Global Development Network

Strengthening Institutions to Improve Public Expenditure Accountability

Redistribution of funds for the Ministry of Education programs - A Policy Simulation

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INTRODUCTION

Argentina suffers deep regional inequalities with regard to its economic and social development. Moreover, there is an enormous imbalance in the allocation of fiscal resources between the provinces, stemming from a rigid distribution of federal resources that cannot be modified without the consent of the 24 sub-national jurisdictions. Such rigidity presents a major constraint to any compensatory plan vis-a-vis the regional inequalities.

This uneven distribution of resources is transferred to the education system, which has significant differences in terms of investment per student, resulting in an unequal educational offer whereby some provinces end up with more funds and are able to afford higher teachers' wages, more didactic material, support for students with difficulties and more infrastructure as may be required to include the marginalized children. All of these factors have a direct impact on the attendance and educational quality indicators.

These indicators are characterized by significant inter-provincial inequalities. Around 11 percent of the population between the ages 3 to 17 years does not attend school, but the gravity of this situation varies depending on the jurisdiction: in half of the provinces of the northern region, exclusion affects more than 15 percent of children, while in Buenos Aires City it only reaches 5 percent (National Census 2010).

The quality of education too lacks uniformity. In the National Assessment Operative 2010, one-third of the provinces with worst results all belong to the Argentine northern region; on an average, 39 percent of their students showed low results in language assessments.[1] Furthermore, one-third of the provinces with better results belong to the Patagonian region (the richest in fiscal terms) and the central one, with 18 percent of the students achieving low results.[2]

Similarly, there is a relationship between investment in education in the provinces and the quality of their education; investment per student in the public sector and language results in secondary education show a correlation of 0.5 in this assessment. Besides, there is a slightly positive correlation of 0.34 between these quality results and provincial teachers' salaries.

In this scenario marked by strong inequalities in investment per student, with corresponding inequalities in education outcomes, the national government has an important compensatory role to play by implementing nationwide public programs. In education, the national government is responsible for about 30 percent of the total investment.

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[1] According to the classification made by the National Ministry of Education, results in assessments are categorized as low, medium and high.

[2] In primary level similar values have been observed.

The main programs are teachers' wage fund, compensatory funds, and infrastructure programs. Contributions to teachers' salaries represent about half of the national government investment in non-university education. Compensatory contributions for the most disadvantaged students also represent a significant portion of the national education budget. In addition almost all school infrastructures are financed by the national government.

These funds are frequently distributed in a discretionary way within the provinces and are not based on any objective criteria, leaving ample scope for greater inter-provincial inequalities in education.

In this environment of inequalities in resource allocation, the rigid scheme of federal resources distribution and the lack of objective mechanisms to appropriately utilize the national funds, the chosen policy simulation focuses on setting the criteria for the redistribution of resources from three major programs of the Ministry of Education:

1) Teachers' wage fund
2) Student compensatory programs
3) Infrastructure programs

These three policies should have an impact on education outcomes. In the first place, objective and impartial distribution of wage funds will allow the provinces with less fiscal resources and greater budgetary effort for education to ensure higher wages for their teachers.

A vast range of works shows that arriving at a minimum teacher wage is necessary to ensure better results in education. Among these, the study conducted by Mourshed, Chijioke and Barber (2010) — based on an analysis of 20 international experiences vis a vis improvement in education quality — demonstrated that countries that raised their teachers' wages achieved better results. Moreover, recent comparative studies on the relationship between social and educational inequalities (Mons, 2008; Dubet, Duru-Bellat and Vérétout, 2010; Pickett and Wilkinson, 2009) show that countries with lower income gaps achieve better and more equitable results in terms of quality; teacher wage being a key contributing factor to these outcomes.

Coming to the compensatory and infrastructure funds, their redistribution has to do with distributive justice. The application of an objective formula to the distribution of the compensatory programs will mean more education funds for provinces with higher percentages of poor children and youngsters. Similarly, in the case of the infrastructure funds, their redistribution will help divert these funds to provinces that must cater to the needs of higher percentages of excluded children. Both funds are executed by the national government, thus the redistributive process does not pose any dilemma in terms of efficiency in expenditure.

As regards the proposals suggested to establish the distribution criteria for the assignment of national educational resources to provinces, it is important to take into account two different dimensions of disparities between the jurisdictions:

(1) **Social inequalities affecting the population:** these stem from an extremely unequal social structure, which leads to unfair life conditions for students from the poorest sectors of the population. The social gap is wide, both within and between the provinces: In 2009, 5 percent of the population of six provinces with the least social poverty was found to be poor, whereas 23 percent of the population of the six provinces with the highest level of social poverty was poor.
(2) **Fiscal inequalities affecting the provinces**: caused by the differentiated conditions for local collection of resources and the unfair and arbitrary division of the Federal Tax Co-Participation. The gap is extremely wide in this case as well: the six fiscally richest provinces had $15,000 per inhabitant in 2010, while the six poorest provinces had only $5,000 per inhabitant in the same year.

It is important to note that the fiscally and socially richest/poorest provinces are not always the same ones, even though this is generally the case. For instance, La Rioja, Formosa and Catamarca are socially poor and fiscally rich provinces (they are benefited by Co-Participation), while Misiones, Salta and Tucumán are socially and fiscally poor (the resources they receive per inhabitant from Co-Participation are less than half the resources received by the three provinces mentioned earlier).

The provinces that are most discriminated against by Co-Participation are the ones that are most populous, especially Buenos Aires, followed by Santa Fe, Córdoba and Mendoza. The most benefited are Tierra del Fuego and Santa Cruz.

The following are two critical elements of inter-provincial inequalities in education:
(1) **Inequalities in the basic social conditions that are crucial to schooling:** these include basic support in the form of scholarships, cafeterias, school supplies, etc., and pedagogical support — such as extended school day, cultural programs, communitarian projects, etc. — policies from the State to contribute towards ensuring, through the education system, the right to education.
(2) **Inequalities in teachers' salaries:** these are derived from the provincial fiscal resources, which require either a fairer fiscal federalism or national compensations that can guarantee the right to a decent and fair salary to teachers for the same tasks, regardless of the province where these tasks are performed.

Starting with these two dimensions of the inter-provincial inequalities in education, we propose alternative distribution schemes for the national educational resources in order to achieve higher levels of justice for students and teachers.

The establishment of objective distribution mechanisms for national resources, so as to benefit the socially and fiscally poorest sectors in an institutionalized way is also equally important. Besides, there is the need to establish objective formulae (with clear and updatable criteria) which make it possible to avoid discretionary mechanisms, thus enabling alterations in the distribution of national resources, given the possible changes in government.

The simulations will consider different schemes for resource distribution based on a set of economic, social, and educational variables, depending on the objective of each program. The distribution of program funds will be reviewed at the federal level, focusing on compensation components based on the fiscal capacity of the provinces, the financial effort they expend on education, their poverty level and the infrastructure needs.

The proposed scheme is vital to ensure the right to education for all strata of society. Nowadays, the policy debate focuses on the contribution of the national government to all provinces, not taking into account the structural problem of funding that arises from the inequitable distribution of federal revenues.

The distribution of national resources is based on *three major national funds,* which should be distributed between provinces as per specific criteria: teachers' wage funds, compensatory programs, and infrastructure programs. Together, these three funds added up to $4,233 million in 2009 ($2,943 for wages,[3] $593 for compensatory policies, $697 for school-building).

The formula proposed for *wage funds*, which include the National Teacher Incentive Fund (FONID according to its acronym in Spanish) and the Compensatory Fund, is based in the factor that explains inequalities in teacher's wages: the fiscal resources per school-age child. Given the extreme disparities that exist between the provinces, from the $38,267 available for each school-age child in Santa Cruz to the $7.393 per child in Misiones, the proposal establishes that only the 14 provinces with limited fiscal resources per school-age child would enter the wage fund.

These 14 provinces can be divided into two groups: Priority 1 and Priority 2. The eight provinces with less fiscal resources per school-age child comprise the Priority 1 group, i.e. Misiones, Salta, Corrientes, Buenos Aires, Tucumán, Santiago del Estero, Jujuy and Chaco. These jurisdictions would receive 75 percent of the total wage fund. The Priority 2 group would receive the other 25 percent, and would comprise of six provinces, namely, Mendoza, Córdoba, Santa Fe, Entre Ríos, Formosa and San Juan.

This distribution model is set out as an "ideal justice scheme", which can be modified in several ways to make it politically viable. Its main purpose is to identify the provinces that are in utmost need of resources to pay teachers' wages. The great advantage of this model is that it does not assign resources to provinces whose states are comparatively rich (something that FONID does) and it fixes the compensatory distribution objectively, i.e. not according to the wages that provinces pay (as the Compensatory Social Fund does), but according to the resources at their disposal.

Once these 14 jurisdictions enter the proposed wage fund, it would be distributed objectively according to a formula based on two criteria: the fiscal resources per school-age

[3] The amount of the wage funds includes $648 million assigned to the province of Buenos Aires, equivalent to the resources transferred as extraordinary aid for the payment of teachers' salaries.

child and the percentage of total expenditure assigned to education. In this way, provinces with less state resources, and which put greater financial efforts into education would be beneficiaries of the fund. The first criterion aims to mitigate the inequalities; the second one proposes an incentive to increase investment in education.

With this most suitable proposal for the distribution of wage funds, the existing wage inequality among provinces would be maintained (considering the national wage funds as distributed in 2009), but the great advantage would be the bridging of the notoriously huge gap in fiscal efforts to pay the teachers' salaries. In practice, this is of great benefit in that it establishes a better order for provincial fiscal accounts at absolutely no cost in case of any possible increase in wage disparities.

The second national fund is assigned to *compensatory policies*. In this case, a different formula is proposed. The dissimilarity between the fiscal and social poverty of provinces is key to distinguish the proposed distribution criteria for these funds from the wage fund. The teachers' salary is a right of every worker in the field of education, who is entitled to receive the same compensation for the same tasks in any province (with adjustments made according to the living costs). The non-fulfillment of this right is attributed to the existing inequalities in the provincial fiscal resources.

Compensatory policies, unlike the wage funds aim to guarantee the basic conditions for socially vulnerable students. In this case, the decisive factor is not the fiscal poverty of the state, but the proportion and type of social poverty in each province. Hence, the proposed formula is based on a sole criterion: the percentage of school-age population below the poverty line.

It is interesting to note that the present distribution of the national compensatory policies is clearly in line with this very criterion. The proposed formula would correct certain differences within the present distribution system and would guarantee an objective criterion to enable the removal of discretionary practices in the allocation of national educational resources — by whichever government is in power — to mitigate the students' social vulnerabilities.

The third analyzed national fund refers to *infrastructure*. In this case, a combined formula is adopted, since the infrastructure-related problems respond to both social and fiscal causes. The socially poorest provinces are those that are most excluded in terms of the schooling system, and where more new schools are required; they are also provinces with less fiscal resources and require national support so as not to remain in inferior conditions.

The formula proposed in this case consists of three factors: the proportion of students outside the education system; the fiscal resources per school-age child; and the financial effort put into education. Unlike the case of compensatory policies, this formula would imply substantive changes in the present distribution of national infrastructure resources, conveying great dispersion and arbitrariness in their distribution within jurisdictions.

The distribution which results from the three funds shows that provinces that have greater social poverty as well as the ones that have more fiscal poverty would clearly benefit, given the present distribution scenario**.** Following the objective criteria of the formulae presented for each specific fund, the national state would be able to generate substantive improvement in the fiscal situation of the provinces that are in critical situation, reducing the inequality gap both in terms of their financial effort towards education as of investment per student.

The problems that this proposal could come up against are typical of a scheme that aims to benefit the losers, who generally have less power, less voice and less capacity of demand. In order to benefit the few very populated provinces that are under-represented in Congress, it is necessary to take resources out of the rich jurisdictions that have a clear legislative over-representation so as to make more resources available to those that need more, even in the face of the resistance that could arise from the decision to take away resources from the comparatively well off jurisdictions. In order to guarantee the institutional character of this fairer distribution over time, it is necessary to create objective formulae to do away with the discretionary control of the national government in power.

Confronting these challenges would probably lead to intermediate formulae that are more viable in the short term. The proposals presented here seek to orient the criteria, and not to confine these to an ideal distribution. For sure, in subsequent instances, technical and political experts will be able to evolve a balanced alternative. In any case, the proposals are a great step towards inviting structural changes vis-a-vis fiscal federalism in education. The great achievements of the Education Finance Law lead us to believe that political courage and decisions needed to take this new step are in fact possible.

THE UNSOLVED PROBLEM OF INEQUALITY IN PROVINCIAL FINANCE

The presence of deep inequalities between jurisdictions is a structural problem affecting education finance in Argentina. This is clearly reflected in the state investment per student that each jurisdiction makes: while Tierra del Fuego invested $12,900 per year per student in 2008, the investment in the province of Salta, at the other extreme, reached $2,649, which is six times less (Table 1).

On the other hand, enormous disparities can also be identified in terms of the efforts of jurisdictions to finance education. At the one extreme, there is Buenos Aires, which in 2008 assigned 38.6 percent of its total budget to education; at the other extreme, there is Santa Cruz, which assigned just 18.9 percent of its budget in the same year (Table 1).

Table 1: Education finance indicators. Year 2008.

Jurisdiction	Percentage of the budget invested in education	Jurisdiction	Investment per public school student (current $)
Buenos Aires	38,6%	Tierra del Fuego	12.883
Santa Fe	35,7%	Santa Cruz	11.970
Jujuy	33,6%	Neuquén	9.185
Corrientes	33,3%	La Pampa	7.815
Río Negro	30,9%	Capital Federal	7.586
Mendoza	30,1%	Chubut	7.205
Chaco	30,1%	Catamarca	6.577
Córdoba	28,9%	Río Negro	5.529
Tierra del Fuego	28,7%	Santa Fe	5.078
Misiones	28,1%	La Rioja	4.993
Neuquén	27,4%	Buenos Aires	4.977
Entre Ríos	27,2%	Jujuy	4.741
Formosa	27,0%	Entre Ríos	4.681
La Pampa	26,7%	San Juan	4.597
Capital Federal	25,7%	Formosa	4.549
Chubut	25,7%	Chaco	4.521
Salta	25,5%	Mendoza	4.399
Catamarca	25,1%	Córdoba	4.191
Tucumán	24,5%	Tucumán	3.877
San Juan	24,1%	San Luis	3.516
La Rioja	23,9%	Santiago del Estero	3.508
Santiago del Estero	21,8%	Corrientes	3.358
San Luis	20,6%	Misiones	3.015
Santa Cruz	18,9%	Salta	2.649
Average	**27,6%**	**Average**	**5.642**
Total	**30,7%**	**Total**	**4.901**

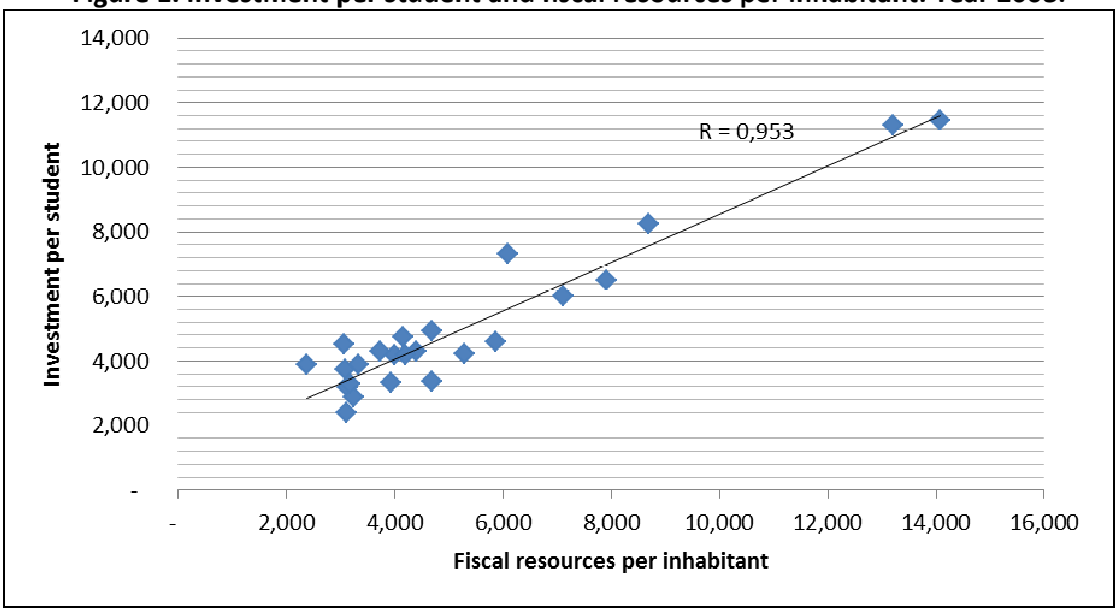
Note: The indicators correspond to expenditure on education, and to the total expenditure on provincial investment (excluding transferences from the national government). The education expenditure in this case includes the resources assigned to science and technique as well.

Source: CIPPEC based on Coordinación General de Estudio de Costos del Sistema Educativo, and the Dirección Nacional de Información y Evaluación de la Calidad Educativa, Ministry of Education; and Dirección Nacional de Coordinación Fiscal con las Provincias, Ministry of Economy and Public Finance.

The possibility of each jurisdiction's investment has a narrow relation with its fiscal capacity, that is to say, to the resources at its disposal. And these capacities too are unequal due to the differences in the levels of regional development and unfair resource distribution of the Federal Tax Co-Participation scheme.

The Co-Participation scheme does not have objective parameters in the definition of its distribution; instead, it is tied to historical political arrangements which benefit some jurisdictions to the detriment of others. As a result, deep inequalities are created in the investment capacity of provinces. Figure 1 shows the positive relation that exists between investment per student and fiscal resources per inhabitant. In 2008, the linear correlation coefficient was 0.95.

Figure 1: Investment per student and fiscal resources per inhabitant. Year 2008.



Source: CIPPEC, based on Coordinación General de Estudio de Costos del Sistema Educativo and Dirección Nacional de Información y Evaluación de la Calidad Educativa, Ministry of Education; and Dirección Nacional de Coordinación Fiscal con las Provincias e INDEC, Ministry of Economy and Public Finance.

Another outcome of inequality in resource availability is that the provinces prejudiced by Co-Participation find themselves making greater effort to sustain or increase investment in the education system. These policy decisions with regard to priorities in public expenditure compensate, to some extent, for the initial inequalities that stem from a structural unsolved problem, i.e., inequality in the enabling of investment.

The solution to this problem is not simple, as the scheme of Argentine federalism imposes strong restrictions on any modification in the allocation of resources. It is at this point that the role of the national government, which is to compensate for part of these inequalities, becomes crucial. The Federal Law of Education, foreseeing this situation, had established the need to rule the contributions to education-related issues by the national government, although the ruling did not finally take place.[4]

NATIONAL FINANCE TO PROVINCES ANALYSIS

In the Argentine education system, the administration of the basic and non-university higher education is allowed to the provincial jurisdictions. In that sense, national education

[4] Article 14 of the Federal Law of Education sets the criteria which should guide the distribution of the National Public Budget resources assigned to provincial education systems. These criteria include: a) proportion of the national enrolment and non-enrolled population aged between 3 and 17, b) percentage of rural education, c) financial capacity, d) financial effort towards education, e) percentage of over-aged students, repetition rate, school leaving, and f) fulfillment of annual goals set in bilateral agreements, planned under the same Law.

policies are channeled through a set of programs that address different actors of the education system: students, teachers, provincial governments.

The national government contributes approximately 32 percent of the consolidated education budget. This percentage has been modified in the last two decades based on the changes in the organization of the Argentine education system, but has been growing in the recent times, especially since the implementation of the Federal Law of Education.

In this report, the analysis of the distribution of the national government resources to the education system will be focused on basic education. It will be centered on the programs of the Ministry of Education at this basic level of education and on the contributions towards school infrastructure by the Ministry of Federal Planning, Public Investment and Services (the program "*More schools, better education"*).

Given the federal organization of the education system, the contributions by the national government are distributed to the provincial education systems through different formats and criteria. Indeed, the different education programs can include explicit or implicit criteria for the distribution of resources between jurisdictions.

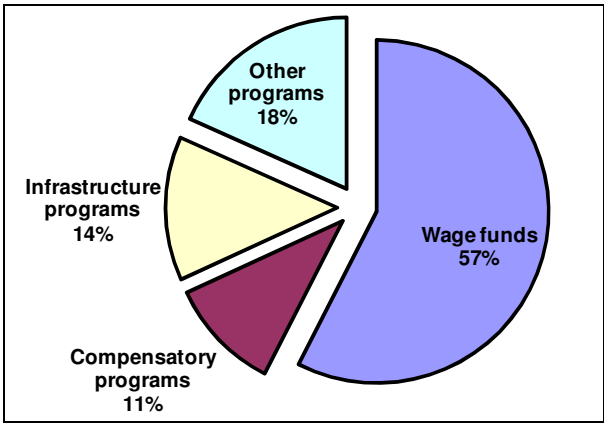
As regards the various present distribution criteria, the proposal in this report is based on the crucial distinction between social and fiscal poverty of the provinces. In both dimensions, schemes with differentiated criteria for national compensation to achieve higher levels of social and fiscal equality between provinces are revealed — in one case, through compensatory programs (criterion of social equality) and in the other through national teachers' wages (criterion of fiscal equality). The infrastructure funds respond to a combination of both these criteria in the proposed formula.

Before explaining the distribution proposal, the findings from the current distribution system will be analyzed. The national education programs, based on their characteristics, magnitude and objectives are classified as follows:

- **Wage funds**: their aim is to complement the teachers' wage. At present, there are two such programs: the National Teacher Incentive Fund (FONID), and the Teachers Wage Compensation Fund (FCS).
- **Compensatory programs**: aimed at reducing the inequalities in education through providing resources to ensure the basic minimum conditions for the development of the educational process. The most important programs are: the National Educational Scholarships Program, the National Program of Educational Inclusion, the Integral Program for Educational Equality and the distribution of books.
- **Infrastructure programs**: address the extension of the supply of education through the construction of new buildings and the financing of minor repairs in the existing buildings. At present there are two programs — one in the sphere of the Ministry of Education (the actions of the National Direction of School Infrastructure) and the other in the sphere of the Ministry of Federal Planning, Public Investment and Services (*More schools, better education*).

- **Other programs:** these include a set of national programs with diverse purposes. The most important is Innovation and Development of Technological Education, administered by the National Fund for Technical and Professional Education.[5]

Figure 2: Distribution of the national educational budget assigned to basic education. Year 2008.



Source: CIPPEC, based on information provided by the Ministry of Economy and Public Finance.

Table 2 shows the actual situation vis-a-vis the distribution of resources of the national educational programs in provincial jurisdictions, expressed as investment per student. In total, the national expenditure in basic education represents 16 percent of provincial expenditure, that is to say, $662 per year per student invested by the national government versus $4.248 of provincial investment (year 2008).

To sum up, the total amount of the three funds is assigned in the following manner:

- **There is no clear prioritization of the national contributions to jurisdictions that invest less per student from their own resources:** This can be observed in the linear correlation coefficient between the national contributions and the levels of provincial educational investments, equal to -0.28, which, though having the expected sign, reach a low value. On the other hand, the four provinces that proportionally receive major national contributions belong to the group that makes middle-level investment.
- **The most populated provinces encounter prejudice when it comes to the distribution of resources**: Córdoba, Santa Fe and Mendoza receive even lower contributions per student than jurisdictions that belong to the group of higher levels of investment.[6]

[5] This fund was created by the Law of Technical and Professional Education in 2005 and comprises approximately 4 percent of the budget of the Ministry of Education. The rest of the educational programs of the national government have lower participation in the budget and include programs related to education management, education quality, teacher education, information systems and transferences to the decentralized organs. In this report, the distribution criteria for these programs have not been defined due to their marginal impact in budgetary terms and the fact that the accomplishment of their objectives and the implementation thereof require greater control of resources by the national government.

[6] Buenos Aires would be in a similar situation if it did not receive extraordinary contributions for teachers' wages.

- **The educational resources benefit the provinces with greater social poverty**: However, there are strong differences depending on the programs (the correlation is very high in compensatory programs and very low or almost non-existent in infrastructure programs).

Table 2: Jurisdictional programs' investment per student. Year 2008.

Jurisdiction	Compensatory programs	Infrastructure	Wage funds	Other programs by the Ministry of Education	Total national funds (2008)	Provincial expenditure (2008)	National as a % of provincial
La Rioja	69	199	411	380	1058	4.271	25%
Entre Ríos	44	58	402	462	965	4.405	22%
Formosa	89	170	337	329	925	4.473	21%
Jujuy	82	170	359	302	913	4.146	22%
San Juan	68	171	347	296	882	3.990	22%
Misiones	72	49	338	389	848	2.649	32%
Sgo del Estero	111	45	300	376	832	3.162	26%
Chaco	77	186	312	224	800	4.512	18%
Tucumán	71	208	292	197	769	3.145	24%
Salta	70	63	265	323	721	2.223	32%
Buenos Aires c/FCS	26	46	310	304	685	3.969	17%
Corrientes	83	57	255	283	679	3.173	21%
La Pampa	65	293	190	110	657	7.576	9%
Tierra del Fuego	27	126	216	261	630	12.726	5%
Catamarca	56	106	166	262	590	6.288	9%
Santa Cruz	25	121	219	199	564	12.302	5%
Neuquén	44	32	202	249	528	8.771	6%
Buenos Aires s/FCS	26	46	135	304	511	3.969	13%
Río Negro	45	105	169	145	464	5.304	9%
Chubut	34	69	148	178	429	7.025	6%
Santa Fe	38	39	136	197	410	4.594	9%
San Luis	46	30	126	200	402	5.192	8%
Mendoza	53	47	127	171	398	3.932	10%
Córdoba	40	68	121	136	365	3.932	9%
TOTAL	**48**	**75**	**255**	**283**	**662**	**4.248**	**16%**
Average	**58**	**107**	**250**	**260**	**675**	**5294**	**16%**
Correlation with poverty	**0,87**	**0,14**	**0,51**	**0,45**	**0,57**	**-0,75**	**0,78**
Correlation with educational invest. per public-school student	**-0,57**	**0,12**	**-0,31**	**-0,28**	**-0,28**	**0,95**	**-0,68**
Correlation with number of inhabitants	**-0,33**	**-0,27**	**0,06**	**0,05**	**-0,08**	**-0,22**	**0,04**

Note: The contributions to Ciudad de Buenos Aires have not been included since it has not been possible to distinguish them from the central expenditure, which are assigned geographically to the same jurisdiction. For correlations, the wage compensation contributions of Buenos Aires Province were taken into account. Investment per student: Low Intermediate High.

Source: CIPPEC, based on information from the *Oficina Nacional de Presupuesto*, Finance Secretariat, Ministry of Economy and Public Finance; *Dirección Nacional de Información y Evaluación de la Calidad Educativa*, Ministry of Education.

In the following sections, each of the categories under national contributions will be analyzed and alternative distribution proposals, aimed at effecting fair allocation between provincial jurisdictions will be proposed. The main objective — which will guide the definition of the distribution criteria — will be to reduce the gaps between jurisdictions in terms of investment per student through the national funds, to benefit the fiscally poorest provinces in teachers' wages and the socially poorest provinces in compensatory programs.

THE WAGE POLICY HELD BY THE NATIONAL GOVERNMENT WAGE FUNDS

The national government participates actively in teachers' wage policy through employing different instruments. At the institutional level, it carries out negotiations (*paritarias*) with the five unions with national representation, in which the minimal wage for teachers, at the time they start their career (as a reference for the rest of the teachers), is set annually. Moreover, the percentage of increase that is arrived at through comparing this amount of wage and the prior year's is usually adopted as an indicator for wage negotiations at the provincial level.

At the financial level, the government assists the provincial jurisdictions by making direct contributions to teachers' salaries, which are channeled through two national programs: the National Teacher Incentive Fund (FONID) and the Teacher Wage Compensation Fund (FCS). FONID, that has been in existence since 1999, covers all the teachers in the country; its original aim was wage recovery.[7] The implementation of FONID implied the involvement of the national government in the payment of teachers' wages, which had previously been exclusive to the provincial level since the decentralization of the education system in the early 1990s. The contribution of FONID to teachers' wages represented approximately 11 percent in 1999, while in 2009 it represented 6.4 percent.[8]

FCS, on the other hand, was created with the purpose of sustaining a minimum wage for all the teachers in the country, and thus to reduce the differences in wages between jurisdictions. These differences had been widening as a result of the economic crisis of 2001, the subsequent recovery and the rise of inflation in the provincial public finances. FCS was created by the Education Finance Law and is given to teachers of provincial jurisdictions that each year fails to arrive at the minimum wage that is set at the national level.[9]

IMPACT ON INTER-PROVINCIAL INEQUALITY

From the time of its creation, FONID has not changed its implementation criteria, though there have been some alterations in the contribution amount. The initial amount was $60 per teaching position and remained in force until 2004, when it began to be increased progressively until it reached $110. Later, in 2007 and 2009, extraordinary FONID installments were issued as an alternative to a nominal increase in the amount. This is when three extraordinary installments were paid. On an annualized calculus, this measure would imply a 25 percent increase, with a witness installment of $137.5.

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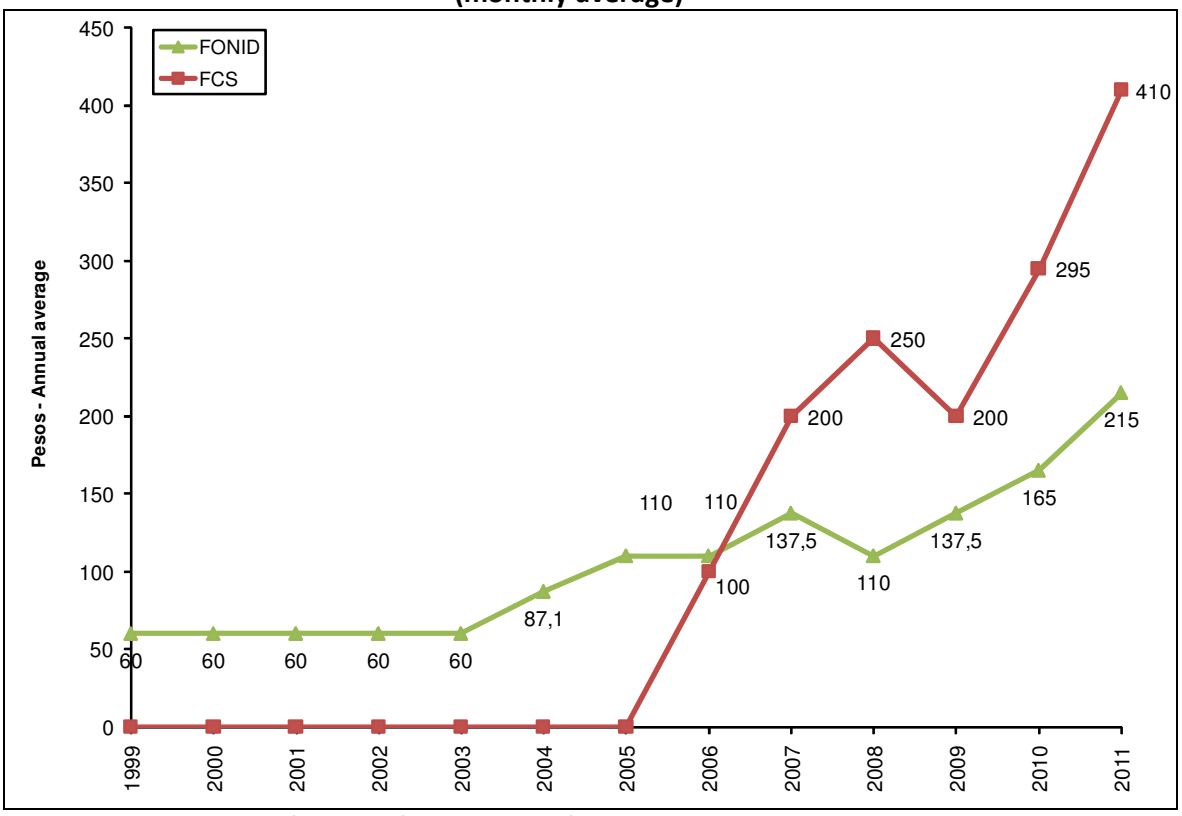
[7] Real teachers' wages had suffered a relevant decrease during the 1980s and 1990s. See CIPPEC (2006).

[8] The initial contribution of FONID was $60 per teaching position, while the average wage for a primary education teacher, who worked 4 hours a day and had 10 years of teaching experience was $558, while in 2009 the average contribution of FONID was $137.5 and the average wage $2152.

[9] FCS was preceded by the provision of financial resources to provinces which had conflicts with teachers and were not in a position to meet their claims in 2004 and 2005. Moreover, a smaller percentage of FONID was also originally distributed as a compensatory measure.

FCS has suffered greater variations, mainly because its amount is established as per the minimum wage fixed at the national level. In theory, the contribution of the FCS is the difference between this minimum wage and the wage paid by the jurisdiction. However, as the contribution is uniform for all the participating jurisdictions, this difference varies for each provincial case. The contribution has been evolving and growing through the years it has been in force (including the earlier contributions before the formal creation of the fund), for each teaching position.

Figure 3: Contributions per teaching position by the national wage funds (monthly average)



Source: CIPPEC, based on information from *Coordinación General de Estudios de Costos del Sistema Educativo*, Ministry of Education.

Given the distinct features of the two national funds, their impact on wage inequality is different. As has been mentioned, FONID did not originally have compensatory aims, though it has an impact on wage inequality because being a fixed amount which is uniform at the national level, the contribution is more significant in jurisdictions with lower wages. FCS, on the other hand, has greater impact because it is exclusively targeted at jurisdictions whose teachers have the lowest salaries, thus generating an upward leveling.

There are several ways of measuring inequality between jurisdictional wages. In this report, a simple measure will be employed: the relationship between the average wage of the six

jurisdictions whose wages are highest and the six jurisdictions whose wages are lowest; in other words, the "wage gap."[10] This indicator enables an intuitive understanding of the effects of national policies on inter-provincial wage inequality.[11]

The starting point to evaluate the impact on wage inequality is the value that the wage gap adopts before the national intervention. This value is 1.93, which means that if we were to arrange the jurisdictions in ascending order according to the witness teacher's wage that they pay, the average wage of the first six provinces almost doubles that of the last six jurisdictions (Table 3).

When FONID contributions are added to the provincial wages, the gap sees itself reduced to 1.85, that is to say, FONID manages to reduce gaps by a 4 percent. On the other hand, when the FCS contributions are taken into account (irrespective of FONID), the gap sees itself reduced to 1.76 — a 9 percent decrease. Finally, the combined effect of national wage funds leads to a 12 percent reduction in the gap, the indicator being 1.70.

Table 3: Impact of the national funds on wage inequality. Year 2008.

Indicator	Provincial wages	+ FONID ($110)	+ FCS ($250)	Final wages
Average - 6 jurisdictions with highest wages	$ 2.914	$ 2.987	$ 2.914	$ 3.024
Average - 6 jurisdictions with lowest wages	$ 1.289	$ 1.399	$ 1.508	$ 1.618
Gap	2,26	2,14	1,93	1,87

Source: CIPPEC, based on information from *Coordinación General de Estudio de Costos del Sistema Educativo*, Ministry of Education.

It is worth mentioning here that in the present report, the analysis concentrates on the inequalities which are verified between jurisdictions, and which have to be analyzed taking into account certain other dimensions such as different teaching roles, criteria that define the teaching profession and the wage increase, the geographical location of teachers' place of work, etc.

[10] In every case we will use, as witness case, the wage of a primary education teacher who works part-time (4 hours per day) and has 10 years of teaching experience.

[11] This inequality indicator presents a weak point; it does not take into account the information about all jurisdictions. A second inequality indicator, which avoids this inconvenient fact is the variation coefficient (VC), which will be shown in tables so as to allow comparisons with the first one.

Box 1: Evaluation of the wage funds of the Ministry of Education

FONID and FCS have been created in different contexts and with specific objectives; thus, they present important differences which lead to each of them having its own advantages and difficulties.

In the case of FONID, one of its strengths is its legitimacy among teachers since the time of its creation. It represents a historical achievement by teachers' unions and, therefore, has been in force for more than 10 years.

Secondly, as a sectorial policy, FONID has the advantage of being identified as the national government's contribution to teachers, thus allowing governments to distinguish between teachers and other public employees in wage negotiations.

Among its disadvantages, the main one is that being a contribution that is uniform for all teachers, regardless of the jurisdiction to which they belong, it does not allow the national government to use the program with aims other than the fund's initial aim, which is to strengthen the teachers' salaries. The problem, however, is that this objective was more relevant in a different context (like in the year 1998, with depreciated wages), and is not that relevant at present, when FONID contributions represent a smaller portion of the wages (for example, in Santa Cruz or Tierra del Fuego).

As for FCS, its advantage arises in opposition to FONID, given the fact that it is executed in a group of provinces, thus allowing the national government to compensate for inequality situations. Besides, from the very beginning there is evidence of its greater flexibility in terms of the definition of contributions and the participation of jurisdictions.

The weakness of FCS lies in the fact that it lacks regulation, which potentially allows for discretionary practices in its administration. Analyzing its present criteria, a structural problem inherent in FCS is that it operates over a given situation, helping the provinces that are not able to reach a minimum wage, but fails to stem the roots of such a situation, which has to do with the availability of resources and the efforts by the jurisdictions.

However, FCS has, at present, a more important effect on wages, which could improve if it complied with the regulations imposed by the Education Finance Law, which has not happened yet; besides, in 2009 FCS was rendered weak, given an increase in FONID's resources — a behavior which seems to have been legitimized in the national negotiation held in 2010.

The emergence of the inflationary phenomenon in the previous years opened up the opportunity to reduce FONID without having to go through the political negotiation related to its adjustment or elimination, since a potential freeze on the contribution per teaching position would have implied a decrease in its real value, liberating the resources to increase FCS. The funds behaved this way starting 2006 but the trend was broken in 2009 and 2010, signifying a step backward in the general strategy of compensation for inequality.

ALTERNATIVE WAGE DISTRIBUTION SCHEMES

Among the structural problems presented by educational finance in Argentina are the significant disparities between provincial jurisdictions. In matters of educational finance, jurisdictions encounter inequality both in terms of the level of investment per student as well as the financial effort towards education — two areas where deep differences exist across the country.

The national government has a decisive role to play in the reduction of these inequalities, and to accomplish this goal, the resources it invests must consider compensation as a main dimension. It is important that this criterion is present in the distribution of wage contributions, since at present they constitute the greatest national basic education program: approximately 26 percent according to the 2010 National Public Administration budget.

The justice criterion of the present FCS is based on the reduction of the difference in teachers' wages that jurisdictions effectively pay. However, the level of teachers' wages does not depend exclusively on the fiscal possibilities of the provinces concerned; rather, other politics-related variables play a part, such as the size of the educational budget, the coverage levels, the number of teachers per student, wage composition, the percentage of school-age population, the proportion of students who assist in private schools, etc.

In this section, we present an alternative distribution scheme for national wage funds based mainly on the fiscal capacities of jurisdictions and the effort they expend on education, that is to say, the structural conditions of education finance.[12] One must bear in mind the fact that the proposed scheme is conceived on the basis of the present programs, and hence it proposes a different way of distributing resources, with no altering of the type of intervention nor the total amount of resources available.

First of all, it is necessary to define the total amount based on which simulations are carried out. This comes from the final execution of wage funds projected in 2009, to which a special transference for Buenos Aires Province, equivalent to the amount transferred in 2008, is added.[13] The resulting amount is approximately $2,940 million, calculated as follows:

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[12] As shown in Figure 1, the fiscal capacity of provinces determines whether educational investments are possible in jurisdictions, thus making up the structural cause of educational inequalities in general and, specifically, in provincial teachers' wages (the wage component is the main area addressed by educational investment).

[13] The alternative distributions for wage programs presented in this section do not take into account just the total resources of the year 2009, but start from FONID and FCS amounts in force during that year. Recently, a new increase in FONID has been effected, which means a step backward in terms of the objectives related to the compensation of the national contributions. Given that this objective is one of the central axes of our proposal, we have chosen to maintain the 2009 situation in the analysis of the alternatives, although the political viability of scenarios might be reduced in the face of the recent arrangements.

Projected execution FONID 2009	$	1,814,938,364
Projected execution FCS 2009	$	479,857,514
Transference to Buenos Aires Prov. 2008	$	648,000,000
TOTAL:	$	2,942,795,878

The proposal establishes an *inclusion* criterion to define which jurisdictions would receive the fund, and another criterion to define the *distribution* of these resources between provinces. The *first criterion* is related to the resources available to each jurisdiction, that is to say, the eligibility criterion for the inclusion of a jurisdiction in the program is its fiscal situation, expressed in the fiscal resources available to each school-age child.

The *second criterion* defines the distribution of resources between the selected jurisdictions. It is proposed that the amount of the contribution per teaching position adjusts in each province taking into account two variables: fiscal resources per school-age child and the proportion of expenditure assigned to the education sector. That is to say, each jurisdiction will receive a higher contribution based on less fiscal resources at its disposal and its greater budgetary effort towards education. This formula combines a distributive justice criterion with higher incentive for channeling greater efforts into education.

Table 4 presents a set of fiscal and education finance indicators for all the 23 provinces and Ciudad de Buenos Aires, which will be employed in the simulations.

Table 4: Indicators by jurisdiction. Year 2008.

	Jurisdiction	Fiscal resources per school-age inhabitant	Coparticipation resources per inhabitant	Educational expenditure per student of public schools	Provincia expenditure assigned to the educational sector	Provincial wages
Priority 1	Misiones	7.393	2.203,44	2.648,96	27%	1.176,51
	Salta	7.505	2.222,14	2.223,41	22%	1.282,52
	Corrientes	7.819	2.589,98	3.172,77	31%	1.212,16
	Buenos Aires	8.045	924,99	3.968,80	39%	1.688,93
	Tucumán	8.892	2.223,05	3.144,62	24%	1.416,67
	Santiago del Estero	9.369	3.273,74	3.162,22	21%	1.323,22
	Jujuy	9.692	2.917,43	4.146,27	35%	1.460,02
	Chaco	10.336	3.237,96	4.512,04	32%	1.645,00
Priority 2	Mendoza	10.385	1.664,02	3.931,83	30%	1.534,14
	Córdoba	10.431	1.811,10	3.932,18	30%	2.273,01
	Santa Fe	10.515	1.898,70	4.593,61	35%	1.947,51
	Entre Ríos	11.845	2.666,54	4.404,57	30%	1.646,94
	Formosa	11.951	4.603,18	4.473,49	30%	1.143,81
	San Juan	12.209	3.286,19	3.990,41	27%	1.551,36
Other jurisdictions	San Luis	13.183	3.615,46	5.191,57	25%	1.875,83
	Río Negro	13.865	2.895,97	5.303,92	31%	1.551,48
	La Rioja	15.462	4.187,87	4.271,33	27%	1.254,41
	Catamarca	18.493	4.805,58	6.287,82	23%	1.794,01
	La Pampa	19.231	3.883,88	7.576,43	26%	2.268,87
	Chubut	23.527	2.524,45	7.025,48	29%	2.084,90
	Neuquén	24.914	2.301,99	8.770,96	27%	2.154,83
	Ciudad de Buenos Aires	25.254	440,56	5.196,64	27%	1.718,38
	Tierra del Fuego	31.334	7.086,13	12.726,29	27%	3.235,95
	Santa Cruz	38.267	5.132,31	12.301,50	18%	3.946,75
	Average - 24 jurisdictions	**14.997**	**3.017**	**5.290**	**28%**	**1.799**

Source: CIPPEC, based on information provided by the Dirección Nacional de Coordinación Fiscal con las Provincias e Instituto Nacional de Estadísticas y Censos, Ministry of Economy and Public Finance; the Dirección

Nacional de Información y Evaluación de la Calidad Educativa and the Coordinación General de Estudio de Costos del Sistema Educativo, Ministry of Education.

At present, there is participation of 11 jurisdictions in FCS, and we can add Buenos Aires Province, since it has been receiving extraordinary help, from 2007 onwards, from the National Ministry of Education to finance the teachers' salaries.

The first exercise consists of the application of the selected criterion, mentioned above, to define a set of 12 jurisdictions, the number of provinces that at present participate in FCS. The initial result of this calculus is that there are three jurisdictions which at present are not in the Fund and which should receive contributions: Córdoba, Mendoza and Santa Fe. Then there are three other jurisdictions that should cease being part of the Fund: Formosa, La Rioja and San Juan (Table 4).

The scheme proposed in this report, for the allocation of the wage funds, expands the number of participating jurisdictions to 14**,** allowing two of the three jurisdictions which would be excluded in the 12-jurisdiction scenario — as is done at present — to remain (the third one, La Rioja, has a relatively high level of fiscal resources). In an ideal scenario, we propose that these jurisdictions receive the entire fund amount, i.e. the FONID and FCS resources, from the national government. However, the selected jurisdictions would be divided into *two groups*: the eight with less fiscal resources per school-age child will receive 75 percent of the total fund, while the remaining six will establish two priority groups (Priority 1 and Priority 2) for national compensation.

This criterion excludes 10 provinces from receiving the national government wage contributions. This decision is rooted in the main objective of the proposed scheme, i.e. to reduce the structural problems that determine the inequalities in teachers' wages. Thus, it is necessary to prioritize the national investment in jurisdictions with low fiscal capacity, as the ones with more resources at their disposal are capable of complying with the teachers' wage structure, and also of absorbing the shortfall from the contributions which they would cease to receive (FONID).

There are significant differences in the resources received by each of the two groups within the selected set of jurisdictions. The aim here is to increase the proposal's compensating effect in an environment of inequality. Moreover, from an operative and political viability-related point of view this division seems possible due to the fact that five of the six jurisdictions which would receive the smallest contributions are the mentioned groups of jurisdictions that were not part of the Fund but should enter it (Córdoba, Mendoza and Santa Fe) and the ones that should exit the FCS but were not excluded due to the expansion from 12 to 14 jurisdictions (Formosa and San Juan).

Table 5 presents the proposed ideal Scheme A. The results shown are derived from the application of the criteria as described above. However, one must bear in mind that provincial jurisdictions are likely to react to this change in the distribution of the contributions. These reactions might generate changes in the proposal, such as a possible increase in the number of provinces which receive fewer contributions, so as to retain the amount of provincial teachers' wage, or be able to receive bigger contributions in the case

of a more elevated effort. To sum up, the teachers' wages' final situation and inequalities between jurisdictions will be the result of the changes in the distribution of resources decided by the National Government and the reaction of the jurisdictions facing these changes.

Table 5: Scheme A for the distribution of national wage funds (FONID eliminated, FCS extended to 14 jurisdictions)

Distribution formula: 1) funds are distributed among the 14 jurisdictions with less fiscal resources per school-age child, 2) inside this group, the first eight jurisdictions receive 75% of the resources, and the remaining six receive 25%, c) the distribution formula is applied over an equal number of teaching positions in each jurisdiction, adjusted by fiscal resources available per school-age child and the financial effort allocated to education.

	Present situation				Simulation		Difference
Jurisdiction	Monthly amount per position (FONID)	Monthly amount per position (FCS)	Monthly amount per position	Total (FONID + FC)	FC	Monthly amount per position	Monthly amount per position
Buenos Aires**	137,5	170	307,5	1.303.086.842	1.556.931.894	408,9	101,4
Corrientes	137,5	200	337,5	81.675.101	96.968.777	374,9	37,4
Jujuy	137,5	200	337,5	75.567.278	79.655.522	355,6	18,1
Misiones	137,5	200	337,5	116.444.770	108.588.259	364,5	27,0
Chaco	137,5	200	337,5	105.167.889	108.277.597	330,6	-6,9
Salta	137,5	200	337,5	102.056.094	91.313.449	334,3	-3,2
Tucumán	137,5	200	337,5	114.743.995	101.608.060	310,2	-27,3
Santa Fe	137,5	-	137,5	133.613.739	229.496.465	288,3	150,8
Sgo del Estero	137,5	200	337,5	75.496.592	63.753.351	286,9	-50,6
Mendoza	137,5	-	137,5	70.923.544	111.651.259	267,1	129,6
Córdoba	137,5	-	137,5	128.378.649	201.704.197	267,0	129,5
Entre Ríos	137,5	200	337,5	131.623.014	105.053.013	251,7	-85,8
Formosa	137,5	200	337,5	69.457.408	47.147.219	251,2	-86,3
San Juan	137,5	200	337,5	59.039.629	40.646.817	233,0	-104,5
Catamarca	137,5	-	137,5	26.160.355	-	-	-137,5
Chubut	137,5	-	137,5	26.195.679	-	-	-137,5
CABA	137,5	-	137,5	133.256.221	-	-	-137,5
La Pampa	137,5	-	137,5	17.831.723	-	-	-137,5
La Rioja	137,5	200	337,5	42.550.567	-	-	-337,5
Neuquén	137,5	-	137,5	42.262.834	-	-	-137,5
Río Negro	137,5	-	137,5	36.654.094	-	-	-137,5
San Luis	137,5	-	137,5	18.507.485	-	-	-137,5
Santa Cruz	137,5	-	137,5	20.307.786	-	-	-137,5
Tierra del Fuego	137,5	-	137,5	11.794.592	-	-	-137,5
TOTAL				**2.942.795.878**	**2.942.795.878**		

Source: CIPPEC, based on information provided by the Coordinación General de Estudios de Costos del Sistema Educativo, Ministry of Education and by the Ministry of Economy and Public Finance.

The proposed scheme implies significant alterations to the present system of allocation of the wage funds; hence one cannot ignore the fact that its political viability is limited, mainly due to the already existing social representation of FONID. The fund is seen as a conqueror by the teachers' unions, with the exclusion of some jurisdictions from the wage contributions and the decrease in the total contribution amount in some cases (in view of

the inclusion of the most populated provinces). However, the main objective of this exercise is to set out an ideal model that is able to orient itself along the design of more viable distribution models.

So, an additional scheme, which tries to take into account some of these problems, is presented, without intending it to be a final solution to a complex issue such as the change of these national programs. The new Scheme B can be understood as a more flexible or viable model than the original proposal (A).

Scheme B results from applying the same criteria as that in Scheme A, but while maintaining the previous FONID contribution to the 10 jurisdictions which would not participate in the original distribution.[14] This change allows all the jurisdictions to be included in the national contributions (as is the case at present) but decreases the total amount of fund subject to distribution for compensatory purposes.

Table 6: Scheme B for the distribution of national wage funds (FONID eliminated, FCS extended to 14 jurisdictions)

Distribution formula: 1) funds are distributed among the 14 jurisdictions with less fiscal resources per school-age child, but if the remaining 10 jurisdictions receive a contribution equivalent to the present FONID, 2) in this group, the first eight jurisdictions receive 75% of the resources, and the remaining 6 receive 25%, c) the distribution formula is applied over an equal number of teaching positions in each jurisdiction, adjusted by the fiscal resources available per school-age child and the financial effort towards education.

[14] The proposed simulation has taken as a basis the FONID amount per teaching position in force during the year 2009, which, on an average, reached $137.5 per month. At the beginnings of 2010 an increase in FONID was effected, which took this amount up to $165 per teaching position, which would modify the distribution presented here, given that the total resources assigned to wage contributions remain fixed.

	Present situation				Simulation		Difference
Jurisdiction	Monthly amount per position (FONID)	Monthly amount per position (FCS)	Monthly amount per position	Total (FONID + FC)	FC	Monthly amount per position	Monthly amount per position
Buenos Aires**	137,5	170	307,5	1.303.086.842	1.411.836.897	370,8	63,3
Corrientes	137,5	200	337,5	81.675.101	87.931.975	339,9	2,4
Jujuy	137,5	200	337,5	75.567.278	72.232.193	322,5	-15,0
Misiones	137,5	200	337,5	116.444.770	98.468.605	330,5	-7,0
Chaco	137,5	200	337,5	105.167.889	98.186.894	299,8	-37,7
Salta	137,5	200	337,5	102.056.094	82.803.684	303,2	-34,3
Tucumán	137,5	200	337,5	114.743.995	92.138.910	281,3	-56,2
Santa Fe	137,5	0	137,5	133.613.739	208.109.024	261,4	123,9
Sgo del Estero	137,5	200	337,5	75.496.592	57.811.991	260,1	-77,4
Mendoza	137,5	0	137,5	70.923.544	101.246.154	242,2	104,7
Córdoba	137,5	0	137,5	128.378.649	182.906.798	242,1	104,6
Entre Ríos	137,5	200	337,5	131.623.014	95.262.818	228,3	-109,2
Formosa	137,5	200	337,5	69.457.408	42.753.433	227,8	-109,7
San Juan	137,5	200	337,5	59.039.629	36.858.822	211,3	-126,2
Catamarca	137,5	0	137,5	26.160.355	19.229.230	110,0	-27,5
Chubut	137,5	0	137,5	26.195.679	19.768.864	110,0	-27,5
CABA	137,5	0	137,5	133.256.221	105.529.927	110,0	-27,5
La Pampa	137,5	0	137,5	17.831.723	14.171.373	110,0	-27,5
La Rioja	137,5	200	337,5	42.550.567	16.771.675	110,0	-227,5
Neuquén	137,5	0	137,5	42.262.834	31.821.044	110,0	-27,5
Río Negro	137,5	0	137,5	36.654.094	28.670.116	110,0	-27,5
San Luis	137,5	0	137,5	18.507.485	14.322.286	110,0	-27,5
Santa Cruz	137,5	0	137,5	20.307.786	15.209.872	110,0	-27,5
Tierra del Fuego	137,5	0	137,5	11.794.592	8.753.292	110,0	-27,5
TOTAL				**2.942.795.878**	**2.942.795.878**		

Source: CIPPEC, based on information provided by the Coordinación General de Estudios de Costos del Sistema Educativo, Ministry of Education and Ministry of Economy and Public Finance.

To sum up, we have presented two schemes that modify the present system of wage fund distribution by the national government: an ideal alternative (Scheme A) and a proposal that makes the first one more flexible (Scheme B). Table 7 shows the impact that each scheme has on teachers' wages. Moreover, it includes variations in wage inequality that stem from the application of the proposals.

Table 7: Impact of the proposed wage schemes on teachers' wages

Jurisdiction	Provincial wage	Provincial wage + FONID	Provincial wage + FCS	Present wage	Proposed Scenario A (ideal)	Scenario B (viable)
Buenos Aires	2.039	2.176	2.039	2.176	2.447	2.409
Catamarca	2.002	2.140	2.002	2.140	2.002	2.112
Chaco	2.165	2.302	2.365	2.502	2.495	2.465
Chubut	2.602	2.740	2.602	2.740	2.602	2.712
CABA	2.104	2.241	2.104	2.241	2.104	2.214
Córdoba	2.612	2.749	2.612	2.749	2.879	2.854
Corrientes	1.476	1.613	1.676	1.813	1.851	1.816
Entre Ríos	1.855	1.992	2.055	2.192	2.107	2.083
Formosa	1.404	1.541	1.604	1.741	1.655	1.632
Jujuy	1.805	1.943	2.005	2.143	2.161	2.128
La Pampa	2.658	2.795	2.658	2.795	2.658	2.768
La Rioja	1.854	1.991	2.054	2.191	1.854	1.964
Mendoza	1.743	1.880	1.743	1.880	2.010	1.985
Misiones	1.488	1.625	1.688	1.825	1.852	1.818
Neuquén	2.624	2.762	2.624	2.762	2.624	2.734
Río Negro	1.829	1.966	1.829	1.966	1.829	1.939
Salta	1.704	1.842	1.904	2.042	2.038	2.007
San Juan	1.887	2.025	2.087	2.225	2.120	2.098
San Luis	2.283	2.421	2.283	2.421	2.283	2.393
Santa Cruz	4.235	4.373	4.235	4.373	4.235	4.345
Santa Fe	2.431	2.568	2.431	2.568	2.719	2.692
Santiago del Estero	1.574	1.711	1.774	1.911	1.861	1.834
Tierra del Fuego	3.385	3.523	3.385	3.523	3.385	3.495
Tucumán	1.900	2.038	2.100	2.238	2.210	2.181
Gap	**1,93**	**1,85**	**1,76**	**1,70**	**1,70**	**1,72**
Correlation with fiscal resources per inhabitant	**0,81**	**0,81**	**0,82**	**0,82**	**0,72**	**0,77**

Source: CIPPEC, based on information from the Coordinación General de Estudios de Costos del Sistema Educativo, Ministry of Education and Ministry of Economy and Public Finance.

Our first conclusion is that the present fund distribution system is effective if its purpose is to reduce the present wages as paid by the jurisdictions — with the gap being reduced from 1.93 to 1.70. The impact in terms of this decrease in inequality is similar to that of the proposed Scheme A. This is in line with the expected result because the aim of the present FCS is precisely to distribute the resources among jurisdictions that pay lower salaries. In this sense, the gap could diminish even further if FONID were to be eliminated and all national resources were distributed in accordance with the present FCS scheme.

However, the purpose of the simulations proposed in this report has not been to reduce the current wage inequalities, but their causes, which means a reduction in the inequalities in the fiscal resources per inhabitant as well as in the financial effort that goes into education. Even so, the outcome of the implementation of this scheme is expected to be a decrease in wage inequalities, since the proposal also includes incentives to increase the investment in education for the jurisdictions whose financial effort toward education is lower.

An additional indicator has been incorporated into this table: the extant linear correlation between teachers' wages and the fiscal resources per school-age child, which is what eventually defines each jurisdiction's investment capacity. This indicator allows one to see that teachers' wages, following the national government intervention maintain the same

original relationship with the fiscal capacity of the jurisdictions (a linear correlation of 0.82). That is to say, the distribution of wage funds by the national government acts over how much wages are effectively paid, but does not address the root of the problem, i.e. the fiscal capacity of the provinces to pay these wages**.** Instead, in both the proposed schemes the relationship between wages and resources is reduced, i.e. they have a compensatory effect on the fiscal capacities of the provinces**.** The maximum compensation level is achieved through the Scheme A.

Based on the result of the simulations and the analysis of the impact of each scheme, it can be concluded that in the sphere of policy implementation, there is tension between the effectiveness of the new scheme (always in relation to the main purpose, which is to reduce the inequalities in provincial investment) and its political viability, because as the scheme becomes more flexible the impact is reduced.

The accomplishment of a fairer distribution of national resources entails complex negotiation and strong educational policy decisions. The final result will emerge from a particular combination of the purposes and viability of the new scheme. The purpose of this analysis is to make this tension evident and to provide elements that allow a better understanding of the alternatives to meet this challenge.

Box 2: Summary of the advantages and disadvantages of national contributions to the teachers' wage distribution proposal

Advantages:

-The proposal is based on the root cause of inequalities vis-a-vis the provincial fiscal capacities, and not on results (effective wages). This enables the elimination of the incentives to provinces for adopting a strategic budgetary behavior in accordance with the eligibility criteria for national contributions.
-It incorporates objective criteria for the inclusion of jurisdictions in the contributions and for fair distribution of resources among them, thus avoiding potential discretionary practices and the periodic re-negotiation of contributions.
-The amount of contribution per teacher is not uniform in all jurisdictions, which allows greater support to teachers belonging to jurisdictions that have higher fiscal needs.
-In the medium run, it is to be expected that some decisions will be modified with regard to investment by provinces, resulting in a scenario with more homogeneous financial efforts towards education, thus improving the provinces' fiscal sustainability.

Challenges and weaknesses of the proposal:

-It is based on a reduction or suppression of FONID, which implies a challenge in terms of its political viability with unions and potentially affected provinces. In its ideal version, a group of 10 jurisdictions do not participate in any of the contributions of the national government, a fact that undermines its viability. For this reason, a second, more viable Scheme B is presented.
-Given that no increase is affected over the total investment of funds, the inclusion of big provinces in the scheme (Córdoba, Santa Fe, Mendoza and the formalization of the inclusion of Buenos Aires) reduces, in general, the contributions per teaching position in relation to what is paid at present. This is fairer but less viable, due to their low political representation in Congress.
-The proposal maintains the distribution scheme per teaching position, which might undermine its flexibility in pursuing other objectives in terms of wage policy.

EFFECTS OF TEACHERS' SALARY ON EQUITY AND EDUCATION OUTCOMES

We have already discussed the distribution of wage contribution programs of the national government and proposed a scheme that redistributes the funds to provinces based on three variables: teachers' wages, per capita fiscal revenue, and the percentage of budget allocated to education.

This scheme achieves two goals simultaneously: *one,* it equalizes the per-student investment between the provinces; *two,* it tends to equalize provincial wages and consequently, creates conditions for a more equitable income distribution among teachers. Also, by including the financial effort for education in the distribution formula as one of the variables considered for being allowed larger national contributions, an incentive is created for provincial governments to increase investment in education.

This section is aimed at demonstrating the reasons as to why teachers' income is a key element in guaranteeing quality and equity in education. Additionally, we will also establish a relationship between teachers' wages and the evaluation results — an important element in the quality of an education system.

To begin with, we will study the existing literature on factors associated with both academic and non-academic achievement, and research on educational policy implemented by the most successful systems of education. After demonstrating that certain characteristics of teachers and schooling time are associated with better educational levels, we will analyze the relationship between these two variables and teachers' salaries. Specifically, we will focus on the personal traits of teachers, what motivates them to teach, and the days lost to teachers' strikes.

This is a politically sensitive issue in the Argentine system of education, in which the discussions lack support in terms of objective information, often resulting in disagreements and teachers' strikes, leading to a reduction in the number of class days. This study will shed some light on this subject.

Vast literature has been developed in Argentina and Latin America on factors associated with achievement, on the basis of the results from evaluations: First and Second Comparative Regional Study by the Latin-American Laboratory of Educational Quality Evaluation (UNESCO), PISA evaluations, and quality evaluations carried out by certain countries in the region. PISA shows, in all its editions, a correlation between greater equality and higher quality in education. Countries with smallest inequality gaps in their education systems tend to have better results than more unequal countries, even when controlling the socio-economic level and income (OCDE, 2003, 2006, 2010a). UNESCO's SERCE assessments for Latin America arrive at the same conclusion (OREALC, 2008).

Mourshed, Chijioke and Barber (2010) demonstrated that countries which have improved teachers' wages achieve better results in education; this, after visiting 20 international experiences of educational quality improvement, in the framework of one of the empirically in-depth comparative research works carried out till date.

Recent comparative studies on the relationship between social and educational inequalities show that countries where the income gap is lower have better results in terms of quality and equity. A factor contributing to these more equitable results is equality in teachers' wages (Mons, 2008; Dubet, Duru-Bellat and Vérétout, 2010)

This seems to be especially true at the macro level when comparing nations. More equal education systems in more equal societies promote common teaching standards which yield better results globally than countries with greater social and/or educational inequalities. In this context, greater equality in teachers' wages is a key factor.

However, this is not necessarily the case at the micro level of schools, where differential payments to teachers may yield better results. Experiences that support (Bunco Mundial 2011; Handshake and Woman 2007) and reject this (Hargreaves and Shirley, 2009;

Handshake and Woman, 2007) both exist. Everything seems to depend on the incentives model and the context in which the implementation takes place.

This paper in any case proposes macro-level equity in teachers' wages, that is to say, among teachers who work in different provinces and receive different salaries, not as an explicit incentive to bring about improvement but because of inter-regional inequalities. In this sense, greater equality in salaries is proposed as part of a set of policies aimed at reducing the supply gaps in the education system; this, according to international research is known to produce positive effects on equity and quality in the field of education.

A consensus was reached that the most influential factor in the evaluation results is the socio-economic level of students' families. Some of the factors highlighted are related to the quality of teachers, socio-economic integration in classrooms and schools, and to schooling time.

TEACHERS´ SALARIES AND SCHOOLING TIME

International research has demonstrated that the longer the schooling time, the better the quality of education; for example, Fuller and Clarke (1994). Evaluations done by PISA and UNESCO, in over 75 countries have shown that schooling time is among the three most closely related variables to learning achievement, along with school environment and socio-economic integration in schools and classrooms.

Interaction between teachers' unions and the national and provincial governments is a prerequisite for the normal functioning of Argentina's education system. Conflict often translates into days of school lost due to strikes. Although there are differences in demands by each union, increase in salary prevails as the main one.

There is a positive relation between days of school and evaluation results. We will now evaluate if salary and increases in salary have any role in the number of school days lost due to teachers' strike. It will allow us to relate salaries with education results.

From 2002 to 2008, provinces had an average of nine days lost per year, with significant disparities in each case. Table 8 shows the correlation between days of strike and salary increase for each year during the period 2002 to 2008. Differences prevail depending on where the province stands in terms of the salary scale. In provinces with lower salaries, higher increases resulted in fewer days of strike. In contrast, provinces with higher salaries witnessed more days of strike when the increases were higher.

Negative and significant correlations indicate that teachers are less likely to go on strike when they get higher salary increases. Where this correlation does not exist, two explanations are possible: first, higher increases may be a result of long periods of conflict, with many days of school lost. Second, strikes may be related to non-salary demands, such as regularity. Nonetheless, we cannot disregard an irrational behavior of teachers' unions. We still fall short in the explanation of certain political variables such as the negotiation

process between governments and unions, which are needed for a better understanding of this issue.

Table 8: Correlation between salary increase and school days lost due to strikes

Jurisdiction	Average provincial wage 2002-2008	Correlation between wage growth and day lost to strike Average 2002-2008
Misiones	857	-0,23
Formosa	858	-0,43
Salta	920	0,39
Corrientes	924	0,30
Tucumán	943	-0,70
La Rioja	950	-0,01
Buenos Aires	966	-0,24
Mendoza	967	0,67
Rio Negro	967	0,02
Chaco	996	0,05
Entre Rios	996	-0,60
Jujuy	1.000	-0,69
Ciudad de Buenos Aires	1.037	0,47
S. del Estero	1.039	0,21
San Juan	1.068	-0,42
Santa Fe	1.121	0,73
San Luis	1.151	0,36
Catamarca	1.195	0,07
La Pampa	1.218	0,11
Neuquen	1.279	0,34
Chubut	1.291	-0,20
Cordoba	1.333	0,34
T. del Fuego	1.807	0,66
Santa Cruz	1.873	0,51
Negative correlation	No correlation	Positive correlation

Source: CIPPEC, based on information from the *Coordinación General de Estudios de Costos del Sistema Educativo*, Ministry.

The new criteria proposed for the distribution of funds would improve the teachers' salary according to the percentage of education expenditures in the budget, eventually resulting in better income distribution. Table 9 shows that the alternative scheme would increase the salary by over 4 percent in the four biggest provinces, which account for 55 percent of the teachers; it would reduce the salaries by over 4 percent for 10 percent of the teachers, and would not significantly affect the salary of the remaining 35 percent of the teachers.

Table 9: Impact of the proposed scheme

Jurisdiction	Present wage	Wages Scenario B (viable)	Wage variation	Percentage of teachers
Buenos Aires	2.176	2.409	11%	55%
Mendoza	1.880	1.985	6%	
Santa Fe	2.568	2.692	5%	
Córdoba	2.749	2.854	4%	
Corrientes	1.813	1.816	0%	35%
Misiones	1.825	1.818	0%	
Santa Cruz	4.373	4.345	-1%	
Jujuy	2.143	2.128	-1%	
Tierra del Fuego	3.523	3.495	-1%	
La Pampa	2.795	2.768	-1%	
Neuquén	2.762	2.734	-1%	
Chubut	2.740	2.712	-1%	
San Luis	2.421	2.393	-1%	
CABA	2.241	2.214	-1%	
Catamarca	2.140	2.112	-1%	
Río Negro	1.966	1.939	-1%	
Chaco	2.502	2.465	-2%	
Salta	2.042	2.007	-2%	
Tucumán	2.238	2.181	-3%	
Santiago del Estero	1.911	1.834	-4%	10%
Entre Ríos	2.192	2.083	-5%	
San Juan	2.225	2.098	-6%	
Formosa	1.741	1.632	-6%	
La Rioja	2.191	1.964	-10%	

Source: CIPPEC, based on information from the Coordinación General de Estudios de Costos del Sistema Educativo, Ministry of Education.

This scheme, which suppresses an element of discretion in the distribution of national resources, helps achieve higher levels of equity in teachers' wages across the different geographical regions, thus engendering greater distributive justice. Hence, all the provinces are offering more equitable wages, without discriminating against teachers on the basis of their place of residence.

Moreover, improvement in the wages of over 50 percent of the teachers in the country can be achieved with this scheme. As already stated, this is one of the elements that is more closely associated with better educational results, according to a set of international studies (Mourshed, Chijioke and Barber, 2010).

In addition, the new scheme helps boost educational investment in all the provinces that would receive lower contributions. All of them are included in the fund, have more resources per inhabitant compared to the provinces that benefited and have an incentive for increasing investment in education, since the distribution of contributions depends partly on the percentage of investment assigned to education.

COMPENSATORY PROGRAMS

The main purpose of the compensatory programs is to reduce social inequalities through education. Such inequalities can be between jurisdictions or within each province. It is desirable that the distribution of the national resources be concentrated on both these dimensions of inequality; however, this report will focus on the first one, that is, inequalities between the provincial jurisdictions.

When analyzing the distribution of the resources of a national program, it is necessary to compare it with any indicator that reflects provincial differences or needs. In the case of the compensatory programs aimed at resolving the issue of extreme social vulnerability, the proposed indicator is the school-age population's level of poverty. In this sense, resources should be distributed according to the number of school-age children and adolescents in situations of poverty.

Following this criterion, the present distribution of resources from the compensatory programs by the Ministry of Education is very positive. However, a margin of action still remains for improvement and for the achievement of the institutionalization of a distributive scheme that is able to guarantee social justice regardless of the government in power. This would be achieved by defining a distribution formula for resources between the jurisdictions that follow this criterion strictly. That is, given the budget allocated to compensatory programs, each jurisdiction should receive a percentage of the resources in proportion to the number of children and adolescents in situation of poverty in that jurisdiction.

Table 10 presents this simulation. Funds have been distributed among jurisdictions on the basis of an estimation of the school-age population below the poverty line. An exception has been made for the jurisdictions of Chubut, Ciudad de Buenos Aires, Santa Cruz and Tierra del Fuego, to which a contribution of $15 per student has been defined, which is less than what they would receive through the application of the formula. These four jurisdictions had, in 2006 — the year for which information on poverty was gathered — less than 20 percent of the population below the poverty line.[15]

As can be seen in the table, the linear correlation coefficient between the present distribution of resources from compensatory programs to jurisdictions and an indicator of poverty incidence is 0.87. This means, there is a strong positive relationship between the two variables. The proposed distribution takes this correlation to practically an ideal situation, with a value of 0.99. Making the effort to implement the proposed distribution is

[15] Given the low population density of provinces such as Tierra del Fuego or Santa Cruz, the final result of the distribution of resources expressed in investment per student tends to be disproportionate in relation to other jurisdictions. In the case of compensatory programs, a theoretical scheme that gives higher per-student contributions to these provinces, which also have the lowest poverty levels, is unviable. For that reason, we decided to unify the transferences in a minimal contribution extending the criteria to all jurisdictions under the poverty level of 20 percent.

important given the relationship the Ministry of Education's socio-educational policy must maintain with the social poverty of provinces. In addition, it is necessary to establish a fair distribution criteria within the jurisdictions.[16]

Table 10: Compensatory programs, present distribution and proposal. Year 2008.

Distribution formula: percentage of school-age population under the poverty line by jurisdiction over the national total

Jurisdiction	Present situation		Jurisdiction	Simulation		Difference
	Pesos	per school-age inhabitan		Pesos	Distribution adjusted by school-age inhabitants	
Sgo. del Estero	27.884.000	78	Chaco	29.540.917	67	7,7
Formosa	15.826.000	67	Corrientes	26.063.231	64	-0,8
Corrientes	26.407.000	65	Sgo. del Estero	22.025.494	61	-16,4
Jujuy	17.247.000	63	Formosa	14.261.720	61	-6,7
Chaco	26.133.000	59	Misiones	28.448.881	61	9,7
La Rioja	6.837.000	52	Salta	29.231.890	58	6,5
Tucumán	28.133.000	52	Jujuy	15.303.512	56	-7,1
Salta	25.953.000	51	San Juan	13.211.761	53	5,3
Misiones	23.889.000	51	Tucumán	28.356.026	52	0,4
San Juan	11.885.000	47	Catamarca	7.847.934	52	9,2
La Pampa	4.844.000	44	Entre Rios	18.573.219	42	10,1
Catamarca	6.452.000	43	La Rioja	5.416.661	42	-10,9
Mendoza	22.774.000	39	Río Negro	8.352.542	38	3,3
Río Negro	7.632.000	35	San Luis	5.878.629	38	4,3
Neuquen	6.984.000	34	Santa Fe	36.666.708	36	6,7
San Luis	5.200.000	33	La Pampa	3.787.266	34	-9,5
Entre Rios	14.151.000	32	Córdoba	30.979.811	29	-1,8
Córdoba	32.879.000	31	Buenos Aires	135.352.342	29	8,6
Santa Fe	29.776.000	29	Neuquen	5.852.094	29	-5,5
Chubut	4.593.000	27	Mendoza	16.672.073	28	-10,3
T. del Fuego	1.106.000	23	Chubut	2.508.431	15	-12,5
CABA	-	-	CABA	9.360.189	15	-
Santa Cruz	1.702.000	20	Santa Cruz	1.257.347	15	-5,3
Buenos Aires	94.915.000	20	T. del Fuego	724.320	15	-7,9
TOTAL	**495.673.000**			**495.673.000**		
Correlation with poverty		0,87	**Correlation with poverty**		0,99	

Note: The contributions to Ciudad de Buenos Aires have not been included since it has not been possible to distinguish them from the central expenditure, which are assigned geographically to the same jurisdiction. This situation should be corrected in the eventuality of this scheme being implemented.

Poverty incidence: Low Intermediate High

Source: CIPPEC, based on information from the Finance Secretariat, Ministry of Economy and Public Finance.

[16] To carry out this internal distribution of resources, having up–to-date information on the socioeconomic status of students who assist state schools is of utmost importance. Presently, the only census-like information available corresponds to the year 2000.

SCHOOL INFRASTRUCTURE PROGRAMS

Although among the central purposes of the national education policy is the reduction in inequality, school infrastructure programs pursue other objectives as well, the main one being the extension of the supply of schools. In this sense, the indicator that should guide the distribution of resources should be related to the school-age population outside of the education system and, in case this information exists, to the status of the initial infrastructure.

Unlike the logic of the compensatory programs — related directly to the social needs of the population — school infrastructure constitutes long-term investment and is also related to the governments' fiscal capacities. Hence, it is desirable that the distribution criteria include this dimension.

The indicator proposed for the distribution of resources from the infrastructure programs will take into account the school-age population, a criterion that will be adjusted against an educational exclusion indicator (school-age population outside the education system) in each jurisdiction, the fiscal capacity (expressed in terms of fiscal resources per school-age child) and the financial effort towards education (expressed in terms of the relationship between educational expenditure and total expenditure). This last indicator incorporates the formula incentives for provincial investment in education, since it rewards the jurisdictions which make a greater effort.

Table 11 sets out the present distribution of infrastructure programs and the proposed simulation. The actual situation includes both the contributions by the Ministry of Education as well as those corresponding to the program *"More schools, better education*" by the Ministry of Federal Planning, Public Investment and Services. Given that the execution of school infrastructure projects can vary from year to year, both in terms of magnitude and in the distribution among jurisdictions, an average of the programs executed during the period 2006-2008 has been taken here, expressed in real values in the last year.

Table 11: School infrastructure programs: present and proposed distribution. Year 2008.

Distribution formula: percentage of school-age population over the national total, adjusted by the percentage of population outside the education system (50%), fiscal resources per school-age child (25%) and financial effort towards education (25%)

Jurisdiction	Present situation (2006-2008)		Jurisdiction	Proposed simulation		Difference
	Pesos	per school-age inhabitant		Pesos	Distribution adjusted by school-age inhabitants	
La Pampa	21.922.939	197	Misiones	40.144.382	86	51,4
La Rioja	19.852.341	152	Sgo. del Estero	27.488.938	77	45,0
Tucumán	82.021.536	150	Chaco	33.615.484	76	-67,5
Chaco	63.430.536	144	Corrientes	29.913.907	73	28,6
Formosa	30.417.516	130	Tucumán	39.349.822	72	-78,3
Jujuy	35.617.191	129	Salta	32.306.285	64	17,0
San Juan	29.731.928	118	Formosa	14.835.658	63	-66,4
T. del Fuego	5.121.613	106	Jujuy	16.262.467	59	-70,4
Santa Cruz	8.372.888	100	Mendoza	34.694.828	59	24,3
Catamarca	12.343.510	81	Buenos Aires	277.539.983	59	22,8
Río Negro	17.747.317	81	Entre Rios	24.991.607	57	14,2
Chubut	9.269.919	55	Córdoba	58.753.656	56	2,9
Córdoba	55.668.114	53	San Juan	13.864.939	55	-63,1
Salta	23.665.383	47	Santa Fe	55.748.556	55	25,3
Corrientes	18.279.331	45	San Luis	7.732.119	49	27,7
Entre Rios	18.745.368	43	La Rioja	6.295.547	48	-104,1
Buenos Aires	169.743.957	36	Río Negro	10.476.983	48	-33,0
Mendoza	20.349.082	34	La Pampa	5.124.116	46	-151,1
Misiones	16.045.445	34	Catamarca	6.674.283	44	-37,4
Sgo. del Estero	11.375.173	32	Neuquen	8.193.146	40	15,1
Santa Fe	29.886.542	29	Chubut	6.460.759	39	-16,8
CABA	-	-	CABA	18.809.165	30	-
Neuquen	5.096.018	25	T. del Fuego	1.167.357	24	-81,9
San Luis	3.401.239	22	Santa Cruz	1.807.855	22	-78,3
TOTAL	772.251.843			**772.251.843**		
Correlation with % of population outside the education system		0	Correlation with % of population outside the education system		0,93	
Correlation with fiscal resources per school-age inhabitant		0,18	Correlation with fiscal resources per school-age inhabitant		-0,88	
Correlation with financial effort for education		-0,09	Correlation with financial effort for education		0,23	

Note: The contributions to Ciudad de Buenos Aires have not been included since it has not been possible to distinguish them from the central expenditure, which are assigned geographically to the same jurisdiction. This situation should be corrected in the eventuality of this scheme being implemented. Index of population outside the education system, poverty and fiscal resources per inhabitant: Worst situation Intermediate situation Best situation.

Source: CIPPEC, based on information from the Finance Secretariat, Ministry of Economy and Public Finance.

Among the national education programs, those related to school infrastructure show greater arbitrariness in terms of the distribution of resources between jurisdictions. Great disparities among jurisdictions are registered; the gap between the six provinces that receive the maximum contributions per student and those that receive the minimum is six-fold.

With the present correlation between the national contributions to school infrastructure and the three variables that we propose here as criteria to distribute these contributions (population outside the education system, fiscal resources per school-age child and the

financial effort towards education), a very low relationship, expressed in terms of the values reached by linear correlation coefficients, can be observed.

This leads to particular situations that make the discretion used in the allocation of resources evident. For instance, the province of La Pampa receives larger amounts of national resources even though it is not among the most involved provinces in terms of its fiscal resources or population outside of the education system. Another disparate situation can be identified among the provinces in the Patagonian region: Tierra del Fuego, Santa Cruz or Chubut receives a lot more resources than other provinces with similar characteristics, like Neuquén.

A first change that comes about from the application of the criteria proposed is a decline in the dispersion of contributions. The gap analyzed earlier between the two groups of six jurisdictions with the most unequal national resources reduces by itself, by more than 50 percent. Moreover, any arbitrariness in the distribution of resources is done away with, since the resulting order of the jurisdictions in this context adjusts to the objective criteria.
This distribution does not need to be verified each year, as the plan for the execution of infrastructure has specific characteristics that make the strict application of a formula in each period increasingly difficult. However, a scheme such as this one should be the objective in an annual investment program — for example, the recently implemented "700 schools" program.

Box 3: Summary of the advantages and disadvantages of the distribution of the national compensatory and infrastructure programs

Advantages:

- The distribution of resources is based on objective and pertinent criteria for each dimension. This helps avoid discretion or arbitrariness in resource allocation.
- Distribution according to set objectives benefits the poorest provinces in compensatory policies and those who suffer most in terms of exclusion in education, fewer resources, and greater effort to finance education infrastructure.
- The scheme eliminates the disparities detected between provinces of similar characteristics in the actual distribution.

Disadvantages:

- Some indicators used for the distribution formulae have limitations in their coverage or construction, as is the case with the poverty indicator of the Household Survey (HHS)**,** which only takes into account the urban sectors.
- The distribution of resources, expressed in contributions per student in both cases results in a more concentrated distribution, with a lower gap between the provinces that receive the most and least. This can be positive in terms of equity but it also undermines the national government's flexibility to support extreme situations.

THE RESULTING FINAL DISTRIBUTION

The final distribution resulting from the three proposals referred to wage, infrastructure and compensatory programs by the national government accomplishes the objective of increasing the fiscal and social equity levels between the provinces. The combination of the proposed scenarios implies an important modification as regards the present resource distribution presented in Table 1.

The resulting distribution can be observed in Table 12. In the case of the wage programs, where different scenarios have been developed, Scheme A has been chosen and its criteria applied to the 2008 budget so as to make the data comparable to the rest of the programs and to provincial investment.

Table 12 allows us to observe how the provinces that are most benefited by the three analyzed funds from the national resources coincide more clearly than in the present distribution (Table 2) with their level of provincial investment per student. This means that in the proposed simulation, provinces that have less provincial investment per student are the ones that receive a larger quantity of national resources per child, thus reducing the existing gaps.

Table 12: Proposed distribution for national programs among jurisdictions (based on 2008 data).

Jurisdiction	Compensatory programs	Infrastructure*	Wage funds	Other programs by the Ministry of Education**	Total national funds (2008)	Provincial expenditure (2008)	National as a % of provincial
Misiones	86	122	325	389	922	2.649	35%
Sgo del Estero	87	109	256	376	829	3.162	26%
Entre Ríos	57	77	224	462	821	4.405	19%
Corrientes	82	94	334	283	793	3.173	25%
Salta	78	87	298	323	786	2.223	35%
Buenos Aires	36	75	365	304	780	3.969	20%
Jujuy	73	78	317	302	770	4.146	19%
Formosa	80	83	224	329	716	4.473	16%
Chaco	87	99	295	224	705	4.512	16%
San Juan	76	80	208	296	659	3.990	17%
Tucumán	72	100	277	197	645	3.145	21%
Santa Fe	47	72	257	197	573	4.594	12%
Mendoza	38	80	238	171	528	3.932	13%
La Rioja	54	63	0	380	497	4.271	12%
Córdoba	38	71	238	136	483	3.932	12%
Catamarca	68	58	0	262	387	6.288	6%
Neuquén	37	52	0	249	338	8.771	4%
San Luis	52	68	0	200	320	5.192	6%
Tierra del Fuego	18	29	0	261	307	12.726	2%
CABA	14	28	0	260	302	5.197	6%
Río Negro	49	62	0	145	256	5.304	5%
Chubut	19	48	0	178	245	7.025	3%
Santa Cruz	18	26	0	199	243	12.302	2%
La Pampa	51	69	0	110	229	7.576	3%
TOTAL	**48**	**75**	**255**	**283**	**662**	**4.248**	**16%**
Average	**55**	**72**	**161**	**260**	**552**	**5.290**	**14%**

Investment per student: Low Intermediate High .

Fuente: CIPPEC, based on information provided by the Oficina Nacional de Presupuesto, Finance Secretariat, Ministry of Economy and Public Finance; Dirección Nacional de Información y Evaluación de la Calidad Educativa, Ministry of Education.

In order to compare the present situation with that envisaged in the proposal, Table 13 shows the national contribution in both the scenarios, arranging jurisdictions in proper order according to the contribution they receive. As one can observe, there could be provinces that would receive more resources than what they receive at present, especially the most populated ones (Buenos Aires Province, Santa Fe, Córdoba, Mendoza) and the fiscally and socially poorest ones (Corrientes, Misiones, Salta). On the other hand, several provinces would receive much less resources, especially the fiscally and socially richest ones (La Rioja, La Pampa, Santa Cruz, Tierra del Fuego, Río Negro, Chubut, Ciudad de Buenos Aires, San Juan, Catamarca, Neuquén).

Table 13: Summary of scenarios for the distribution of national programs among jurisdictions

Provincial investment per student		National contributions (present distribution)		National contributions (proposed distribution)		
Jurisdiction	Provincial expenditure (2008)	Jurisdiction	Total national funds (2008)	Jurisdiction	Total national funds (2008)	Difference
Salta	2.223	La Rioja	1.058	Misiones	922	74
Misiones	2.649	Entre Ríos	965	Sgo del Estero	829	-3
Tucumán	3.145	Formosa	925	Entre Ríos	821	-144
Sgo del Estero	3.162	Jujuy	913	Corrientes	793	114
Corrientes	3.173	San Juan	882	Salta	786	65
Mendoza	3.932	Misiones	848	Buenos Aires	780	95
Córdoba	3.932	Sgo del Estero	832	Jujuy	770	-143
Buenos Aires	3.969	Chaco	800	Formosa	716	-209
San Juan	3.990	Tucumán	769	Chaco	705	-95
Jujuy	4.146	Salta	721	San Juan	659	-223
La Rioja	4.271	Buenos Aires	685	Tucumán	645	-123
Entre Ríos	4.405	Corrientes	679	Santa Fe	573	164
Formosa	4.473	La Pampa	657	Mendoza	528	130
Chaco	4.512	Tierra del Fuego	630	La Rioja	497	-561
Santa Fe	4.594	Catamarca	590	Córdoba	483	118
San Luis	5.192	Santa Cruz	564	Catamarca	387	-203
CABA	5.197	Neuquén	528	Neuquén	338	-190
Río Negro	5.304	Río Negro	511	San Luis	320	-82
Catamarca	6.288	Chubut	464	Tierra del Fuego	307	-323
Chubut	7.025	CABA	429	CABA	302	-127
La Pampa	7.576	Santa Fe	410	Río Negro	256	-255
Neuquén	8.771	San Luis	402	Chubut	245	-219
Santa Cruz	12.302	Mendoza	398	Santa Cruz	243	-320
Tierra del Fuego	12.726	Córdoba	365	La Pampa	229	-428

Investment per student: Low Intermediate High .

Source: CIPPEC, based on information from the *Oficina Nacional de Presupuesto*, Finance Secretariat, Ministry of Economy and Public Finance; *Dirección Nacional de Información y Evaluación de la Calidad Educativa*, Ministry of Education.

This overall view of the distributive proposal of national funds refers to the central issue of the dual (fiscal and social) inequality that exists between provinces (see Introduction)**.** Fiscal inequality (amount of fiscal resources per individual) particularly impacts teachers' wages, leading to extreme and unfair wage gaps which violate their right to equal remuneration for similar jobs. The social inequality that exists between the provinces (the population's poverty level) impacts the students' right to education, hindering their access to schools, trajectory of education, and learning outcomes.

MEASURING THE EFFECT OF THE PROPOSED DISTRIBUTION FORMULAE

Taking into account these two types of inequalities, Table 14 presents, as an *effect measure of the proposed redistribution policy,* the correlation between the amount of fiscal resources per individual and the poverty level, and the present distribution of the national education resources and the proposed one. The conclusions are as follows:

- In *compensatory policies* the actual distribution clearly benefits the socially poorest provinces (the correlation between the national resources per student and the poverty level of provinces is 0.87). However, the presented proposal improves that distribution even further (the correlation is 0.99), eliminating any possible discretionary practices and fixing a clearly pro-poor people formula.
- Regarding the *infrastructure policies*, the differences between the present situation and the proposal are strong. In this case, both the fiscal and social redistribution are valued, since it is considered a variable associated with both dimensions of the provincial situation. The relationship between the present distribution and social poverty of provinces is almost null and it is even inverse in relation to fiscal poverty (provinces with more fiscal resources are benefited to some extent). The presented distributive proposal reverses this situation and achieves a very high correlation with the poverty of the provinces (0.83 versus the present correlation of 0.14) and with fiscal poverty.
- As regards the *wage policy*, the difference is especially pronounced when it comes to fiscal poverty of the provinces, given that the teachers' wage is determined by this factor. Thus, given a positive but low correlation between national investment and the low fiscal resources per individual (correlation is -0.20), the proposal achieves a much higher correlation between both the indicators (-0.72).
- Together, the provinces' distribution of the national programs per student would considerably improve its correlation with social poverty of the provinces (from the present 0.57 to the proposal's 0.73) and to a very great extent the correlation with the low amount of fiscal resources per individual (from -0.16 to -0.66)**.** In this way, the National State would manage to create conditions marked by better social and fiscal equality between the provinces, benefiting the students and teachers in their educational and labor rights.

Table 14: **Effect Measure - Comparison between the present distribution of national contributions and the proposed scheme: correlation between the budgetary programs, poverty level and fiscal resources per person.**

Jurisdiction	Correlation with poverty		Correlation with fiscal resources per inhabitant	
	Present situation	Proposed situation	Present situation	Proposed situation
Compensatory programmes	0,87	0,99	-0,45	-0,80
Infrastructure*	0,14	0,83	0,15	-0,81
Wage funds	0,51	0,58	-0,20	-0,72
Other Ministry of Education programs**	0,45	0,45	-0,17	-0,17
Total National funds (2008)	0,57	0,73	-0,18	-0,66
Provincial expenditure (2008)	-0,75	-0,75	0,96	0,98
National as a % of provincial	0,78	0,71	-0,57	-0,66
Results of applying the new proposal	**> Positive correlation: as poverty increases, national contributions increase**		**< Negative correlation: as resources per inhabitant increase, national contributions decrease**	

Note: Ciudad de Buenos Aires is excluded from correlations so that the result remains comparable to the present situation (Table 4)

Source: CIPPEC, Ministry of Economy and Public Finance; *Dirección Nacional de Información y Evaluación de la Calidad Educativa*, Ministry of Education.

CONCLUSIONS

The huge problem left unsolved by Argentina's education financing structure is the enormous inequality in investment per student among provinces. Any new legal framework of education finance should set as a concrete objective the bridging of this vast gap in terms of the level of investment per child as well as the efforts made by the provinces to finance education.

In order to do this, it is necessary to recognize the two types of structural inequalities between the provinces: *social inequalities* (measured by the poverty level of the population of each jurisdiction) and the *fiscal inequalities* (state resources per inhabitant). Fiscal inequality, at the same time, leads to one of the central problems typical to federalism: the critical fiscal situation of Buenos Aires Province is extremely affected by the Federal Tax Co-Participation (which leads to it accumulating a fiscal deficit that becomes higher and more unsustainable with each passing year).

Faced with these scenarios, the present simulation proposes a model to reduce inequalities between the provinces. We propose a distribution plan in accordance with the objective criteria of the three existing educational funds (through following a formula with variables that are continuously automatically updated): wages, infrastructure and compensatory policies.

By following the theoretical framework of the two structural dimensions of inequality between provinces, concrete formulae were designed in order to simulate an alternative distribution to the one actually in force for the specified funds.

The *wage fund* aims to benefit those provinces that have lesser fiscal resources per individual, given that this is the main cause of inter-provincial wage inequalities. The presented proposal clearly improves the existing distribution, though it presents two scenarios: an ideal one (where provinces with lesser amounts of fiscal resources are hugely benefited) and a viable one (where a common minimum level is maintained for all provinces, as was set at the time of the creation of FONID).

The *infrastructure fund* combines the fiscal and social variables, since it responds to the needs of state funds and of extending schooling to the most socially affected places. In this case, the proposal significantly improves upon the present distribution system, benefiting the socially and fiscally poor provinces, something that does not happen these days with the national resources.

As regards the *compensatory policies* fund, a formula which clearly benefits the poorest students in the country is proposed. In this case, the proposal slightly improves upon distribution by the national government which is already very positive.

The proposed distribution of the funds would achieve a substantive increase in equity in terms of investment per student by provinces**,** benefiting the socially and fiscally poorest provinces. This is what the correlations between national investment per child and poverty and fiscal resources per inhabitant of each province show.

The increase in national investment is necessary in order to guarantee more funds for provinces, thereby closing the existing social and fiscal gaps between them. Though education can only make a small contribution, given the economic and fiscal factors that determine these gaps, the present document aims to increase the capacity of national education finance to reduce as much as possible the inter-provincial inequities.

The political objects potentially related to redistribution must also be considered. Facing the proposed redistribution of the national funds, the prejudiced provinces could claim and oppose the proposal. This could happen especially with regard to teachers' wages, which constitute the educational expenditure that is most visible to provinces. However, this is unlikely to happen to items of the budget assigned to infrastructure and compensatory policies.

In this context, it is necessary to understand the political dynamic that has historically determined the present fiscal inequality between provinces. The Argentine federalism is one of the least fair and equal in the world. The most populated provinces are the ones that are least represented in Congress. Indeed, there is no federal country in the world with a higher level of inequality in terms of the political representation of its jurisdictions in Congress.
Hence the fact that the largest provinces are the most prejudiced in Co-Participation and in almost all negotiations of redistribution of resources held in Congress is not accidental. That

is how the fact that the Buenos Aires Province, with 38 percent of the population, receives 21 percent of all the co-participable resources, can be explained. All the 23 remaining jurisdictions (except Mendoza, which has a very small margin; and Ciudad de Buenos Aires, which has many resources of its own) receive a percentage of Co-Participation which is higher than the percentage of population over the national total.

Considering this situation, it is essential that the new legal proposal for educational finance sets the global criteria approved by the Congress, but that a concrete formula for resource distribution is not discussed there. In case this happens, the most represented provinces in Congress would probably benefit more, expanding the present social inequalities. For example, if the national educational resources were distributed according to the current Federal Co-Participation formula, the resource gaps among provinces would expand in absolute terms.

BIBLIOGRAPHY

Barber, M. y Mourshed, M. (2008): "Cómo hicieron los sistemas educativos con mayor desempeño del mundo para alcanzar sus objetivos", Documento N° 41, PREAL**.**

Cetrángolo, O. and Jiménez, J. (2004): *"Las relaciones entre niveles de gobierno en Argentina"*, Revista de la CEPAL, Nº 84, Págs. 171-134, CEPAL, Santiago de Chile.

CIPPEC (2007): *"Informe Anual de Monitoreo de la Ley de Financiamiento Educativo"*, Proyecto de Monitoreo de la Ley de Financiamiento Educativo, CIPPEC, Buenos Aires.

CIPPEC (2006): *"Los salarios docentes"*, Presentation No. 2, Proyecto de Monitoreo de la Ley de Financiamiento Educativo, CIPPEC, Buenos Aires.

CIPPEC (2008): *"Segundo Informe Anual de Monitoreo de la Ley de Financiamiento Educativo"*, Proyecto de Monitoreo de la Ley de Financiamiento Educativo, CIPPEC, Buenos Aires.

DiNIECE (2007): *El Nivel Inicial en la última década: desafíos para la universalización*, Dirección Nacional de Información y Evaluación de la Calidad Educativa, Boletín DiNIECE Year 2 Nº 2, Buenos Aires.

DiNIECE (2012): Operativo Nacional de Evaluación 2010 – Censo de finalización de la educación secundaria, DiNIECE, Buenos Aires.

Informe de Resultados, Boletín DiNIECE Year 2 Nº 2, Buenos Aires.

Duarte, J., Bos, M.S., Moreno, M. (2011): "*Los docentes, las escuelas y los aprendizajes escolares en América Latina: un estudio regional usando la base de los datos del SERCE*", BID.

Dubet, F., Marie Duru-Bellat et Antoine Vérétout Les sociétés et leurs écoles. Emprise du diplôme et cohésion sociale *avec, Seuil, 2010*

Federal Education Budget Program, *No Child Left Behind Act – Title I Distribution Formulas*. Last time consulted: 01/28/2012. In: http://febp.newamerica.net/background-analysis/no-child-left-behind-act-title-i-distribution-formulas.

Fullan, M. (2010). All systems go: The change imperative for whole system reform. Thousand Oaks, CA: Corwin.

Fuller, B., Clarke, P. (1994), "Raising school effects while ignoring culture? Local conditions and the influence of classroom tools, rules and pedagogy", en: Review of Educational Research, Vol. 64, N°1.

Grupo Compromiso con el Financiamiento Educativo (2009): *"Barómetro del Financiamiento Educativo. Informe N°2"*, Buenos Aires.

Hanushek, E. y Wöbmann, L. (2007), "Calidad de la educación y crecimiento económico". PREAL. Documento N° 39. Santiago de Chile.

Hargreaves A. & Shirley D. (2009). *The fourth way. The inspiring future for educational change*, Corwin, California.

IIPE (2005): "*El financiamiento educativo: mitos y realidades"*, Report No. 28, Buenos Aires.
Kisilevsky, M. (1998), "*Ferderalismo y educación: un espacio histórico de pugnas distributivas*", Master Thesis, FLACSO, Buenos Aires.

Louis T., Jabine T., and Gerstein, M. (2003), "Statistical Issues in Allocating Funds by Formula", *Editors*, National Research Council, The National Academies Press.

Mezzadra, F. y Rivas, A. (2005): *"Coparticipación y equidad educativa: un debate pendiente en el campo de la educación"*, Documento N°4, Programa de Educación, CIPPEC, Buenos Aires.

MECyT (2007): *"Informe de Gestión 2003-2007"*, Ministerio de Educación, Ciencia y Tecnología, Buenos Aires.

Mons, N. (2008): *Les nouvelles politiques éducatives*, Paris, PUF.

Morduchowicz, A. (2005): "*Las instituciones financieras en educación"*, Fundación Centro de Estudios en Políticas Públicas, Fundación Adenauer, Buenos Aires, December.

Morduchowicz, A. (2002): "*El financiamiento educativo en Argentina: problemas estructurales y soluciones coyunturales"*, IIPE-UNESCO, Buenos Aires.

Mourshed, M., Chijioke, C. y Barber, M. (2010), *"How the World's Most Improved School Systems Keep* Getting Better", McKinsey & Company, Washington, DC.

OCDE: Literacy skills for the world of tomorrow. Further results from PISA 2000, Organization for Economic Cooperation and Development, Paris, 2003.

OECD-UNESCO (2007): "Science Competencies for Tomorrow's World. PISA 2006".

OCDE: PISA 2009 Results: Overcoming Social Background – Equity in Learning Opportunities and Outcomes (Volume II), Organization for Economic Co-operation and Development, Paris, 2010.

OREALC-UNESCO: Los aprendizajes de los estudiantes en América Latina y el Caribe, Segundo Estudio Regional Comparativo y Explicativo, Laboratorio Latinoamericano de Evaluación de la Calidad de la Educación, Santiago de Chile, 2008.

Pickett, K. and Wilkinson, R. (2009): “The Spirit Level: Why Greater Equality Makes Societies Stronger”, Bloomsbury Press, New York.

Rivas, A. (2004): “Gobernar la Educación. Estudio comparado sobre el poder y la educación en las provincias argentinas”, Granica, Buenos Aires.

Rivas, A. et al. (2004): “*Los estados provinciales frente a las brechas socioeducativas. Una sociología política de las desigualdades educativas en las provincias argentinas”*, Working Paper No. 4, CIPPEC, Programa de Educación, Buenos Aires.

Rivas, A., Vera, A., y Bezem, P. (2010). *Radiografìa de la Educación Argentina*. Buenos Aires: CIPPEC, Fundación Arcor, Fundación Roberto Noble.

UIS-UNESCO (2008): “*Compendio Mundial por la Educación 2008”*, Montreal.

World Bank (2011), Learning for All. Investing in People´s Knowledge and Skills to Promote Development, World Bank Group Education Strategy 2020, Washington DC.