

KEYWORDS

Students
Academic achievement
Measurement
Social isolation
Urban zones
Social policy
Education
Equity
Uruguay

Effects of urban segregation on education in Montevideo

Rubén Kaztman and Alejandro Retamoso

This study analyses the effects of residential segregation in Montevideo on the learning differences of students and examines the efficacy of the educational system's responses seeking to deal with the inequities generated by those processes. After describing the effects of the family, the school and the neighbourhood on learning, it presents hierarchical linear models which seek to isolate the effects of each of these contexts. It summarizes the challenges raised by the results to Uruguayan education's efforts to dissociate learning achievements from social origin and examines the responses of the authorities of the sector to those challenges. Finally, it reviews policy options for strengthening the role of education as the principal means for integrating new generations in the light of new problems in relation to urban segregation.

Rubén Kaztman
Director of the Research
Programme on
Integration, Poverty and Social
Exclusion (IPES),
Catholic University of Uruguay
✉ kaztman@adinet.com.uy

Alejandro Retamoso
Associate Researcher, IPES,
Catholic University of Uruguay
✉ aretamo@ine.gub.uy

I

Introduction

Up to the 1960s, Montevideo could be seen as an integrated, consolidated and compact territorial unit, with neighbourhoods and zones defined by a common functional identity in keeping with the centrality of a working world shaped around State employment and industry (Kaztman, Filgueira and Errandonea, 2005). This profile became still more accentuated during the prevalence of the import substitution model but gradually faded with the profound changes in the labour market and the social morphology of the city that went along with the collapse of that model.

Housing options were affected by the decline in the demand for labour in industry and the State and the general weakening of people's links with the labour market. Many less-skilled workers, who were unable to find guarantors for rental agreements or to cover the cost of rents in the central areas of the city, were forced to seek housing in poor neighbourhoods or makeshift settlements on the outskirts of the city. The homogeneity of the composition of poor neighbourhoods grew more marked and became one of the characteristic features of the new social morphology of the city which raised unprecedented challenges to municipal governance.

This study analyses both the effects of residential segregation in the city on the differences in learning achievements of school-age children and the efficacy of the educational system's responses to the inequities generated by these processes. After the present introduction, section II presents background information from national studies on the effects of the socio-economic situation of families and of the social composition of neighbourhoods and primary schools on various indicators of educational achievement. Section III presents a hierarchical linear model which seeks to isolate the effects of each of the three levels (family, school and neighbourhood) on learning achievements. Section IV sums up and analyses the results of the five models applied. Section V shows the challenges raised by the foregoing results for Uruguayan education's efforts to dissociate learning achievements from social origin and examines the responses of the authorities of the sector to those challenges. Finally, section VI analyses the alternative designs available to social policies for maintaining and strengthening the role of education as the main means for the integration of the new generations on the basis of equity.

II

Families, schools and neighbourhoods: their effects on school performance

Families, schools and neighbourhoods operate as socializing environments which shape an important part of the contents of children's minds. Those mental contents include habits, disciplines, attitudes,

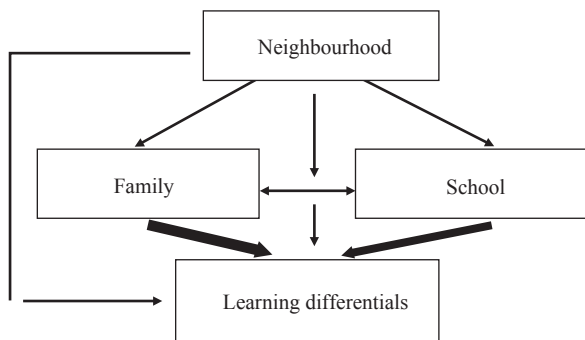
expectations of achievement and abilities to put off their satisfaction: elements which determine much of the success children will have in tackling the accumulation of knowledge in an orderly and steady way. Figure 1 sums up our hypotheses on the relative weight (shown by the thickness of the arrows) of these contexts in determining the learning differentials of school-age children and the ways those effects are transmitted.

What do we know about the credibility of the hypotheses involved in each of the arrows in the figure in the case of Montevideo? Some studies carried out in Uruguay shed some light in this respect.

□ This study is a condensed and modified version of a paper presented by the authors at the seminar on "Urban Governance and Intra-Urban Population Differentials in Metropolitan Areas of the Americas," University of Texas at Austin (United States), 17-19 November 2005. The authors are grateful to María José Álvarez and Fernando Filgueira for their comments and suggestions on the original version.

FIGURE 1

Main areas of socialization of school-age children



Source: Prepared by the author.

1. The family

With regard to the family, we know, for example, that what we know in this country as the process of “infantilization of poverty”, that is to say, the spread of poverty among children, is the visible part of structurally conditioned phenomena of accentuation of the differences in the formation of assets and types of family arrangements observed between households

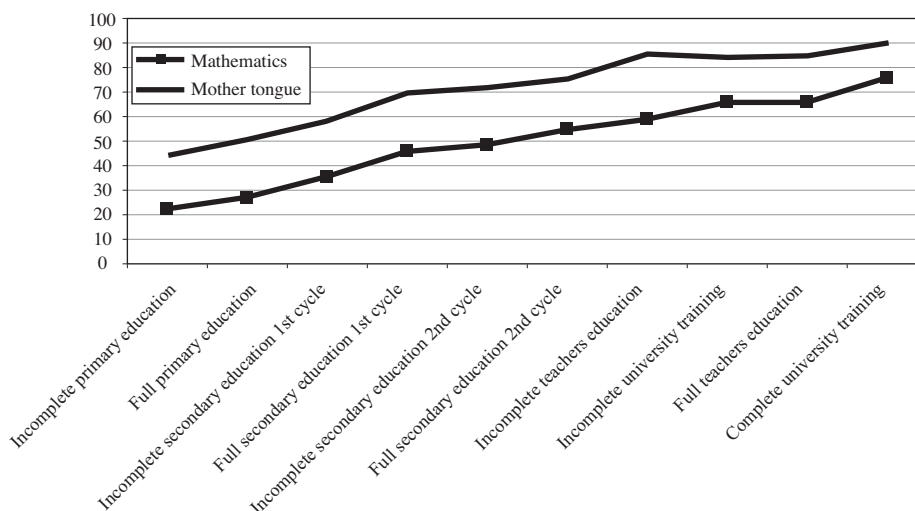
of different socio-economic strata. We also know that these differences in the configuration of assets and in family arrangements are closely related to disparities in the educational achievements of the children (Kaztman and Filgueira, 2001). Figure 2, which links the educational level of mothers with the results of learning tests in the mother-tongue and mathematics among children in the sixth grade of primary education, gives an idea of the force of those relations.

2. The neighbourhood

With regard to the neighbourhood, there are many studies from the 1980s onward which have identified residential segregation processes that change the social morphology of the city. These processes have changed the social composition of neighbourhoods, and this has been reflected, essentially, in an increase in the proportion of poor households in poor neighbourhoods (Kaztman, 1999; Cervini and has Gallo, 2001; Macadar, Calvo and others, 2002; Kaztman and Retamoso, 2005a). By applying a battery of indicators of the dimension of residential segregation processes, a recent study on this matter reveals that there has been an accentuation of the unequal distribution of unskilled persons over the area of the city, which has increased

FIGURE 2

Montevideo: Level of sufficiency in mathematics and the mother tongue, according to the educational level of the mother, 1996



Source: Prepared by the authors on the basis of data from the *Census to evaluate learning in the sixth grade of primary education* of the Unit for the Measurement of Educational Results, National Public Education Administration (UMRE/ANEP).

the homogeneity of the social composition of the neighbourhoods where they live and has reduced their opportunities for interacting with more highly skilled persons. It also shows, for 1996, an expansion in the geographical patches corresponding to contiguous neighbourhoods with similar social compositions (Kaztman and Retamoso, 2006).

The results of these and other studies (for example, Kaztman, 1997; Kaztman and Filgueira, 2001) also confirm that the level of homogeneity in the social composition of poor neighbourhoods is important for predicting educational performance. In other words, children from poor households exhibit better academic results when they live in neighbourhoods with a heterogeneous social composition than when they live in neighbourhoods where the great majority of households are poor.¹

3. The school

Public education played a central role in the mechanisms which made Uruguayan society outstanding in the region because of its high level of social integration. This integrative nature was aided by the quality of public education, but also by the fact that that education brought together pupils with different social origins in the same classroom. This was particularly so in the primary schools, where students from a humble background had the chance to interact face to face with their peers from better-off homes. Through the daily construction of common codes and bonds of solidarity and affection which took place in those informal encounters, many schoolchildren gradually

¹ After their families and schools, for poor children their neighbourhoods are the next most important human aggregate as an area of interaction with and exposure to forms of behaviour which can influence their attitudes and expectations in various ways. Peer groups will do so through mechanisms similar to those which are activated in school and which will be dealt with later on in this study. The influence of adults can act in various ways. They may or may not serve as role models, i.e., as successful examples of the use of certain means to attain desired ends. They may or may not operate as relevant actors in defining and consolidating the patterns of norms which govern the relations among neighbours and establish the tone and level of sociability among them. They can act as promoters of the positive or negative image of the neighbourhood in the rest of the city: an image which can affect the formation of children's identities and their self-esteem, but which can also affect their future opportunities for obtaining a good job because of its effects on those seeking work. The adults of the neighbourhood can also modify the opportunities that children will have in their life through adults' greater or lesser efficacy as constructors or promoters of local institutions.

incorporated their first experiences of forming part of a single society. This integrative potential of the public primary schools was undermined, however, by the segmentation of education.

As from the mid-1980s, there was a substantial increase in Montevideo in the number of children attending private schools. This increase was undoubtedly aided by many parents who, in view of the deterioration of the quality of public education and the rapid rise in the qualifications needed to enter the globalized economic circuits, turned to private education in search of a better match between the available education and the knowledge demanded by modern times. In 1984, one out of every two school-age children from the upper income strata and one out of every five of those from the middle income levels attended private schools. Ten years later, the proportions were three out of every four and more than two out of every five, respectively.² Subsequently, this proportion remained stable in the upper strata but went down in the middle-income strata, some of whose members, being more vulnerable to the economic crises that followed each other from the end of the twentieth century on, went back to sending their children to the free public schools.³ As a result, between 1994 and 2004 the proportion of children from the middle strata attending private schools went down from 41.8% to 37.9%.

The changes in the opportunities for interaction with children of different social origin were not determined solely by the increased role of private education. As the great majority of public primary schools recruit their pupils from the surrounding area, their social composition is highly dependent on the social composition of the neighbourhoods where they are located. Thus, the advance of the spatial segregation of households according to their belonging to different socio-economic strata also meant an increase in the homogeneity of the social composition

² The upper per capita income strata of households correspond to the top three income deciles, while the middle-income strata correspond to the next four deciles below them.

³ Although this is the most plausible hypothesis, it is also possible that the boost given to early education under the public system may have generated a certain momentum, inasmuch as children who started to attend public schools at the pre-school level then continued on in that system. In the past, this had not occurred because the public systems' early-education services were in such short supply. Nor should the possibility be ruled out that the middle-income sectors of the population may have opted for the public school system in view of the advances yielded by the initial results of the educational reform process. Be this as it may, neither of these two arguments precludes the hypothesis that segmentation in education has become more pronounced.

of public schools and a corresponding reduction in the opportunities for interaction, on an equal footing, between children from poor households and those from better-off households.

In short, the combination of the tendencies towards the rise of private education and the differentiation of public schools according to their spatial location helped to increase educational segmentation in the city, thus undermining the traditional integrative function of Uruguayan public schools.

What are the mechanisms whereby the opportunities for interaction between socially unequal children in school strengthen the possibilities for the social integration of poorer children?

The social composition of schools defines the profile of the peer group with which children will have the opportunity for daily contact. Studies on learning achievements provide ample evidence of the influence of the peer group in at least four aspects which are of fundamental importance for children's integration. First, schoolmates mould the expectations of educational achievement. Second, the more heterogeneous the group of schoolmates, the greater is the variety of experiences and practice in problem-solving that the children are exposed to, and the greater their opportunities for developing cognitive and social skills which are of key importance for their

performance in school and their subsequent working life (Betts, Zau and Rice, 2003). Third, the social capital that can be accumulated in socially heterogeneous networks has equally positive consequences for the future performance of poor children in both the academic and working worlds. Lastly, for the most disadvantaged children, the daily contact regulated by common patterns of norms that takes place in school may be their only experience in life that gives them the opportunity to share problems —and the hope of sharing destinies— with members of other socio-economic strata. This experience is important for the formation of a general feelings of being part of the same society, despite the disparities in the material living conditions of their families. It may be assumed that, for poor children, the more similar the social composition of their schools and neighbourhoods is to that of society, the greater the relative importance of these early experiences of citizenship will be.

The Uruguayan educational authorities have paid close attention to the changes in the social composition of schools and their possible effects on learning results. Indeed, there are various official studies which confirm the significant impact of the social composition of schools on pupils' performance, controlling them for the characteristics of their homes (ANEP/CODICEN, 2005b; ANEP/UMRE, 1996; ANEP, 1997).

III

Multi-level models for learning achievements in the public schools of Montevideo

1. Methodology and information sources

The results of the studies mentioned in the preceding section do not make it possible to isolate the independent effects of each of the contexts (the family, the school and the neighbourhood) on learning results. In order to deal with this problem, we made use of hierarchical linear models, that is to say, multi-level models. These models make it possible to break down the variance of a dependent variable (in this case the learning results of children) into the dimensions of units corresponding to the various levels of aggregation —children, schools and neighbourhoods— nested within each other in that order.

The data were taken from the National Learning Assessment of sixth grades of primary education⁴ carried out by the Educational Results Measurement Unit (UMRE) of the National Public Education Administration (ANEP) in 1996. This first and only census-type study carried out at the educational level in question covered all the educational establishments of the country (both public and private).⁵

⁴ In Uruguay, primary education consists of six grades, so that the learning assessment sought to capture the skills acquired by children at the point where they are about to leave the primary cycle and enter secondary education.

⁵ Although in the case of rural schools only those with more than six pupils in sixth grade were taken into account.

The assessment was made through four instruments: standardized tests in mathematics and the mother tongue; a survey of the directors of the schools assessed, and a survey of the children’s families. For each of these instruments, the variables and factors which would be most useful for the study were selected.

In order to generate information on the neighbourhoods of Montevideo, use was also made of the 1996 Population, Household and Housing Census (hereafter called the 1996 Population Census) carried out by the National Institute of Statistics (INE). Although the National Learning Assessment permitted the nature of the neighbourhoods to be determined by adding features of the pupils’ homes, it seemed reasonable to assume that these aggregate characteristics might differ from those estimated on the basis of the census data, which obviously cover households and individuals in the neighbourhood that are not related to the schools located in that neighbourhood.

(a) *The universe studied*

The study of the possible effects of residential segregation on educational results concentrates on children attending the sixth grades of the public schools of the department of Montevideo.⁶ These schools account for around 70% of the total number of sixth grade pupils in the department. Only the public schools were considered because, in view of the rules governing their functioning and the difficulties the parents of children attending free schools would have in financing transport costs, it is reasonable to assume that the public schools, much more than the private ones, recruit most of their pupils from the surrounding neighbourhood.⁷ In this sense, working only with public schools gives greater confidence, at least in the

⁶ The selection of the department of Montevideo as the universe to be studied is of substantive importance: residential segregation processes are typical of cities with a certain scale of population. In the case of Uruguay, Montevideo is the only city big enough to serve as an example of them, both because of the size of its population and because of the nature of these processes.

⁷ This does not mean that there may not be situations where families decide to send their children to public schools which are not in the same neighbourhood, but—at least in the case of Uruguay—they are not frequent enough as to modify the social composition of those schools.

area of hypotheses, when drawing conclusions on the effects of the social composition of the population of a neighbourhood on the educational performance of the children living there.

It may be added that the total of 12,826 children evaluated in the public schools of Montevideo attended 256 educational establishments spread over the 62 neighbourhoods identified by the INE in the city. As the application of multi-level models demands that there should be no lost data, the universe finally used was somewhat smaller: 10,864 children and 240 schools.

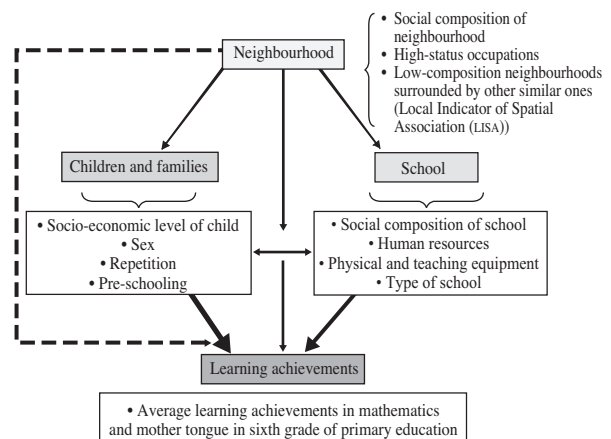
(b) *The hierarchical units and variables used*

The hierarchical units used are the child and his family, the schools the children attend, and the neighbourhoods in which those schools are located. Figure 3 and table 1 show the analytical dimensions, the variables and their hierarchical level of inclusion in the different models tested.

Table 1 shows some of the dimensions and variables initially selected, some of which were subsequently eliminated either because they were not statistically significant or because a significantly large number of units (children or schools) did not provide this information. As we set forth the models we will mention the variables and dimensions excluded and the reasons for each decision.

FIGURE 3

Dimensions and variables of the models



Source: Prepared by the authors.

TABLE 1

Initially selected dimensions or variables

A. Dependent variable

Variable	Definition	Name
Results obtained in mathematics and mother tongue tests	This is the average of the results obtained by the children in the two learning tests applied in the assessment. The items in each of the tests had a minimum score of 0 and a maximum score of 24	LENGMATE

B. Explanatory variables

Dimension or variable	Definition	Name
Level 1: The child		
Socio-economic and cultural level	A factor score which combines family characteristics. Human capital was considered as the educational level of the mother (or father); physical capital was the elements of comfort and satisfaction of basic needs in the household; and cultural capital was the availability of cultural goods such as books, magazines, newspapers, etc.	NSE_ALU
Sex	Dichotomous variable (1 = male)	VARON
Repetition	Existence of repetition by child (dichotomous variable, 1 = repeated)	REPITIO
Pre-schooling	Attendance at pre-school education (dichotomous variable, 1 = attended)	ASISPRE
Level 2: The school^a		
Socio-economic and cultural context or composition	This is the average, at the school level, of the factor score generated in level 1 (child)	NSE_ESC
Type of school ^b	Full-time schools (dichotomous variable, 1 = full time)	TC
Level 3: The neighbourhood		
Socio-economic and cultural context or composition (I)	This is the average, at the neighbourhood level, of the factor scores generated in level 1 (the child)	NSE_BAR
Socio-cultural context or composition (II)	Percentage of persons between 25 and 59 years of age in the neighbourhood with studies below the average for the department. Source: 1996 Population Census.	BMEAN96
High-status occupations ^c	Percentage of neighbourhoods in which the proportion of persons with high-status occupations exceeds 35% (dichotomous variable, 1 = high-status neighbourhoods). Source: 1996 Population Census.	ASTATUS
Geographical concentration of neighbourhoods with an unfavourable socio-cultural composition ^d	This corresponds to the neighbourhoods classified in the high-high category on the basis of the LISA spatial autocorrelation index (LISA = Local Indicator of Spatial Association). This indicates neighbourhoods which have similar X-variable characteristics and are also geographically contiguous. In this case, the classification variable used was indicator (II) of the percentage of persons with studies below the average for the department. Dichotomous variable, 1=neighbourhoods with a high LISA index. Source: 1996 Population Census.	ALTA

Source: Prepared by the authors.

^a In the original formulation of the models, variables were included at the school level which were considered important for studies on learning. Some of them were subsequently eliminated, however, because of their lack of statistical significance. It was realized that their inclusion would have made it more difficult to read tables of results which were already quite complex. This was so in the case of teachers' seniority in the system and in the school, teachers' training, and the equipment and infrastructure of the school.

^b At the first level of classification, Uruguayan schools are divided up into urban and rural. In the case of Montevideo, there are only urban schools. In 1996 they were classified into four types of schools: ordinary schools, practical training schools, full-time schools and schools with priority needs. In our case, the category referred to by the models consists of the first two types. Unlike the others, the main feature of full-time schools is that they have an extended school day (7 hours), and most of them are schools in an unfavourable socio-cultural context. Schools with priority needs are so designated on the basis of administrative criteria which are not very clear and whose form of application has been subject to wide fluctuations over the years, but they are all located in the most unfavourable social contexts, and their teachers receive a special allowance.

^c Indicator taken from Kaztman (1999).

^d For more methodological details and the results of the classification, see Kaztman and Retamoso (2006).

IV

Results and analysis of models

Table 2 summarizes the results of the five models applied, each of which is analysed in the same table.

1. Empty model

The first step in the production of the hierarchical linear models is to estimate, through an empty or non-conditional model, the proportion of the total variance in the dependent variable attributable to each of the hierarchical levels considered.

In order to assess the appropriateness of working with a third level (the neighbourhood), two empty models are compared: one including that level and another not including it (table 3). In this way, we aim to verify if the inclusion of the neighbourhood as a third level accounts for a part of the variance in learning achievements which is significant enough to justify its inclusion. The evaluation is made through the intraclass correlation coefficient, which measures the percentage of the total variance corresponding to each level.

TABLE 2

Summary of models

Variable		Model 0	Model 1	Model 2	Model 2a	Model 3
		Empty	NSE ^a at 3 levels	Model + variables of pupils	With NSE Neighbourhood from the INE Census	Model 2 + status variable high and level of LISA
<i>Fixed effects</i>						
Intercept	γ_{000}	13.19 ^b	13.19 ^b	13.50 ^b	13.52 ^b	13.54 ^b
<i>Neighbourhood</i>						
Socio-economic level	γ_{001}	.....	3.55 ^b	3.32 ^b	-0.07 ^b	3.20 ^b
<i>School</i>						
Socio-economic level	γ_{010}	.....	2.47 ^b	2.16 ^b	2.12 ^b	2.16 ^b
Full time	γ_{020}	.....	.....	0.83 ^b	0.78 ^b	1.00 ^b
<i>Pupils</i>						
Socio-economic level	γ_{100}	.....	0.91 ^b	0.68 ^b	0.68 ^b	0.72 ^b
High-status occupations in neighbourhood	γ_{101}	.....	.....	.....	.....	0.40 ^b
High LISA index in neighbourhood	γ_{102}	.....	.....	.....	.....	-0.29 ^b
Socio-economic level of school	γ_{110}	.....	.....	0.58 ^b	0.58 ^b	0.60 ^b
Male	γ_{200}	.....	.....	-0.24 ^b	-0.24 ^b	-0.24 ^b
Repetition	γ_{300}	.....	.....	-1.38 ^b	-1.39 ^b	-1.36 ^b
Attendance at preschool education	γ_{400}	.....	.....	0.25 ^b	0.28 ^b	0.21 ^b
<i>Random effects</i>						
Level 3 (neighbourhood)	u_{00}	2.89	0.35	0.37	0.57	0.32
Level 2 (school)	r_0	2.38	1.69	1.56	1.61	1.57
Level 1 (child)	E	11.10	10.54	10.10	10.10	10.10
Intraclass correlation coefficient of neighbourhood (%)		17.6	2.8	3.1	4.6	2.7

Source: Prepared by the authors.

^a NSE = Socio-economic level.

^b Significant at the 95% level.

TABLE 3

Comparison of empty models at two and three levels

Fixed effects	2 levels		3 levels	
		Coefficient		Coefficient
General intercept or average	γ_{00}	13.000 ^a	γ_{00}	13.187 ^a
Random effects			Variance components	
Level 3 variance (neighbourhood)	---	---	u_{00}	2.888 ^a
Level 2 variance (school)	u_0	5.403 ^a	r_0	2.377 ^a
Level 1 variance (child)	r	11.102 ^a	e	11.103
Intraclass correlation coefficients (CCI)				
Neighbourhood		---		17.6%
School		32.7%		14.5%
Child		67.3%		67.8%
Deviation		57.714		57.630
Number of parameters estimated		2		4

Source: Prepared by the authors.

^a Significant at the 95% level.

The results of the empty model at two levels indicate that although the greater capacity for explanation comes from differences originating in the characteristics of the children, the differences in learning attributable to the school represent 32.7% of the total variance. In the model at three levels, in contrast, although the variables attributed to the child continue to account for most of the variance (67.8%), a substantial share of this (17.6%) is attributable to differences in learning between neighbourhoods: even more than the share attributable to the school. In short, the production of the empty model at three levels shows the statistical relevance of working with hierarchical models and including the neighbourhood as the third level.

We must acknowledge, however, that the fact that the neighbourhood explains a larger percentage of the variance in learning than the school may be due to the way the universe of our study was delimited. In other words, by excluding private schools we may have reduced the variance among schools in the same neighbourhood and increased the variance between neighbourhoods. This is so for at least two reasons. The first is due to the carry-over effect of the neighbourhood's social composition on the social composition of schools which, like the public schools, recruit their pupils in the same territory. The second is because in a given neighbourhood the private schools usually operate with selectivity mechanisms that are much more restrictive than those of the public schools.⁸

⁸ The study by Pavez (2004) on the results obtained by pupils in

2. Conditional models

With the aim of finding the model which best explains educational performance, in this section we will examine several such models. When including variables we opted for the greatest possible simplicity, giving preference to social composition variables of the school or the neighbourhood.

(a) Model 1

The first model includes three variables of socio-economic and cultural composition or level in the specification of the empty model at each of its levels: child, school and neighbourhood (nse_alu , nse_esc and nse_bar , respectively).

The results of this model give a general average (intercept) of 13.2 for learning performance in mathematics and mother tongue. The three variables of socio-economic level (NSE) are all significant, although the magnitude of their effects is different. The NSE factor of the neighbourhood is the one that shows the greatest incidence, which is the same thing as to say that the net effect on learning of an increase

the system for the measurement of educational quality in Chile (SIMCE) analyses three levels (child, school, commune) and obtains intraclass correlation coefficients of 69%, 26% and 6% respectively. The difference between these results and those of the present study may be linked with what was mentioned above, since in Montevideo we are working exclusively with the public schools and Pavez was working with public and private schools.

of one standard deviation unit in the NSE for the neighbourhood is greater than in the case of the school and the child. The NSE of the school likewise has more effect than the individual level. Thus, for example, while an increase of one unit in the NSE of the child has a net effect of 0.91 on learning, the same increase in the level of the school generates an increase of 2.47 and that of the neighbourhood gives an increase of 3.55 (it should be remembered that the NSE corresponds to a factor score for different indices).

(b) *Model 2*

Although the results of model 1 give an idea of the relative importance assumed by the NSE and its differing impact at the different levels of aggregation, the specification of that model does not incorporate some dimensions of key importance in the analysis of school performance. Model 2 does include them, however, for as well as the variables of the first model, it also incorporates other characteristics of children and schools. In the case of the children, we sought to find out if, even when controlling for their NSE, other factors such as their sex (whether they are male), their history of repetition (whether they repeated or not) and whether they attended preschool education (ASISPRE) affect learning.

At the school level, we also incorporated the type of school attended by the child. As already noted, in 1996 there were basically three types of schools in the Uruguayan educational system at the urban level: ordinary schools, full-time schools, and those with priority needs.⁹

Although the coefficient had the expected negative sign in the case of schools with priority needs, it was not statistically significant, so the variable was eliminated in this model. This low significance was probably due to the fact that, when controlled for the NSE at the three levels, the inclusion of this type of school did not in itself add any effect on learning.

⁹ It should be noted that other models were tried which, in addition to these variables, incorporated some characteristics of the schools which are usually considered to be important for the school process in the specialized literature. Thus, from the point of view of human resources, they took into account teaching experience, stability (seniority) in the school and teachers' training. From the point of view of physical and educational equipment, variables were included that took account of the infrastructure and teaching equipment found in the schools. The average size of sixth grade classes was also taken into account. However, none of these models showed that these considerations were statistically significant, although their coefficients were of the expected sign.

This model also incorporates the NSE of the school, not only in the intercept but also in the regression coefficient of the NSE of the child. The aim is to find out how sensitive variations in learning are to variations in the socio-economic status of children in schools of different average socio-economic status. The results of this model show some elements which are worth noting. Firstly, in spite of a slight reduction in the coefficients compared with the previous model, the effects of the NSE of the three levels continue to be significant and maintain the same order as before (3.320, 2.159 and 0.681 at the neighbourhood, school and child levels). Secondly, full-time schools increase the point of intersection by 0.832 compared with the rest of the schools. Thirdly, the effects on learning of the individual characteristics of the child (sex, repetition and preschool attendance) display reductions of -0.237 and -1.377 in the first two cases but a positive effect (0.253) in the case of preschool education. Finally, it is observed that the group prediction variable of the NSE of the school has a net positive effect of 0.580 on learning in the specific slant of the NSE of the child.¹⁰

(c) *Model 3*

Finally, we specified a new model which combines the variables tested so far with two variables at the neighbourhood level taken from the 1996 Population Census.

The social composition of a neighbourhood constructed through the aggregation of individual variables of the children attending its public schools does not necessarily correspond with the social composition of the whole of the population living there. The divergence may be even greater when, as in our case, the universe studied is made up only of the public schools. Just as we commented earlier that, in view of the greater tendency of private schools to recruit their pupils on a non-territorial basis, we sought through their exclusion to prevent the characteristics of children not living in a neighbourhood from affecting its classification, likewise, the fact of classifying a neighbourhood on the basis of the profiles of the population attending its public schools may be generating equally significant

¹⁰ Using the same logic as this model, table 2 gives a specification (model 2a) which, instead of using the neighbourhood NSE based on the data of the National Learning Assessment, uses the data of the 1996 Population Census. The findings are similar to those already mentioned.

skews, particularly in neighbourhoods where education is highly segmented.

In order to avoid such possible skews, the following model incorporates two variables from the 1996 Population Census. The first of these corresponds to a dichotomous variable which classifies neighbourhoods according to whether the percentage of high-status occupations —such as professionals, managers and technicians—¹¹ exceeds 35% of the total employed persons. The second variable is obtained by classifying the neighbourhoods of Montevideo dichotomously through the LISA (Local Indicator of Spatial Association) index, which shows spatial autocorrelation of the geographical sub-units of the local area in terms of an attribute or variable (identified in the GeoDa¹² programme as high-high). In this case, we used the percentage of the population of the neighbourhood between 25 and 59 years of age with studies below the average for the department.¹³ The indicator is a measurement which shows the neighbourhoods of low educational level which are contiguous or spatially related with other neighbourhoods with the same characteristic.

In general terms, the results of model 3 display the same characteristics as those analysed earlier. In other words, the pattern of statistical significance and magnitude of the coefficients is repeated, regardless of whether they refer to the NSE of the neighbourhood, school or child, as likewise in the case of the explanatory variables, such as type of school, sex, repetition and preschool attendance.

The most noteworthy element in model 3 is the incidence of the two dichotomous variables taken from the 1996 Population Census which seek to take account of the exposure to role models (occupational status) and the concentration of disadvantageous social situations. In both cases, the variables are included in

order to observe their effect on the slope between the NSE of the child and learning achievement (γ_{101} and γ_{102}). The results show that neighbourhoods where there is a predominance of high-status occupations display an additional positive effect on the slope formed by the relation between the NSE of the child and learning achievement. In contrast, the opposite phenomenon is observed in neighbourhoods concentrated in a context of low educational levels. The existence of a neighbourhood with low educational capital gives rise to a lower positive effect of the NSE of the child on learning achievement.

The conclusions of this analysis may be summarized as follows:

- (i) As regards the net effect on learning achievement, an increase of one unit in the socio-economic level of the neighbourhood has a greater effect than similar increases in the socio-economic levels of the school and the family. This ratio is maintained even when other characteristics of the school and the child which could affect learning are taken into account.
- (ii) Maintaining the above controls, in neighbourhoods where high-status occupations predominate there is an additional positive effect on the slope between the socio-economic level of pupils and their scores in the learning tests.
- (iii) With the same controls, the more extensive the geographical patch of neighbourhoods with low average educational capital, the lower the positive effect of the socio-economic level on the scores in the learning tests.

In short, the elements giving these results in a field in which there is still much to be discussed (see box) support the view that the social composition of the neighbourhood has significant effects on children's learning achievements.

¹¹ In line with the International Standard Classification of Occupations (ISCO-88) at the one-, two- and three-digit level.

¹² GeoDa is a geographical and statistical analysis programme developed by the Spatial Analysis Lab of the University of Illinois. For more information, see <http://www.geoda.uiuc.edu/>

¹³ For a more detailed account of the methodology and results, see Kaztman and Retamoso (2005b).

Box

PRECAUTIONS TO BE OBSERVED WHEN INTERPRETING THE RESULTS OF STUDIES
ANALYSING THE EFFECTS OF DIFFERENT CONTEXTS ON BEHAVIOUR

Even though the foregoing results concur with those of other studies carried out in the region (Solís, 2006; Torres, Ferreira and Gomes, 2004; Sabatini, Cáceres and Cerda, 2002) at least two precautions should be taken, especially when, as in this case, there is emphasis on the usefulness of the results for the formulation of effective social policies.

Firstly, as occurs in the great majority of studies linking contexts with forms of behaviour, it is very difficult to be certain that the results are not spurious, since they may be reflecting the incidence of unobserved characteristics of families that send their children to certain schools or live in certain neighbourhoods. It may be argued, for example, that among parents with similarly low levels of education and income, those with a greater “need for achievement” will be more tenacious in their efforts to obtain a place for their children in schools with a heterogeneous social composition. In such cases, the children’s better performance in the educational area could be attributed to the greater motivation for achievement of their parents than to the social composition of their schools or neighbourhoods.

The second precaution also refers to a methodological problem which should be taken into account when it is desired to link the results of the studies with policy formulation. All the aforementioned studies are synchronous studies: i.e., studies which compare at a given moment in time the school performance of children who have similar socio-economic characteristics and live in neighbourhoods (or attend schools) with different social compositions. If the controls are applied correctly, it seems reasonable to conclude that variations in the social composition of their contexts are one of the factors accounting for the differences in their academic results. Even if we accept this conclusion, however, it does not follow that moving a child from one homogeneously poor school or neighbourhood to another with greater social heterogeneity will produce the desired positive effect.

The main reason for this uncertainty is the recognition that the cumulative effects of prolonged exposure to situations of social exclusion can neutralize the possible virtues of interaction with persons from a different social background. Poor children who go through this experience usually display more emotional insecurity and less development of social and cognitive skills. Prolonged social exclusion can generate, in the families and children concerned, devalued self-images, low expectations of educational achievements and of the possibilities that such achievements will mean a significant change in their future living conditions, and reduced capacity for forming aspirations and deferring immediate gratification. It can also give rise to resentment against a society which excludes them and is governed by codes different from theirs. Life in urban ghettos or semi-ghettos also leaves its mark in the forms of the way people coexist, the more or less immediate transition from frustration to violence, and a lack of confidence in others and particularly in any form of authority.^a

Source: Prepared by the authors.

^a Control for skews in selection and for the effects of prolonged exposure to situations of social exclusion is only possible through refined (and costly) experimental methods. If these are not applied, then the proper interpretation of the results of studies on contextual effects and the applicability of those results to policy formulation will depend on the care with which researchers approach the controls corresponding to the experimental situations involved, but also on the reasonableness of the arguments used and their theoretical consistency.

V

Primary schools in a context of residential segregation in Montevideo, and the main responses of the educational system

1. The challenges

The intra-urban migrations which have taken place in recent decades increased the spatial concentration of households which had a low educational climate and were in the first stages of their family life cycle, thereby implying a parallel territorial concentration of school-age children in poor households.

Many of the areas in which poor households settled lacked the school infrastructure needed to receive massive inflows of pupils, thus giving rise to a need for heavy investments in infrastructure. At the same time, the results of studies on the effects of the social composition of schools and neighbourhoods on learning achievements revealed that the most important challenges lay not only in the needs of the municipalities involved but also, and in some cases primarily, in the problems arising from the conditions in which the children socialized. It was observed that the changes in neighbourhoods and families had changed the basic conditions of educability of the schoolchildren, thus facing the educational authorities with new and complex problems in programme formulation, the training of suitable human resources, and especially in the organization of pedagogical practices, as the children now displayed profiles markedly different from those of the population which the school system had attended in the past.

It is difficult to grasp the degree of complexity of these challenges unless at least two things are recognized from the start. The first is that the burden of the social reproduction of the population is not borne by a single institution but rather by a structure in which the actions of the educational system are linked up with those of the family and with what happens in the immediate community environments of the children. The second is that much of the success of institutionalized education depends on the smoothness with which the efforts and influences of these three spheres of socialization fit in with each other and the ability of the schools to make up for shortcomings in the other two spheres. What is clear is that when the

family and the neighbourhood fail to provide adequate support in this respect, the educational system has more difficulty in carrying out a function which is proper to it and is of key importance in the process of the integration of society on the basis of equity, namely, its ability to dissociate the educational achievements of children from their conditions of origin.

The challenges posed to the educational system by the new conditions of educability of poor children are in addition to the more general challenge of adapting curricula, teacher training and educational equipment to a rapidly evolving production system in which ever-faster technological change and the increasingly vital importance of knowledge impose unavoidable demands in terms of the training of the new generations.

Let us now look at some of the responses made by the Uruguayan educational system in its efforts to tackle the challenges posed by these changes for the achievement of a society integrated on the basis of equity.

2. The responses of the educational system

Firstly, in order for the system to be able to simultaneously face the problems of the deterioration of the conditions of educability of children and the new demands for higher skills, State investment in public education must be increased.

A comparison between the percentage of gross domestic product (GDP) that Uruguay has invested in education and trends in the proportions of GDP invested in this sector by the rest of the countries of Latin America and the Caribbean provides a frame of reference for evaluating the relative intensity of Uruguay's public investment in education in recent decades. It may be seen from table 4 that in 1964 public expenditure on education absorbed a proportion of GDP which was slightly higher than the average for the countries of the Latin American and Caribbean region as a whole, but from then on it remained at a level between a quarter and a third lower than the regional average.

TABLE 4

**Latin America and the Caribbean and Uruguay:
Comparison of public expenditure on education, 1964-2000**
(Percentages of GDP)

	1964	1975	1980	1985	1990	1995	2000
(1) Latin America and the Caribbean	2.6	3.3	3.8	3.9	4.1	4.5	4.1
(2) Uruguay	2.7	2.2	2.2	2.8	3.1	2.8	2.8
(2)/(1)	1.04	0.67	0.58	0.72	0.76	0.62	0.68

Source: Universidad de la República (UDELAR, 2000), on the basis of reports by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and data from the Planning and Budget Office and the Central Bank of Uruguay. The data for the year 2000 are taken from ECLAC (2005).

As a result, in the year 2000 Uruguay occupied the 19th place out of 22 countries of Latin America and the Caribbean as regards the intensity of the public financial effort aimed at improving education (ECLAC, 2005, table 1.3.9).

This relative lag in educational investment was offset by a number of measures which redirected expenditure in the sector with the aim of neutralizing the negative effects of the spread of child poverty on learning achievements. We refer in particular to the growth in special schools, the expansion of coverage of preschool education, and the strengthening of school dining rooms.

(a) *Special schools*

As already mentioned earlier, in the 1990s there was an expansion in the supply of public education at the primary level. The traditional model which only distinguished between urban and rural schools was left behind in favour of a model based on a range of different options which sought to deal with the increasingly evident heterogeneity in the situations of children through alternative forms of teaching and compensatory models. The formulation of educational policies was focused on the most vulnerable sectors, through the provision of two types of special schools:¹⁴ schools for critical socio-cultural contexts, and full-time schools.

Full-time schools began to operate in the early 1990s, through the conversion of existing ordinary

schools in the poorest geographical areas. In the early stages, their main contribution was the extension of the school day. Only in 1995 did they begin to implement a special educational and institutional project. As well as incorporating the innovative aspects of the new pedagogical proposal, this initiative speeded up the conversion of ordinary schools into this form of school. New classrooms were built, and teachers in these schools were given special monetary allowances. In decisions on their location, there was an improvement of the basic criteria both for the selection of schools with low socio-economic levels and for the identification of geographical areas where there had been sizeable increases in the child population.¹⁵

The schools in the “critical socio-cultural context” category are also located in the poorest environments, but unlike the full-time schools they only have a single half-day shift, do not have a special pedagogical proposal, and are based more on basic compensatory measures which seek to attract the most experienced teachers by giving them special salary allowances.¹⁶

¹⁵ For a more detailed description of the types of schools, see ANEP/CODICEN (2004) and Clavijo, Francia and Retamoso (2005).

¹⁶ At the end of 2005, the National Public Education Administration (ANEP), together with the Ministry of Social Development, put into effect a new programme called “Community Teachers”. This programme is aimed at the schools which are in a critical context but only have half-day teaching and consists of a body of teachers who work on a personalized basis, outside regular school hours, in order to give teaching support to children with low levels of school performance and improve the interaction between the children’s families, the school and the community through visits to pupils’ homes and joint work with families in their homes and in school. Although it is still too early to assess the results obtained, “Community Teachers” is clearly an important addition to the programmes aiming to reduce differences in learning achievement (CEP/MIDES, 2006).

¹⁴ The use of this term is justified in the sense that in primary education “special schools” are those that cater for children with some kind of drawback.

TABLE 5

Montevideo: Percentage of enrolment in 1st to 6th grade and its percentage variation between 1995 and 2004, by type of school

Type of school	1995	2004	Percentage variation
Ordinary urban schools ^a	76.5	71.1	-4.4
In a critical socio-cultural context	21.4	22.3	7.1
Full-time schools	2.1	6.6	217.4
<i>Total</i>	<i>100</i>	<i>100</i>	<i>2.8</i>

Source: Prepared by the authors on the basis of data from ADEP/CODICEN (2004).

^a Includes practical schools.

Table 5 shows the changes in the relative weights for the different types of schools between 1995 and 2004. The figures show a slight increase in the share of schools in a critical socio-cultural context but a much greater increase, albeit on a much smaller numerical base, in that of full-time schools.

Table 6 shows that in both 1995 and 2004 the distribution of schools was in line with the targeting objective, since most of the schools specially designed to expand the learning opportunities of the most disadvantaged children were located in the most unfavourable school and neighbourhood contexts. Moreover, over the period studied, the proportion of special schools (those in a critical socio-economic context and full-time schools) grew in the contexts where such growth was to be expected in line with the policy objectives. The big increase noted in neighbourhoods with a high social composition may possibly be due to the fact that the number of public schools in such neighbourhoods is significantly less than in the other neighbourhoods (for example, it is almost half that of neighbourhoods with a low composition). Furthermore, it cannot be ruled out that some neighbourhoods with a high social composition may contain within them small homogeneously poor areas and that the public schools, which generally recruit their pupils from areas smaller than a neighbourhood, only receive children from those areas.

(b) Preschool education

Another important initiative aimed at weakening the links of the mechanisms for the inter-generational

reproduction of poverty and social exclusion, and which was strongly boosted from 1995 on, was the expansion of enrolment in preschool education.¹⁷

The information collected over the last decade on preschool education in Uruguay reveals at least three regularities. The first indicates a clear expansion in coverage for children of 4 or 5. The second shows that preschool education helps to reduce repetition in the early years of primary education. The third indicates that the expansion of coverage mainly benefited children from the poorer strata. Taken together, the three tendencies denote a clear advance in social equity thanks to changes in the public system of preschool education (ANEP/CODICEN, 2002).

With regard to coverage, from 1991 on the public sector led the way in a significant increase in attendance at preschool education among children of 4 or 5 years of age in Montevideo. With respect to the total number of children of this age, attendance by four-year-olds increased from 23% to 51%, but in the private schools there was a decline from 40% to 28%. Something similar occurred in the case of children of 5, whose attendance rose from 42% to 73% in the public system but went down from 38% to 21% in the private schools. As a result of these tendencies, in 2004 over nine out of every ten children aged 5 and over seven out of every ten children aged 4 were attending public or private preschool establishments. The results of studies made by the Research and Evaluation Department of ANEP corroborate the importance of these advances for educational achievement throughout the school cycle (ANEP/CODICEN, 2005b).

Finally, with regard to the impact of the expansion of preschool education on equity, table 7 shows on the one hand the big boost given by the public sector to preschool education in the neighbourhoods whose social composition reflected the biggest disadvantages, and on the other the significant reduction this achieved in the differences in attendance at preschool establishments by children from neighbourhoods with different social compositions. When a similar analysis is made

¹⁷ In November 1998 Law No. 17,015 was promulgated, providing for compulsory preschool education for all children aged 5. This law laid down a maximum period of four years for the ANEP to generate the necessary conditions for bringing this about. The measure was aimed, among other aspects, at promoting the cognitive skills appropriate to a child's age, favouring his senso-motor maturity and affective growth, promoting the processes of socialization, and helping to forestall negative effects on his normal development due to deficiencies of a biological, nutritional, or family nature or contexts of higher risk.

TABLE 6

Montevideo: Percentage of special schools, by socio-educational composition of neighbourhood and socio-cultural context of school, out of total number of public schools in each category, 1995-2004

Socio-cultural context of schools ^a	Socio-educational composition of neighbourhood (terciles of education in 3-year period 2002-2004)							
	Low		Medium		High		Total	
	1995	2004	1995	2004	1995	2004	1995	2004
Unfavourable	53.8	54.6	36.0	54.2	33.4	80.0	48.6	55.6
Medium	7.7	18.8	3.1	9.4	6.3	33.3	4.9	16.7
Favourable	00.0	00.0	00.0	00.0	00.0	2.5	00.0	1.3
<i>Total</i>	<i>46.3</i>	<i>47.7</i>	<i>10.6</i>	<i>18.0</i>	<i>4.4</i>	<i>15.8</i>	<i>22.2</i>	<i>30.0</i>

Source: Prepared by the authors on the basis of data from the Continuous Household Survey of the INE and from ANEP/CODICEN (2004).

^a The "socio-cultural context of schools" classifies the total number of schools in the country according to an index which combines the educational level of the mothers of the children attending each school with elements representing the comfort of their homes. The index divides the schools into five categories ranging from very favourable to very unfavourable contexts. For more details, see ANEP/CODICEN (2004).

TABLE 7

Montevideo: Attendance at preschool education by children of four and five years of age, by educational level of neighbourhoods, 1995 and 2004
(Percentages)

Attendance at preschool education	Educational level of neighbourhoods (terciles of average years of schooling of population between 25 and 59 years of age) in 2002-2004			
	Low	Medium	High	Total
<i>Public sector</i>				
1995	40.9	41.8	32.6	38.4
2004	69.6	66.3	44.0	62.3
% variation 1995-2004	70.2	58.8	34.9	62.3
<i>Public plus private sectors</i>				
1995	56.8	74.3	83.0	70.3
2004	80.5	88.4	93.8	90.2

Source: Prepared by the authors on the basis of data from the Continuous Household Survey of the INE.

with identification of the socio-economic level of the households from which preschool children come, it is found that children from the neediest homes practically doubled their rates of attendance over the period (ANEP/Universidad Católica, 2003).

(c) *School dining rooms*

Within the framework of the new characteristics that poverty was assuming in Montevideo, the problem of the children's nutrition began to take on increasing importance, both in society as a whole and in the schools. The evidence of under-nutrition among schoolchildren elicited a rapid reaction from the educational authorities, who strengthened the existing school nutrition programmes and incorporated new elements, especially through the addition of school dining rooms and the "Glass of Milk" system to the social safety nets deployed by the State in view of the aggravation observed in the population's needs. The reaction by public primary education was not due solely to humanitarian reasons: it also reflected recognition of the impact of nutrition on children's learning capacity.¹⁸

¹⁸ The nutrition policies applied by the educational system receive strong financial backing from the so-called "primary school tax". This tax, whose amount goes directly to education, was approved in April 1986 under article 636 of the National Budget Law on Resources and Expenditure (Law No. 15,809), but it was only implemented as from 1990. The "primary school tax" is levied on urban, suburban and rural real estate in the whole country on the basis of the real values determined by the Department of the National Real Estate Register, and while it goes to various areas of expenditure (transport, equipment, repairs, etc.) most of the funds collected go to school nutrition. According to a survey made by the INE in 2004, the school nutrition system is the most extensive free nutritional system in the country.

Tables 8 and 9 show the situation in this respect in 2004. It may be seen from them that school dining rooms were located in the schools with the most unfavourable social composition and in those located in the most disadvantaged neighbourhoods.

TABLE 8

Montevideo: Percentage of primary schools with school dining rooms, according to the socio-educational composition of the neighbourhood, 2004

	Socio-educational composition of neighbourhood (terciles of educational level), for the three-year period 2002-2004			
	Low	Medium	High	Total
% of schools with a dining room	88.1	58.9	27.1	65.3

Source: Prepared by the authors on the basis of data from the Continuous Household Survey of the INE and from ANEP/CODICEN (2004).

TABLE 9

Montevideo: Percentage of primary schools with school dining rooms, according to the socio-cultural context of the school, 2004

Existence of a school dining room and % of children using it	Socio-cultural context of school			Total
	Unfavourable	Medium	Favourable	
% of schools with a dining room	90.9	56.6	25.4	65.3

Source: Prepared by the authors on the basis of data from ANEP/CODICEN (2004).

Ultimately, the extensive system of school dining rooms acted as another of the pillars of the public educational system, especially in those neighbourhoods which, because of their social composition, had the greatest nutritional needs. Thus, the schools increased their participation in an area which was previously restricted almost entirely to the family.

VI

Final considerations: measures to deal with the impact of residential segregation on the learning performance of poor children

In the last two decades of the twentieth century there was a significant rise in the growth rate of residential segregation in Montevideo. Although there were various factors that contributed to this rise, the main one was the prolonged deterioration in the levels of income and social protection of less-skilled workers. In these circumstances, many young families, with scanty human resources and few opportunities of gaining access to protected jobs, had to leave the central areas of the city and move out to the periphery, thus increasing the proportion of poor households in the first stages of family life and, hence, the proportion of children living in those areas.

The increase in the homogeneity of the social composition of neighbourhoods brought about similar changes among the users of local services such as

primary schools, health centres, transport and recreational services. In this way, the weakening of the links of poor residents with the labour market isolated them from the main economic circuits of the city and also from the main social circuits, due to the growing segmentation in the use of those services. These features changed the profile of households, schools and neighbourhoods, which are the three contexts most significant for the socialization of children.

Poor households had more problems than in the past in satisfying the basic needs of their members. Perhaps because of the effects of the weakness of their links with the market, their declining hopes of social mobility, or their growing isolation from the middle classes, these households showed a strong tendency towards unstable family arrangements and single-parent

families, which was reflected in a big increase in the proportion of children living with only one of their biological parents. Among other consequences, this phenomenon reduced the pooling of family resources for socialization—especially the availability of adults' time—and made it more difficult for parents to control their children, give them support in their school tasks and, in general, complement the efforts of the schools in the educational process.

The schools, for their part, were faced with growing difficulties in transmitting and generating learning skills in uniformly poor groups of children. Many teachers and school authorities in areas where there was a strong concentration of poverty were overcome by the level of unsatisfied basic needs of their pupils, by the feeble support they received from the children's families, and by the marked deficit in the levels of cognitive development and mastery of basic social skills displayed by the children they had to teach.

In turn, the new poor urban neighbourhoods tended to undermine rather than strengthen the potential virtues of neighbourhood socialization. The instability of patterns of community life, the shortage and low quality of the local institutions, and the lack of adults who could act as role models and effectively exercise informal social controls over children's behaviour helped to reduce the socializing force of the neighbourhood or, at least, to divert it from the conventional models which define education as the main path for social mobility and self-realization.

It may be gathered from the foregoing arguments that, unlike the past when it was an integrated city—when the harmonious union between the family, the school and the neighbourhood which complemented each other and gave mutual support had facilitated the work of the primary schools—the new mechanisms activated in Montevideo with the changes undergone by each of these important agents of socialization did nothing to benefit the educational performance of children. In so far as the families and neighbourhoods ceased to fulfill their complementary functions, the schools encountered formidable obstacles to the performance of their key role in the integration of the new generations, that is to say, their unique capacity to dissociate educational achievements from social origins.

Some of the new features of the social context, especially the high levels of poverty among urban children, did not go unnoticed by the educational authorities. Thus, in the early 1990s a reform project was formulated which sought to restore to the educational

system its traditional capacity to separate academic achievements from the socio-economic background of children.

As already noted in this study, in the implementation of that reform special attention was given to the location of services. The new preschool centres, special schools and school dining rooms were established in the neighbourhoods with the highest concentrations of poverty.¹⁹ Briefly, the strategy consisted of focusing the efforts of the educational system on the places where children ran the biggest risk of falling behind in their studies.²⁰ But there is no sign in the application of this strategy, however, that anything was done to deal with the higher-risk situations inherent in the changes in the social composition of the schools attended by vulnerable children or in the neighbourhoods where they lived. What form could such a sign have taken? One possible form could have been measures to stimulate the formation of heterogeneous groups through new educational establishments located on the borders between neighbourhoods with different social compositions. Another form could have been the institutionalization of systems of free transport of schoolchildren, together with the application of recruitment criteria in schools which would ensure a heterogeneous social composition and conditions of functioning which would facilitate interaction among children from unequal backgrounds. In short, there were no indications that any attempt was being made to promote experiences of contact and solidarity among children from different strata.

On the other hand, however, it is possible that even if the educational authorities recognized the advantages of interaction among children from unequal backgrounds in the same institutional context, they may have concluded that at all events it was possible and preferable to try to compensate for the disadvantages of schools which recruited a homogeneous population of poor children, by focusing physical and human resources on those schools, as indeed occurred in reality. This possibility raises queries such as the following: to what extent do these interventions succeed in reducing

¹⁹ The same may be said of the "community teachers" programme launched at the end of 2005. This programme concentrated on children with problems of low school performance attending schools which were located in a critical context and had only half-day education.

²⁰ Paradoxically, the territorial concentration of the poor makes it easier to implement targeted strategies.

the learning gap? What is their relative cost compared with alternatives based on “social mixing”? And even if they manage to reduce the learning gap: is this enough to progress towards the goal of a city integrated on the basis of equity? What happens with regard to the formation of social skills, of an early feeling of citizenship, and the probability of accumulating social capital—phenomena that find fertile ground in peer age groups which are heterogeneous in terms of their social origin and which represent vital resources for integration into society?

It may be argued, in favour of social mixing policies, that even taking into account the methodological precautions with which the results of studies on the effects of the school and neighbourhood contexts are now analysed, there is sufficient evidence, theoretically consistent conjectures and informed observations to conclude that those policies are closer to reality than other better known and more frequently used policies which only consider the school and the neighbourhood as spaces bringing together greater or lesser proportions of children with critical deficiencies. Along the same lines, it may be suggested that the time seems to have come to make a fundamental U-turn in the questions we ask ourselves about the link between education and social integration. Traditionally, we have asked ourselves about the educational thresholds needed for social integration, but it seems increasingly necessary to ask ourselves about the minimum levels of integration needed for the educability of our children.

With regard to the targeting of resources on schools in the neighbourhoods with the biggest concentrations of poor children, in contrast, it may be suggested that in contexts of growing inequality like those characteristic of Montevideo and other big cities of the region, the implementation of initiatives like those mentioned in the preceding paragraph, as well as corresponding to the “hard” areas of social policy (Kaztman and Gerstenfeld, 1990), perhaps is no guarantee of reductions in social distances.²¹ It is to be

suspected that in a large sector of the urban population a kind of perverse synergy has already been activated: geographical and social isolation between the urban classes further heightens the rigidity of the images that the classes have of each other, thus strengthening the resistance to interaction among people from unequal backgrounds. In these circumstances, it is no wonder that poor parents themselves prefer not to expose their children to contexts in which disadvantages of social origin are very obvious, considering that contact between unequal persons tends to generate rejection and a heightened feeling of relative shortcomings rather than stimulating emulation and adaptation. In these circumstances, the increase in residential segregation and educational segmentation brings us closer to and urban situation which clearly shows up the limits of the educational system’s ability to break the social determinism of learning results (Tedesco, 2006; Filgueira, Bogliaccini and others, 2006).

The foregoing considerations highlight some of the barriers limiting the contribution of education to the construction of societies integrated on the basis of equality. In order to overcome those barriers it appears necessary firstly to carry out an urgent redefinition of the rank given to the educational system within the national welfare architecture. As López (2005) says: “... it can be affirmed that the goal of good-quality education for all means making education one of the pillars of the articulation and integration of the various sectors of social policy”. What it means is strengthening its capacity to demand and articulate the support of other spheres of the State, such as those responsible for urban land planning. In this sense, it would seem desirable to start on the active exploration of the advantages and disadvantages, costs and benefits of the kind of social inclusion policies implemented in some European cities. These policies sought to integrate the most disadvantaged sectors of the urban population—including large numbers of foreign workers—not only by intervening directly in the location of public housing or by giving incentives to middle-class sectors to come and live in areas previously marked by homogeneous poverty, or ensuring a certain level of

²¹ This is particularly so in the most stratified societies of Latin America. When considering the relative costs of this type of policy, it should be borne in mind that in most of those societies the present forms of class relations are the result of lengthy processes of domination, negotiation and settlement of conflicts which are deeply rooted in national history. This means that social engineering aimed at changing basic aspects of the existing patterns of class relations is one of the hardest areas of social policy. In the case of education, resistance to interventions of the type mentioned above comes from all sides, and is all the more aggressive when the classes moving in

the principal social and economic spheres of the city have constructed stereotypes of the kind of persons who remain outside those spheres. In those cases, the more privileged classes may perceive the promotion of social integration through the school as a threat both to their expectations regarding the academic achievements of their children and to the maintenance of their own traditional social prerogatives.

social mixing in the formation of new neighbourhoods, but also by granting subsidies to prevent poverty from exceeding a certain level above which the costs of social inclusion measures rise exponentially (Musterd and Ostendorf, 1998).

To sum up, as the new forms of capitalism take root in the region, it is more and more evident that the slogan “Learn to learn and learn to live together” (Delors, 1996) refers to a task which goes beyond the limits of education and involves the whole of society.

(Original: Spanish)

Bibliography

- ANEP (National Public Education Administration) (1997): *Evaluación nacional de aprendizajes en lenguaje y matemática: 6° año de educación primaria. Segundo informe de difusión pública de resultados*, Montevideo.
- ANEP/CODICEN (National Public Education Administration/Central Administrative Council) (2002): *Educación inicial: logros, desafíos y alternativas estratégicas para la toma de decisiones*, Montevideo, Gerencia General de Planeamiento y Gestión Educativa.
- (2004): *Monitor educativo de educación primaria: tipos de escuela, contexto sociocultural escolar y resultados educativos. Segunda comunicación de resultados*, Montevideo.
- (2005a): El gasto educativo en cifras, *Estadísticas educativas series*, No. 5, Montevideo.
- (2005b): *Panorama de la educación en el Uruguay: una década de transformaciones, 1992-2004*, Montevideo.
- ANEP/UMRE (National Public Education Administration/Unit for the Measurement of Educational Results) (1996): *Evaluación nacional de aprendizajes en lenguaje y matemática: 6° año de educación primaria. Primer informe de difusión pública de resultados*, Montevideo.
- ANEP (National Public Education Administration/Catholic University) (2003): *Determinantes de la regularidad de la asistencia y de la deserción en la educación inicial uruguaya*, Montevideo.
- Betts, J., A. Zau and L. Rice (2003): *Determinants of Student Achievement: New Evidence from San Diego*, San Diego, California, Public Policy Institute of California.
- CEP/MIDES (Primary Education Council/Ministry of Social Development) (2006): *Programa de Maestros Comunitarios. Primer informe de difusión pública de resultados*, Montevideo.
- Cervini, M. and M. Gallo (2001): Un análisis de la exclusión social: la segregación residencial en los barrios de Montevideo, 1986-1998, thesis, Montevideo.
- Clavijo, M.C., M.T. Francia and A. Retamoso (2005): Las escuelas de tiempo completo: una manera de entender la enseñanza y el aprendizaje, part of the hemisphere-wide project “Elaboración de políticas y estrategias para la prevención del fracaso escolar”, Montevideo, Ministry of Education and Culture/National Public Education Administration.
- Delors, J. (1996): *La educación encierra un tesoro*, Madrid, Ediciones UNESCO.
- ECLAC (Economic Commission for Latin America and the Caribbean) (2005): *Statistical Yearbook for Latin America and the Caribbean, 2005*, LC/G.2264-P, Santiago, Chile. United Nations publication, Sales No. E/S.05.II.G.1.
- Filgueira, F., J. Bogliaccini and others (2006): Los límites de la promesa educativa en América Latina, in X. Bonal (ed.), *Globalización, educación y población en América Latina: hacia una nueva agenda política?*, Barcelona, Centro de Información y Documentación de Barcelona (CIDOB).
- Kaztman, R. (1997): Marginality and social integration in Uruguay, *CEPAL Review*, No. 62, LC/G.1969-P, Santiago, Chile, August.
- (1999): El vecindario importa, in R. Kaztman (coord.), *Activos y estructuras de oportunidades: estudios sobre las raíces de la vulnerabilidad social en Uruguay*, LC/MVD/R.180, Montevideo, ECLAC Office in Montevideo, May.
- Kaztman, R. and F. Filgueira (2001): *Panorama de la infancia y la familia en el Uruguay*, Montevideo, Catholic University of Uruguay.
- Kaztman, R. and P. Gerstenfeld (1990): The complexity of evaluating social development, *CEPAL Review*, No. 41, LC/G.1631-P, Santiago, Chile, August.
- Kaztman, R. and A. Retamoso (2005a): Spatial segregation, employment and poverty in Montevideo, *CEPAL Review*, No. 85, LC/G.2266-P, Santiago, Chile, April.
- (2005b): Segregación residencial en Montevideo: desafíos para la equidad educativa, document presented at the Seminar “Urban Governance and Intra Urban Population Differentials in Latin American Metropolitan Areas”, Austin, University of Texas, November.
- (2006): *Segregación residencial y diferenciales en las pruebas de aprendizaje en Montevideo*, in the press.
- Kaztman, R., F. Filgueira and A. Errandonea (2005): La ciudad fragmentada: respuesta de los sectores populares urbanos a las transformaciones del mercado y del territorio en Montevideo, in B. Roberts, A. Portes and A. Grimson (eds.), *Ciudades latinoamericanas: un análisis comparativo en el umbral del nuevo siglo*, Buenos Aires, Prometeo.
- López, N. (2005): *Equidad educativa y desigualdad social: desafíos a la educación en el nuevo escenario latinoamericano*, Buenos Aires, International Institute for Educational Planning/United Nations Educational, Scientific and Cultural Organization (IIEP/UNESCO).
- Macadar, D., J.J. Calvo and others (2002): *Proyecto segregación residencial en Montevideo: ¿un fenómeno creciente?*, Montevideo, Comisión Sectorial de Investigación Científica (CSIC).
- Musterd, S. and W. Ostendorf (1998): Segregation and social participation in a welfare state, in S. Musterd and W. Ostendorf (eds.), *Urban Segregation and the Welfare State: Inequality and Exclusion in Western Cities*, London, Routledge.

- National Institute of Statistics (1996): Censo de Población, Montevideo.
- Pavez, M.A. (2004): *Municipios efectivos en educación*, Santiago, Chile, University of Chile.
- Sabatini, F., G. Cáceres and J. Cerda (2002): *Residential Segregation Patterns. Changes in Main Chilean Cities: Scale Shifts and Increasing Malignancy*, Cambridge, Massachusetts, Lincoln Institute of Land Policy.
- Solís, P. (2006): *Efectos del nivel socioeconómico del vecindario en la continuidad escolar entre la secundaria y el bachillerato*, Mexico City, unpublished.
- Tedesco, J.C. (2006): La integración social y los nuevos procesos de socialización: algunas hipótesis de trabajo, in X. Bonal (ed.), *Globalización, educación y población en América Latina: hacia una nueva agenda política?*, Barcelona, Centro de Información y Documentación de Barcelona (CIDOB).
- Torres, H., M.P. Ferreira and S. Gomes (2004): Educação e segregação social: explorando o efeito das relações da vizinhança, in E. Marques and H. Torres (orgs.), *Segregação, pobreza e desigualdades sociais*, São Paulo, National Commercial Training Service.
- UDELAR (Universidad de la República) (2000): *Algunos tópicos sobre la educación en Uruguay: una aproximación desde la economía*, Montevideo, Secretaría del Rectorado de la Universidad de la República, May.