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Running Head: EDUCATIONAL VOUCHERS IN COLOMBIA

An Evaluation of the Programa de Ampliación de la Educación Secundaria (PACES):

The Use of Educational vouchers in Colombia

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## Introduction

Over forty years ago, Milton Friedman introduced the idea of educational vouchers to increase educational choice and efficiency (Friedman, 1962). Friedman foresaw a system in which parents dissatisfied with their children's school would be able to obtain a voucher from the government, which could then be used to pay for their children's education at the school of their choice, be it public or private. Other voucher proponents have built on Friedman's proposal, and have argued that a voucher system would give disadvantaged students access to better schools they would not be able to attend on their own, increase competition within the school system, and thus eventually create better schools all around (Belfield & Levin, 2002). Voucher opponents have argued that such a system would segregate students (Ladd & Fiske, 2001; Willms, 1996), working against social cohesion and equity. They further argue that vouchers would unfairly benefit the affluent and better educated (Ladd & Fiske, 2001; Levin, 1991).

In response to some of the arguments that have been made by voucher opponents, some have suggested targeting vouchers to specific populations. Targeted vouchers have been used both in the U.S. (Howell, Wolf, Campbell & Peterson, 2002; Rouse, 1997; Witte, 1998) and abroad (Patrinos, 2001). For the sake of discussion, this paper limits itself to discussion of vouchers in the developing country context, and more specifically, to the review of a targeted educational voucher program for secondary school students in Colombia during the 1990s.

### The Developing Country Context as It Relates to Vouchers

There are several reasons for discussing education in the developing country context. Recently, we have seen extraordinary development in Asian countries, which has not been equaled in Latin America (United Nations Development Programme, 2003). Some have cited a lack of investment in education and high dropout rates in Latin American countries as key factors in this discrepancy (Hallak, 1997). In further support of the importance of education development, this

author points to the fact that in today's industrialized world more advanced schooling is becoming standard; secondary education can no longer be seen as simply preparation for tertiary education, but rather an end in itself.

In the industrialized world we think of school choice as the choice between schools. In the developing world, however, poor public school provision and infrastructure may mean the choice between schooling and no schooling. Inadequate public school supply, especially in remote areas (Hallak, 1997; King, Orazem & Wolgemuth, 1998) and low quality public school delivery (Angrist, Bettinger, Bloom, King, & Kremer, 2001) have both been given as reasons for demand-side financing initiatives such as vouchers (Patrinos, 2002). Furthermore, as both Hallak and King, et al. concur, rapidly rising population growth in the developing world can only be expected to exacerbate public school supply problems in the future.

When we examine the distribution of public and private supply of education in the developing world, we find that private schools often outnumber public schools by a ratio of two to three to one (Angrist, et al., 2001). This ratio has led some to argue that vouchers for private schools would be a quick and easy way to ameliorate the deficit in public school provision in a cost-effective manner (King, Rawlings, Guitierrez, Pardo, & Torres, 1997). Also, vouchers targeted to low-income students could be used to access a currently unaffordable private education, thus increasing equitable access. These students' exit from the public system, in turn, would open more spaces in public schools, benefiting both public and private sectors. Targeted programs, such as the one in Colombia have been implemented in Mozambique, Indonesia and Morocco (Patrinos, 2001).

The prevailing perception in Latin America is that private schools provide a better education. Despite this assumption, once socio-economic status, contextual and peer effects are accounted for, there seems to be relatively little difference on achievement (Somers, McEwan, & Willms, 2004).

However, even if private schools do not produce better achievement, increased competition will efficiently encourage all schools to improve (Patrinos, 2002).

Additionally, once public voucher funds are invested, regulatory measures may be taken to improve private school performance. Moreover, the cost of building more public schools must be compared with the costs of funding student attendance at extant private schools with already available places. Given a surplus of private school places and excess demand in the public sector, vouchers may be a cost-effective manner to reduce this deficit. Indeed, the use of private school spaces to limit public expenditure has been successfully used in the U.S. state of Vermont for years (West, 1996).

From here, we will turn to a more specific analysis at the Colombian voucher plan, or Programa de Ampliación de la Educación Secundaria (PACES). The second section of this paper will be dedicated to an examination of the Colombian context and a full outline of the voucher program, including its finance, regulation and support service provisions. As we will see, these three policy tools can be used to affect specific goals and outcomes of a voucher program. A third section will provide a method for evaluation of program outcomes, and a fourth will discuss results. Section five will provide a brief look at how Colombia has progressed after the voucher program and offer conclusions.

## Colombia Background

### Historical Context

PACES was implemented in late 1991, as part of the government of President Cesar Gaviria's (1990-1998) decentralization initiative and continued through the presidency of Ernesto Samper (1994-1998)(Lowden, n.d.). Decentralization had begun in the 1980s, but reached its most significant legislation with the 1992 Decentralization bill. The education component of this bill

sought increased private sector participation in education and full secondary coverage by 2000 (King, 1997).

But the path to decentralization was not an easy one. It is also important to note that Gaviria's administration sought to implement this program while simultaneously faced with many serious challenges, including a national Telecom strike, country wide power rationing and Pablo Escobar's escape from prison (Lowden, n.d.).

With respect to education, Armando Montenegro (1995), then director of the National Planning Department, reviews factors needing attention. He claims that education was: "...characterized by low enrollments, deficient quality and institutional confusion...[Education centralization] was successful in achieving its political goals...However, it was costly in terms of efficiency and institutional development." p. 3.

There were also other obstacles. Historically, education in Colombia had been highly centralized, and the national teachers' union (FECODE) was strongly opposed to decentralization. Traditionally, teaching positions had been brokered and given out as political favors (Lowden, n.d.), and the powerful union used the threat of strike as a key element to manipulate the Ministry of Education (Montenegro, 1995).

Administratively, there were the also major challenges for the shift in power from central to local authority. On the educational side, King, Orazem, and Wohlgemuth (1998) question whether municipalities, teachers and parents were ready for the new responsibilities of decentralization. Given the fact that even mayors had been appointed by the central government until 1989 (Montenegro, 1995), rather than held accountable to a voting public, this seems a reasonable question. On the financial side, Montenegro cites a lack of financial mechanisms that slowed and muddled the transition.

There is no doubt that the reform's goals of increasing accountability at local levels and creating more equity and a "greater space for participation in decision making processes...to guarantee not only better public service provision, but a more democratic polity" (Lowden, n.d., p.2) are noble. However, on analysis it becomes equally obvious that municipalities and other actors in the process were unprepared for their new roles (Hallak, 1997).

### Education in Colombia

Education spending in Colombia in the 1970s was the lowest in Latin America. By the 1980s the situation had improved, and Colombia spent 7.5% of its GDP on education (Van der Gaag, 1995). In further support of this progress, Calderon (1996) notes that between 1960 and 1975 the average years of schooling in Colombia increased from 2.5 to 5.5. Furthermore, by 1990 the country had reached 85% primary enrollment. This is in sharp contrast, however, to the less than 50% secondary enrollment (Turbay, 2000). An explanation of low secondary enrollments can be attributed to low quality provision due to inadequate teacher training and materials, high costs, overcrowding and children's need to work (Hallak, 1997). Using more recent data, Angrist et al. (2001) further show how this gap is unfairly distributed across an economic scale. For the population at large, the primary/secondary enrollment gap is 14%, but in the lowest quintile the gap is nine percentage points higher. Any education reform would have to take into account this discrepancy between primary and secondary enrollments, especially at the bottom end of the economic scale.

Further inequities in secondary education also include inequities in spending. It is estimated that while low-income families spend 9% of their income on secondary education, high-income families only spend 1.7% (Calderon, 1996). Furthermore, private school provision accounts for 40% of secondary education. As Calderon points out, low-income students have no choice but public school, and schools are forced to work between two and three shifts to accommodate public school students (King, et al., 1997; Van der Gaag, 1997). At the same time, most upper middle class and

upper class parents send their children to private schools. As such, the most economically (and presumably politically) powerful segments of the population have no vested interest in the provision of quality public education, and there is no incentive for improvement.

### The Colombian Voucher Plan

In collaboration with the World Bank, the PACES program was initiated in late 1991 and was later terminated in 1998 (Lloreda Mera, n.d.) because of bureaucratic and political obstacles (Ulpiano, Gaviria, Ortiz & Henao, 2001). In its entirety the program served over 125,000 students (Ribero & Tenjo, 2001), peaking in 1993-94 (King, et al., 1997). In an attempt to counter fears of politicization and central government management which would discourage participation, it was administered through the Instituto Colombiano Educativo y Estudios Técnicos en el Exterior (ICETEX), which had previously managed study abroad programs, and voucher payments were made directly through the Banco Central Hipotecario (BCH) (Turbay, 2000).

#### Program Goals

As expected, the PACES program sought to increase secondary enrollments (King, Orazem, and Wohlgemuth, 1998; Lloreda Mera, n.d.; Ulpiano, et al., 2001) by exploiting the existing strong private infrastructure to expand capacity quickly (Calderon, 1996; Lee & Wong, 2002; Van der Gaag, 1997). It also targeted students in the lowest two economic quintiles (Carnoy & McEwan, 2001; Ribero, 2001).

Other goals included increased efficiency (Lloreda Mera, n.d.), and a re-distribution of resources through targeting that would increase equity and take advantage of a high rate of return for education, while also promoting private institutions (Calderon, 1996). It is with these goals in mind that the program finance, regulation and support services were structured.

#### Finance

The price of the voucher was to be fixed, and was calculated by averaging tuition for private schools in Bogota, Medellín, and Cali, the country's three largest cities (Angrist, et al., 2001). When tuition exceeded the voucher amount, parents could then add on the additional amount through personal expense (Turbay, 2000). As noted before, the fact that payments could be made directly to the school through the BCH was expected to provide a financial incentive for school participation (Calderon, 1996). Payments would be made upon presentation of a list of students by the school director (King, et al., 1997).

The cost of voucher finance would be split between the municipality and the central government, with the central government covering 80% of the voucher and the municipality making up the final 20% (King, Orazem, & Wohlgemuth, 1998). Municipalities and ICETEX would decide together how many vouchers the municipality would finance (King, et al., 1997), and payments would be made to schools three times a year (Turbay, 2000).

As will be discussed later under evaluations and costs, it was expected that municipalities with low levels of under-served students, an elastic supply of private schools and a strong private school tradition would participate. It was also expected that schools of moderate tuition would participate with the most frequency (King, Orazem, and Wohlgemuth, 1998). The most inexpensive private schools were not expected to participate because they were not permitted to raise their tuition in response to the voucher program (Angrist, et al., 2001), and because poor students would most probably be able to afford them without the voucher. The most elite private schools, on the other hand, would remain unaffordable even with the voucher unless it provided additional school specific scholarship money.

### Regulation



In the implementation of the program, regulations were imposed regarding students, municipalities and schools. Later we will evaluate how successful these regulations were at obtaining the program goals.

To be eligible for the voucher, students must provide proof of their attendance and graduation from a public primary school, and be a member of one of the two poorest economic quintiles in the country, and be no more than 15 years of age (Kremer, 2002; Van der Gaag, 1997). Economic status was measured geographically, and participants were expected to present proof of address as proof of economic status, the most common form being through presentation of a utility bill (King, et al., 1997; King, Orazem, and Wohlgemuth, 1998). The public primary school attendance criterion also provided added assurance that the student belonged to the target economic population, as private school attendance correlates highly with economic status (Angrist, et al., 2001).

Vouchers could be renewed annually as long as a student continued their studies, however, a student who was left back would be dropped from the program (King, et al., 1997; Turbay, 2000). It is expected that this would provide students with a financial incentive to do well academically, but there were also concerns that schools, not wanting to lose the voucher monies might pass students with inferior academic performance (Angrist, et al., 2001).

Municipalities of 10,000 or more inhabitants, located less than 50 kilometers from a departmental capital and with three or more private schools were eligible to participate (Van der Gaag, 1995). In the event that a given municipality had a surplus of applicants for vouchers, students would be selected at random by lottery. ICETEX provided municipalities with software and training to facilitate this process (Angrist, et al., 2001). In addition, municipalities choosing to participate were required to maintain a system of accounts set according to a nationally prescribed standard (King, Orazem, and Wohlgemuth, 1998). ICETEX was to be responsible for regulation of municipalities and their participation (King, et al., 1997).

Regarding schools, only private schools were eligible to receive a voucher; that is to say a student could not use the voucher to transfer from one public school to another (Calderon, 1996). New schools entering the program were required to provide a three year plan, and after 1996 participation was limited to non-profit private schools (Angrist, et al., 2001). In terms of school monitoring, ICETEX was expected to complete on-site reviews of participating schools three times a year (King, et al., 1997). There is little discussion in the literature regarding any entrance requirements or other mechanisms established by individual schools that might have biased the acceptance of voucher students. A more complete analysis of participating schools, however, will follow in the results section of this paper.

### Support Services

Minimal evidence of support services is seen in the literature, which is surprising given the program's goals is to serve a marginalized population. In terms of information, parents were provided with lists of participating schools in their city (Turabay, 2000). In addition, political officials visited municipalities to promote the program, announcements were made on local radio stations and advertisements were placed in local newspapers. Furthermore, program applications were available in newspapers, as well as local ICETEX offices, and could be photocopied (Calderon, 1996). ICETEX was responsible for recruiting schools and selection of students (King, et al., 1997).

There is no discussion of transportation provision. This is again remarkable, given that the program's economic selection criteria assumes that economics and geography are inextricably linked. One study even uses tuition as a proxy for indicator of academic quality (King, Orazem, and Wohlgemuth, 1998). And yet, if better schools are more expensive schools, they are less likely to be located in poorer areas. If students wish to upgrade to these schools they will most probably face increased transportation costs.

### Evaluation Criteria

In evaluating the success of Colombia's voucher program, we will use Levin's (2002) criteria to determine the extent to which the program delivered on its promises of increased efficiency, equity, freedom of choice and the extent to which it is likely to have increased social cohesion within Colombian society. However, we must first clearly define what we mean by each of these terms and set benchmarks by which we can judge relative successes and failures.

### Benchmarks

Efficiency can be defined as maximizing output for a given set of inputs. In the educational realm, we must measure efficiency not only in terms of student achievement and educational expenditures, but also educational attainment and non-educational outcomes. Within achievement, we will look at student performance on standardized tests, which allows for measurement in different academic areas, as well as cross grade level comparisons. In terms of attainment we can look at grade repetition and level of education completed. Non-educational outcomes, such as future earnings and hours worked will also be discussed. For costs, we will discuss costs both to families, municipalities, the central government, and other agencies involved, including ICETEX. For all these cases we must question what benefit was generated in view of the costs expended. For families, we can measure if participation provides economic and educational benefit, and at what cost. With respect to the municipal, central government and ICETEX we can measure how effective the program was at expanding secondary enrollments and at what cost. Especially in view of the doubts expressed in the literature, it will be important to review if municipalities and ICETEX were able to handle their new responsibilities successfully.

Increased equity, especially for students from the lowest economic strata, was also one of the main goals of the program. Equity can be defined as providing fair access to educational resources. Thus, in evaluating equity it is important to look at how effectively these populations were targeted and if they were able to avail themselves of the program's services. Additionally, we will look at

geographic participation to evaluate rural/urban equity distribution. In observing the provision of service we will examine teacher and school characteristics to see if students participating in the program had access to equivalent schools and instructional personnel.

Connected to the issue of equal access is the issue of choice. Complete freedom of choice could be defined as a situation where students could attend any school of their choosing, unfettered by economic, transportation or other constraints, and where schools would be considerably distinct in their character so as to make that choice significant. Did students who participated in the voucher program have expanded choice in reality? To evaluate this question we will look at how many and what type of schools and municipalities participated in the program. Additionally, we will examine supply issues to see how supply constraints and regulations on school participation affected the expansion of choice.

Lastly, we will review the probable outcomes for social cohesion given the aforementioned analysis. For the purposes of this discussion, social cohesion addresses the extent to which a school functions to unite individual people as members of a society with common beliefs and values. This criterion is perhaps the most difficult to measure quantitatively, and is the least mentioned in the literature. However, evidence of increased community participation and the extent of heterogeneity among schools should give us a sense of whether students are encouraged to have a voice and participate in their environment, or being marginalized into a particular type of school with a particular type of student.

## Results

### *Efficiency*

*Achievement.* In terms of student achievement on standardized tests, results are mixed. Angrist et al. (2001) found the most promising results, citing that PACES participants scored .2 standard deviations higher (the equivalent of one grade year) than comparable non-participants who

had not been awarded a voucher on standardized tests of mathematics, reading and writing. The authors further emphasize the significance of this difference over a time span of only three years that the PACES program had been functioning at the time of data collection. Results for the ICFES test, which measures language, math, science and social studies, and is used as a secondary exit exam, were not as clear. Ribero, Tenjo and Sanabria's (2001) analysis claim small, but statistically insignificant gains. This is corroborated by the Ministry of Education's report (Lloreda Mera, n.d.) of small gains (mostly one percent) in all areas of the test. In contrast, King et al. (1997) report no difference for language and mathematics. It is important, however, to view these figures contextually, and understand that they do not all represent the same sample population or statistical analysis. Most of Angrist et al.'s data, for example, comes from a sample in Bogota. This population was chosen for logistical reasons, but also because lottery use allowed for better statistical control. But it is also possible that in terms of test results the Bogota sample is not representative of the program at large. Broadening our review even further, is the fact that scores on the ICFES decreased by 20% for the country at large between 1993 and 1998 (Lowden, n.d.). In view of this, maintenance of equivalent scores represents a significant improvement over the population at large.

In terms of grade repetition, voucher lottery winners in Angrist et al.'s (2001) Bogota sample were 5-6% less likely to repeat a grade. The authors first hypothesized that this effect might be due to a school's increased reluctance to fail students, as doing so would mean the loss of voucher funds. However, the data on increased student achievement in their study supports the idea that this is not the case. Thus we can argue that a financial incentive for student achievement was successfully created (Kremer, 2002). Calderon (1996) also reports promotion seven percent higher than the national average, but does not address the issue of a school's financial motivation to pass voucher students.

As alluded to earlier, performance was not equal at all schools. Consistent with existing research, pre-existing and non-profit schools performed best (Carnoy & McEwan, 2001). A formal recognition of this can be seen in the government's decision to limit participation to non-profit schools after 1996 (Angrist, 2001; King, 1997). Additionally, schools in some departments were able to produce better results than others due to effective leadership and stringent regulation. Progress in the department of Antioquia is mentioned as an example of this (Calderon, 1996).

The Ministry of Education also reports high scores on student achievement, claiming to have surpassed their voucher creation goal by 5%, and training of school officials by 310% (Lloreda Mera, n.d.). This report, however, appears to have been created after the program ended, and it is unclear as to what the original goals on these two variables were, so should be viewed with caution.

*Attainment.* In terms of attainment there is a consensus that participants attained a higher level of education. Patrinos (2002) found that participants were 13-15% more likely to have completed 8<sup>th</sup> grade. Angrist (2001) finds a slightly lower effect. Additionally, Kremer (2002) notes slightly stronger effects for girls.

Participation also raised secondary enrollments (Calderon, 1996), particularly during the last two years of secondary school, and increased secondary completion (Kremer, 2002; Patrinos, 2002). The Ministry of Education report reports gains of 2.8 to 29.4 percent, tabulated by province. These effects were especially strong in the provinces of Atlántico (29.4%) and Bolivar (24.5%) (Lloreda Mera, n.d.).

*Non-educational outcomes.* PACES student participants worked fewer hours (Patrinos, 2002), an effect that was stronger and more precise for girls (Angrist, 2001), and were 20% more likely to say that schooling was their primary activity (Ribero, Tenjo & Sanabria, 2001). Furthermore, assuming current rates of return on education in Colombia, it is estimated that

participants could expect a future earnings increase of between \$36 and \$300 dollars per year (Kremer, 2002).

*Costs.* In the realm of cost-effectiveness, there seem to be four important factors: one concern regards the extent to which the municipal and bureaucratic agencies involved in program administration were prepared to complete the tasks involved in successful program management. A second concern regards the voucher's staying power, that is to say its ability to compete with inflation and other increasing costs over time. A third concern regards supply constraints, and a fourth the actual cost of participation to families.

Despite the Ministry of Education's claims of training (Lloreda Mera, n.d.), the most pervasive problem appears to be the lack of sufficient infrastructure for program implementation. During program implementation, common delays in reimbursement payments to municipalities often extended almost a year (Turbay, 2000) and were the most frequently cited complaint by schools choosing to leave the program (Ribero, Tenjo & Sanabria, 2001). At times, this forced municipalities to step in and face the financial burden (Lloreda Mera, n.d.), but at others schools faced financial burdens. The program had sought to provide ease of payment, but central government funding was still a complex, bureaucratic process (King, et al., 1997).

Additionally, ICETEX was unable to handle the immense regulatory tasks they faced, which was evidenced by a complete lack of data during the program's first year (King, et al., 1997). In the end, bureaucratic obstacles have been a major criticism of the PACES program (Montenegro, 1995).

Over time, although the voucher amount increased, it did not keep pace with inflation (Angrist, 2001), which explains Ribero, Tenjo and Sanabria's (2001) data that 64% of schools leaving the plan complained that participation was not financially feasible. A further burden to the voucher amount was a 6.7% annual increase in per pupil spending (Lowden, n.d.). With the advent of a large increase in teacher salaries negotiated by FECODE, in 1997, the voucher's value suffered a

large blow. Facing this and dwindling support for the program, the Ministry of Education decided to limit the number of vouchers funded to the approximately 5,000 funded by the World Bank (Kremer, 2002).

PACES was most successful in areas with a large concentration of private schools and a strong private school tradition (Patrinos, 2002; Kremer, 2002), where implementation would be least expensive. Participation was also strongest as the public school gap in secondary places approached sixteen places, and then decreased sharply (King, et al. 1997; King, Orazem, and Wohlgemuth, 1998). It was theorized that since this number approximated the number of students in a class, it also represented the point at which it would be less costly to create more public school places (i.e. another class).

When asked what percentage of schooling costs the voucher actually covered, 80% of school directors claimed the voucher covered 80-95% of schooling costs. Families, on the other hand, estimated the figure to be about 65% (Ribero, Tenjo & Sanabria, 2001). This discrepancy may be due to increased expenses related to voucher use, such as transportation, books, food, etc. (Montenegro, 1995) to which school directors may not be as finely attuned.

Moreover, if students are using vouchers to attend schools at a greater distance from their homes, as already discussed, this is a reasonable expectation. It is estimated that many voucher students would have attended private schools, but instead used their vouchers to “trade up” to a more expensive private school. On the other hand, students who were induced to switch from public school to private school increased their educational spending by 70% (Angrist, et al., 2001). This may be measured against increased future earnings (Patrinos, 2002), however, it is important to note that for families in the lowest economic strata such long term planning may represent a difficult sacrifice in the short term.

*Equity*



In evaluating equity we can ask three main questions. Was participation among municipalities equitably distributed across the country, or was participation concentrated only in certain areas? Were the characteristics of schools accepting vouchers similar to those that did not? Finally, did the program effectively actually serve its target population?

Municipal participation was inequitably skewed towards urban areas with a large percentage of private schools. Additionally, ten departments accounted for 70% of total participation, with 13% concentrated in Bogota alone (King, et al., 1997). Furthermore, the authors found that participating municipalities had higher tax revenues, and approximately five times as much private school provision at the primary level. Moreover, they had on average 36% more under-served students and up to three times more participating schools than public schools. In view of the evidence on cost effectiveness this data is not surprising, but it does raise concerns about geographic equity, where schools were likely to be located and which students the program was able to serve.

With regards to the creation of voucher schools, catering specifically to voucher students (Turabay, 2000; Calderon, 1996), cites low maximum concentrations of voucher students at even the lowest achieving schools, and parental preferences for voucher schools over public schools that were subject to frequent strikes.

Participating schools provided similar class sizes as public schools, although classes were larger than non-participating private schools (King, et al., 1997). Participating schools also scored similarly to public schools on measures of student motivation, extra curricular activity and teacher absence (Ribero, Tenjo & Sanabria, 2001). In terms of other teacher characteristics, however, these authors found extreme differences. Public teachers' pay was almost twice that of PACES teachers, which was also less than non-participating school teachers. Public school teachers also averaged twice the time in schools and had more training. In addition, 56% of PACES teachers claimed they worked other jobs in addition to their teaching, at an average of 20 hours per week and earning 70%

more than at their teaching job. Only 33% of public, and 44% of non-participating school teachers claimed to work other jobs.

In further comparison to public and non-participating schools, PACES schools were scored high quality only 11% of the time, as compared with 36% for public schools and 51% for non-participating schools on government ratings (Ribero, Tenjo & Sanabria, 2001). PACES schools also tended to charge less and serve students from lower socio-economic backgrounds (Kremer, 2002), and were more likely to be vocational and technical, rather than traditional academic schools (King, Orazem, and Wohlgemuth, 1998).

With regards to students, Ribero, Tenjo and Sanabria (2001) found that of students aged eleven to nineteen in Bogota, Baranquilla, Cali and Medellín who were not attending secondary schools and who listed economic obstacles as their principal reason for not doing so, only 8-30% applied for vouchers. The authors posit one possible attribution might be a lack of information about the program. In terms of targeting, the authors also found that the program had been successful in targeting students from the first and second quintile, but that the second was over-represented. Given the data on the personal expenditure required to switch from public to private schooling, regardless of the voucher, it is not surprising that the poorest students (to whom this expense would correspond) choose not to participate. In this sense, as it was structured, the voucher is a non-option for the poorest students. This is supported by Angrist et al.'s (2001) data that only 15% of participants actually switched from public to private.

Another possible explanation for bias would be the fact that students were able to “add-on” to the voucher amount, giving more possibility to those of better economic means. Moreover, the extent and form in which the program was publicized (through newspapers) could be another unintentional source of self-selection that would favor a more educated population. A final source of concern is the requirement that students present a utility bill or proof of address. At the lowest end of the economic

spectrum it would be reasonable to question the ease with which students would be able to produce such documentation.

### *Choice*

It is clear that the program did provide some measure of increased choice, especially in urban areas. But this choice was generally limited to vocational and technical schools, charging mid-level tuition in only 20% of the country's municipalities (King, et al., 1997). As discussed previously, choice was severely constrained by supply, and new schools that sprung up in response to the voucher program did not offer as high a quality of education (Carnoy & McEwan, 2001). This was so much the case that the government was moved to prohibit for-profit schools' entry into the voucher program (King, et al., 1997).

The program probably opened up some public school places by moving a small number of public students into private schools (Kremer, 2002). However, many of the participating students reported that they would have attended private school anyway. In this sense their choice was increased by virtue of their ability to "trade up" to a more expensive school (Angrist, 2001), however, doing so implied increased personal expense.

As noted before, bureaucratization and political opposition provided healthy opposition, and the number of students participating in the program peaked only a few years after it had begun (Montenegro, 1995). Given the number of vouchers actually awarded (Turbay, 2000) choice was not significantly increased.

### *Social Cohesion*

Social cohesion is little mentioned in the literature, but we can look at two questions. First, is the program privatizing education and segregating students? Secondly, did the program increase community involvement at all levels? In terms of the first question, it does seem that the program did filter a specific type of student into a specific type of school. However, it does not seem to have

pushed that many more students into private schools than would have been there anyway. In fact, if Angrist et al.'s (2001) hypothesis, that the program allowed students to “trade up” is true, it could be argued that there was more mixing of lower income students to mix with higher income students than there would have been without the voucher.

In addition, research does seem to indicate that students in the program were more involved in their education, had more knowledge of curriculum, and felt as if they were listened to when they voiced concerns (Lloreda Mera, n.d.). Considering that this process involves together different stakeholders: administrators, teachers, students, parents, etc., it would be fair to say that in some small measure it is likely to have increased social cohesion. However, more research is definitely needed in this area.

### Conclusion

In 1999, Colombia effectively terminated the PACES program (Lloreda Mera, n.d.). The then director of the National Planning Department criticized the reform for its unfulfilled promises and politicization, reiterating the need for an expansion in the education sector if the country is to sustain its growth (Montenegro, 1995). Results of a failure to effectively target students of the lowest economic strata are consistent with reviews of the country's social safety net that cite its failure to sufficiently protect the most vulnerable. More specifically, the same report also found that secondary enrollments in all but the richest quintile decreased by 20% in the period 1996-2000 (Buillon, 2002). Clearly, more reform is needed. Currently the country is experimenting with other forms of educational privatization, similar to educational management organizations (Ulpiano, et al, 2001).

Such research suggests directions for the future. A continuing theme has been the political opposition that the PACES program faced and the inadequacy of infrastructure, both in terms of public provision and regulation of the reform itself. Limited long-term evidence is also a problem. The program did not exist long enough to provide data on students beyond a fourth year, two years

short of Colombia's six years of high school, and much of what is presented here necessarily predates even that qualification.

Selection bias in the literature is also an issue. Angrist, et al. (2001) are open about their sample choice: Bogota had been running longest, had conscientious data collection, but it was also where their survey team was based. In another case, instead of focusing on Cali, subjects were chosen from a suburb because they had telephones. While practical considerations are important in data collection, it is also important to consider how this biased the sample. Certainly subjects with telephones would be expected to be more affluent than those without.

The PACES program focused almost exclusively on students from the second lowest economic strata in urban areas for a relatively short period of time, to a relatively small quantity of students. It sought to provide more equitable access to education, and yet the clearest conclusion that can be drawn from what evidence exists, is that it provided neither equitable schools nor distribution of resources, either geographically or economically. This does not mean that results were all negative. It did expand the number of places, and therefore, enrollments. However, it does point to the need for more comprehensive research and reform.

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