea	Japan
4	Belgium	New Zealand	Finland	New Zeland
5	Australia	Switzerland	New Zealand	Australia
6	UK	UK	Switzerland	Netherlands
7	Canada	Australia	Australia	Rep. of Korea
8	Sweden	Austria	UK	Germany
9	Austria	Denmark	Canada	UK
10	France	Belgium	Belgium	Czeck Rep.
11	Japan	Canada	Denmark	Switzerland
12	Netherlands	Finland	France	Austria
13	Germany	Netherlands	Sweden	Belgium
14	Brazil	France	Austria	Ireland
15	Finaland	Germany	Ireland	Hungary
16	Italy	Ireland	Germany	Sweden
17	Czech Rep.	Israel	Czech Rep.	Poland
18	New Zealand	Italy	Norway	Denmark
19	Argentina	Czech Rep.	Hungary	France
20	Portugal	Macedonia*	Spain	Spain
21	Macedonia*	Spain	Russian Fed.	Norway
22	Ireland	Indonesia	Poland	Russian Fed.
23	Spain	Argentina	Portugal	Italy
24	Romania	Romania	Italy	Portugal
25	Chile	Hungary	Greece	Greece
26	Indonesia	Russian Fed.	Romania	Israel
27	Hungary	Rep. of Korea	Israel	Chile
28	Poland	Portugal	Thailand	Thailand
29	Israel	Chile	Mexico	Romania
30	Russian Fed.	Poland	Argentina	Mexico
31	Rep. of Korea	Greece	Chile	Indonesia
32	Peru	Brazil	Macedonia*	Argentina
33	Greece	Thailand	Indonesia	Macedonia*
34	Thailand	Peru	Brazil	Brazil
35	Mexico	Mexico	Peru	Peru

Notes:

(1) Corresponds to the ranking of Bratsberg and Terrrel using US Census 1980 (Where we assume the average worker has 40 years old, therefore they were in 4th grade in the 50s)
(2) Corresponds to the ranking of Bratsberg and Terrrel using US Census 1990 (where we assume the average worker has 40 years old, therefore they were in 4th grade in the 60s)
(3) Ranking according to the SES adjusted mean score based on PISA 2000.
(4) Ranking according to average score based on PISA 2006.
1/ Macedonia ranking correspond to the former Yugoslav Republic. * Corresponds to the 2000 score, since 2006 was not available

Annex 2.

Satisfaction with Education and Test Scores

Country	Percentage Satisfied With Education	QIHC results* (Scores 1-100)
Venezuela	84	55.1
Singapore	82	100.0
United Kingdom	82	82.3
Cuba	82	86.1
Uruguay	76	71.3
Paraguay	75	60.5
Bolivia	73	59.8
Honduras	73	56.4
Dominican Republic	72	57.1
Colombia	72	62.0
Taiwan	70	96.7
Japan	70	92.2
Mexico	68	63.7
United States	67	82.4
Brazil	64	62.9
Chile	63	64.3
Senegal	55	22.8
Argentina	54	65.6
Uganda	52	55.0
Mauritania	48	22.7

Source: Gallup 2007 and Altinok and Murseli (2007)
*Note: QIHC: Quality Indicators of Human Capital.

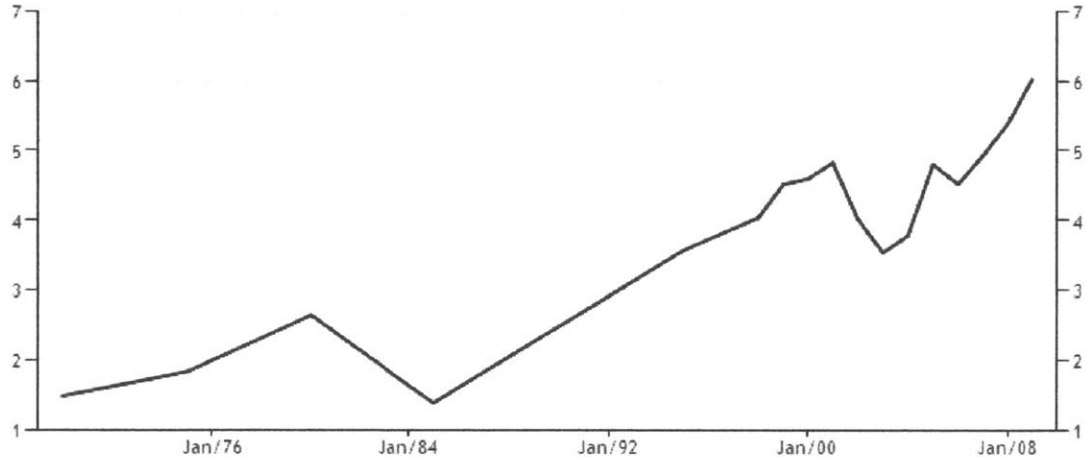
Annex 3. Repetition rate. 2009

Province/ jurisdiction	Primary (six years)							Primary				Polimodal- Oriented cycle			
	Total	Year						Total	Year			Total	Year		
		1°	2°	3°	4°	5°	6°		7°	8°	9°		10°	11°	12°
COUNTY´S TOTAL	**4.69**	**7.54**	**5.36**	**4.54**	**4.17**	**3.67**	**2.59**	**12.45**	**9.37**	**15.73**	**12.23**	**7.41**	**11.59**	**6.84**	**1.32**
BUENOS AIRES	3.68	5.54	4.51	3.65	3.15	3.01	2.07	13.59	12.58	16.28	11.46	8.63	12.80	8.49	1.40
Conurbano	3.66	5.16	4.58	3.72	3.18	3.15	2.12	13.46	12.29	16.25	11.40	9.07	13.07	9.09	1.71
Other jurisdictions	3.70	6.16	4.43	3.55	3.10	2.78	2.00	13.80	13.05	16.34	11.55	7.87	12.31	7.45	0.89
CATAMARCA	3.97	5.57	4.62	4.26	3.63	2.89	2.80	6.87	7.22	8.58	4.48	3.41	4.18	4.71	0.73
CHACO	6.04	11.10	7.00	6.54	4.26	3.53	3.04	13.72	5.99	19.39	15.31	6.34	10.51	5.50	0.63
CHUBUT	3.20	5.48	3.21	2.65	3.08	3.05	1.78	15.54	13.58	19.65	13.12	9.34	16.23	6.85	0.80
CIUDAD DE BUENOS AIRES	1.89	2.80	1.95	1.65	1.59	1.68	1.62	9.86	0.71	14.59	12.72	6.49	9.62	6.85	2.16
CORDOBA	3.38	6.03	3.60	3.25	3.25	2.77	1.10	12.67	11.84	15.31	10.42	5.19	9.57	3.71	0.36
CORRIENTES	13.34	21.66	16.02	11.84	11.54	9.34	6.07	12.03	12.04	13.48	10.16	5.93	8.99	5.91	1.39
ENTRE RIOS	5.62	8.51	5.32	5.58	5.48	5.07	3.36	15.38	14.35	18.39	13.00	6.63	10.69	6.06	1.75
FORMOSA	8.93	14.76	9.99	9.47	7.85	6.37	4.17	11.50	13.26	12.10	8.55	5.01	7.75	4.90	0.95
JUJUY	3.13	5.07	3.31	2.76	3.20	2.46	2.06	9.89	1.54	13.77	13.65	8.42	11.65	9.15	2.74
LA PAMPA	3.85	7.16	3.15	4.10	3.42	2.82	2.12	13.98	12.56	18.50	9.90	8.55	13.06	9.19	0.51
LA RIOJA	5.32	7.84	6.18	5.28	5.03	4.30	3.02	10.13	10.49	12.26	7.00	3.21	5.58	2.73	0.45
MENDOZA	4.82	7.73	5.05	4.18	4.18	4.21	3.58	12.09	2.18	16.52	17.07	9.27	15.07	7.23	2.13
MISIONES	7.71	11.63	8.48	7.56	7.30	6.22	4.51	8.11	3.39	12.48	8.69	4.96	7.92	4.05	1.17
NEUQUEN	4.90	5.35	4.64	4.72	4.55	5.95	4.16	15.81	1.66	22.11	22.33	12.09	17.74	10.72	5.38
RIO NEGRO	3.18	5.87	3.38	2.58	2.47	2.44	2.38	11.23	1.02	17.00	14.88	6.63	10.15	6.91	0.97
SALTA	6.66	10.28	7.11	5.99	6.09	5.23	4.84	12.37	6.32	15.90	14.84	8.33	12.93	7.79	1.59
SAN JUAN	3.95	7.19	4.21	3.43	3.93	2.68	1.47	9.00	7.62	10.94	8.34	4.08	5.86	4.31	1.06
SAN LUIS	7.65	10.63	6.48	5.53	7.69	8.57	6.42	13.26	13.93	14.95	10.12	5.26	8.82	4.77	0.14
SANTA CRUZ	7.04	6.77	5.53	5.48	6.84	8.74	8.76	18.00	21.79	18.59	10.43	9.78	14.72	9.01	2.69
SANTA FE	3.79	6.25	4.45	4.04	3.46	2.43	1.93	12.27	1.23	17.81	17.17	8.09	13.84	5.46	0.77
SANTIAGO DEL ESTERO	8.84	14.78	10.56	8.50	8.12	5.71	3.44	8.62	5.23	11.92	9.51	5.15	8.71	4.58	0.60
TIERRA DEL FUEGO	3.86	5.63	2.47	4.42	3.62	4.61	2.31	17.30	18.63	17.73	15.11	7.14	10.57	8.06	0.65
TUCUMAN	3.29	5.38	4.25	3.83	2.78	2.03	1.26	9.77	11.13	10.16	7.14	3.57	6.32	3.05	0.29

Source: Annual survey 2009 & 2010. DiNIECE. MEN.

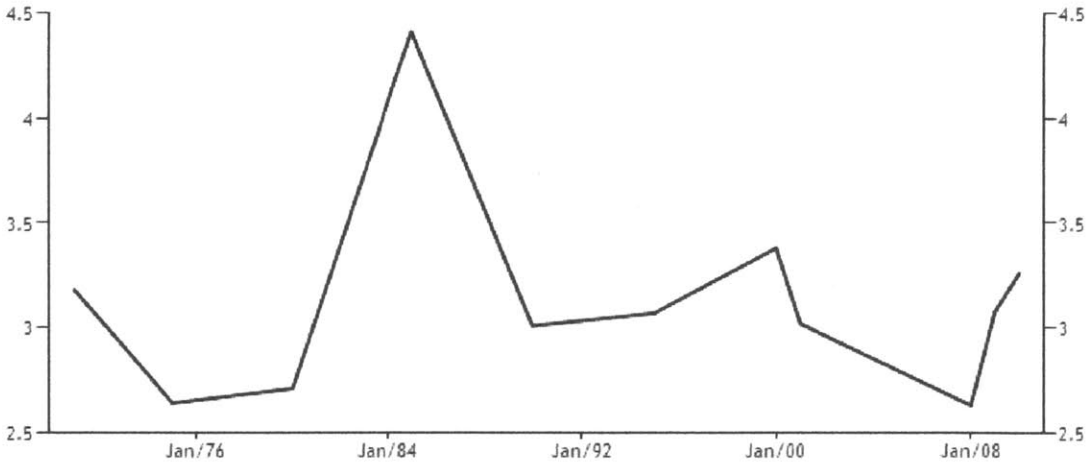
Annex 4. Percentage of GDP spent in education in Argentina and Singapore

Percentage of GDP spent in education in Argentina. Years 1967 to 2013



Source: Trading economics website.

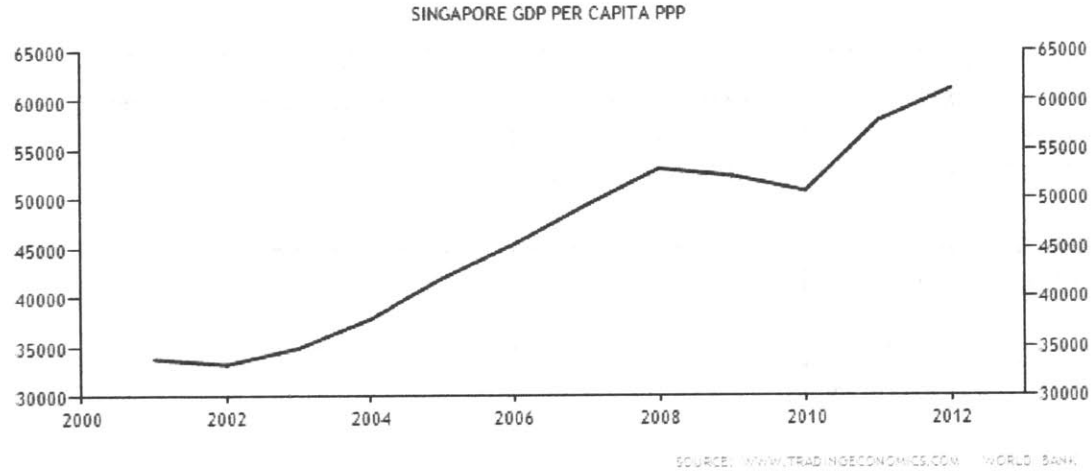
Percentage of GDP spent in education in Singapore. Years 1967 to 2013



Source: Trading economics website

Annex 5. Argentina and Singapore GDP per capita PPP evolution.

Source: Trading economics website.



Source: Trading economics website.

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