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Education Strategy Paper

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ABBREVIATIONS AND ACRONYMS

ACE	Asociación Comunal para la Educación
AECO	Asociación Educativa Comunitaria
AED	Academy for Educational Development
AMSS	Municipal Area of San Salvador
ASP	Autonomous School Program
Bayan	Indigenous Socio-Economic Development Association
CAD	Centros de Aprendizaje Docente
CEB	Basic Education Centers
CECC	Coordinación Educativa y Cultural Centro-Americana
CEDHECA	Nicaraguan Atlantic Coast non-governmental
COEDUCA	Comités Educativos
EBI	Educación Bilingüe Intercultural
ECAP	Evaluación de Competencias Académicas y Pedagógicas
EDUCO	Educación con Participación de la Comunidad
EFA-FTI	Education for All - Fast Track Initiative
FEPADE	Fundación Empresarial para el Desarrollo Educativo
GCR	Gross Completion Rate
GER	Gross Enrollment Rate
IEA	International Association for the Evaluation of Education Achievement
INICE	Instituto Nacional de Investigación y Capacitación Educativa
LSMS	Living Standards Measurement Survey
MECD	Ministry of Education
MINED	Ministry of Education
MINEDUC	Ministry of Education
MOE	Ministry of Education
NER	Net Enrollment Rate
NEU	New Unitary Schools
OECD	Organization for Economic Cooperation and Development
OEI	Organización de Estados Iberoamericanos
OREALC	Regional Education Office for Latin America and the Caribbean
PAES	Prueba de Aptitud para Educación Secundaria
PEBI	Bilingual Intercultural Education Program
PISA	Program for International Student Assessment
PRAF	Programa de Asignaciones Familiares
PREAL	Partnership for Education Revitalization in the America
PROHECO	Proyecto Hondureño de Educación Comunitaria
PRONADE	Programa Nacional de Autogestión para el Desarrollo Educativo
PRONERE	National Assessment System
RCM	Reconstructed Cohort Method
SAT	Sistema de Aprendizaje Tutorial
SBM	School-based Management Reforms
SFP	Survival Function Plots
SIMCE	Sistema de Medición de la Calidad de la Educación

TIMSS	Third International Mathematics and Science Study
TSL	Tutorial Learning System
UMCE	Unidad de Medición de la Calidad de la Educación
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPNFM	Universidad Pedagógica Nacional Francisco Morazán
WDR	World Development Report

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Chapter I: A Diagnosis of Educational Performance in Central America

The purpose of this first chapter is to compare basic education outcomes and indicators in the four Central American countries, which will then be examined and explored in the subsequent chapters. At least five main dimensions of educational performance should be considered in any education sector diagnostic such as this one: (a) educational coverage, measured by enrollment rates; (b) internal efficiency, measured by student cohort survival rates and other indicators; (c) educational quality, measured by the acquisition of cognitive skills; (d) external efficiency, measured by private (and ideally, social) rates of return to schooling at the various levels; and (e) equity, measured by the distribution among urban-rural areas, socio-economic groups and ethnic groups of all the previous indicators. We will make the attempt below to compare the countries along these dimensions, using similar indicators, and, when applicable, triangulating indicators across multiple sources (official Ministry of Education sources and household surveys). When possible, we also provide longitudinal comparisons of these education indicators for each country.

A key conclusion of the chapter will be that some urgent priorities remain in spite of several accomplishments undertaken in the past decades, in particular related to quality and learning, primary completion and secondary education coverage.

I. Coverage of the Education Systems

Although geographically and culturally similar, countries in Central America present marked differences in socioeconomic terms. According to WDI data, per capita income levels in the region vary from a Costa Rican level of US\$ 4,000 to less than one fourth that amount in Honduras or Nicaragua (US\$ 900 and US\$ 700 respectively). These differences are present across Central American countries in terms of educational indicators and, to a lesser extent, educational structure.

The different educational systems vary only slightly in terms of the structure of primary and secondary levels, official entrance ages and number of years of compulsory education (see Figure 1.1). The Nicaraguan system is made of three years of voluntary preschool, six years of compulsory primary education, and a voluntary five-year secondary cycle. Technical/vocational and teacher modalities require an additional year (grade 12).

Preschool education in Guatemala is divided into two levels: initial and pre-primary education. The primary level consists of 6 years and secondary education is divided into a basic “common” cycle of three years and a diversified cycle that lasts between 2 to 4 additional years.

El Salvador has a nine-year compulsory basic education level consisting of three, three-year cycles (traditionally thought of as primary and lower secondary). Secondary

education then consists of 2 or 3 additional years, depending on the modality. Like in the previous countries, preschool covers children aged 4 to 6.

The system in Honduras was structured like that of Guatemala but has recently been reformed to resemble that of El Salvador, where instead of having a primary six-year level, there is a basic level that consists of 9 grades, with a short subsequent secondary level of 2 years (academic stream) or 3 years (professional stream).

Costa Rica also follows the same pattern, with a basic education level consisting of three, three-year cycles, and a diversified secondary lasting 2 to 3 additional years. There are three options for diversified secondary in Costa Rica: academic (2 years), artistic (2 years) and technical (3 years). The official school entrance age is 6 in Costa Rica.

In contrast with the other Central American countries, Panama has a mandatory 2-year preschool cycle, then followed by 6 compulsory years of primary, and 3 compulsory years of pre-secondary level. The secondary level is not compulsory and covers years 10 to 12.

Figure 1.1: Structure of the Education Systems in Central America

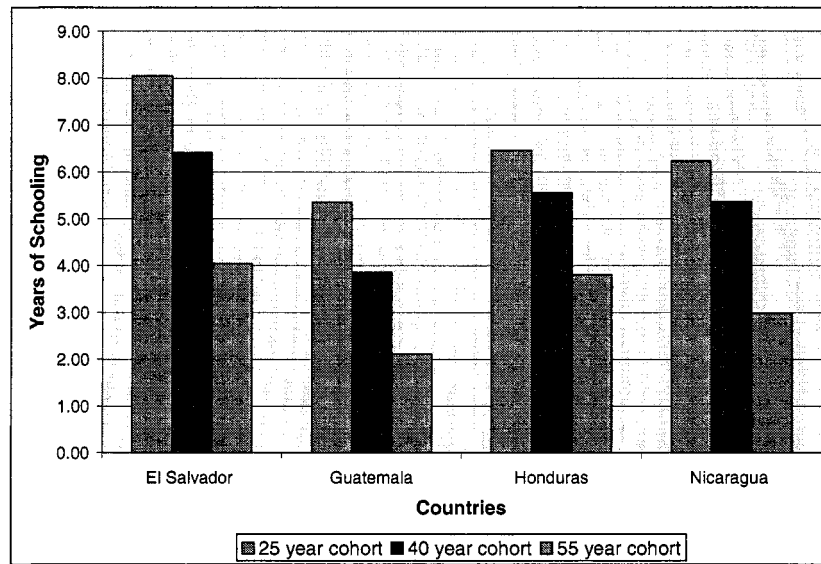
Age	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
El Salvador	1st and 2nd cycle of BASIC EDUCATION							3rd Cycle BASIC EDU			SECONDARY			"Bachiller General": 2 years TVET: 3 years		
	1	2	3	4	5	6	7	8	9	10	11	12				
Guatemala	PRIMARY							LOWER SECONDARY			UPPER SECONDARY			Upper Sec.: general, teacher, technical and commercial		
	1	2	3	4	5	6	7	8	9	10	11	12	13			
Honduras (*)	1st and 2nd cycle of BASIC EDUCATION							3rd Cycle BASIC EDU			SECONDARY			"Bachiller General": 2 years TVET: 3 years		
	1	2	3	4	5	6	7	8	9	10	11	12				
Nicaragua	PRIMARY							SECONDARY							TVET and Teacher School include year 12	
	1	2	3	4	5	6	7	8	9	10	11	12				
Costa Rica	1st and 2nd cycle of BASIC EDUCATION							3rd Cycle BASIC EDU			SECONDARY					
	1	2	3	4	5	6	7	8	9	10	11	12				
Panama	PRIMARY							PRE SECONDARY			SECONDARY					
	1	2	3	4	5	6	7	8	9	10	11	12				

(*) This division into Basic and Secondary was only recently approved

A. AVERAGE YEARS OF EDUCATION ATTAINED

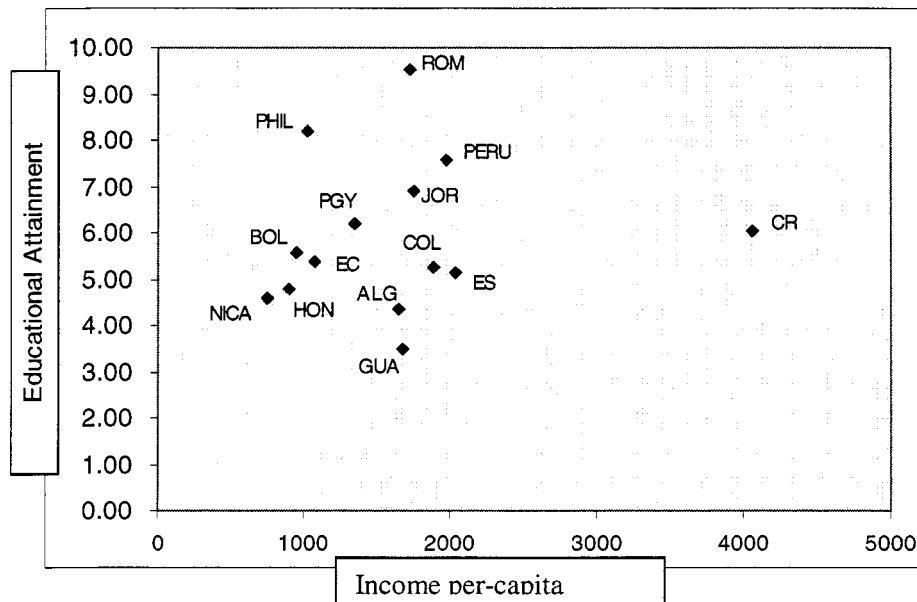
Advances in Educational Attainment. Average educational attainment has improved in all four Central American countries over the past 30 years (see Figure 1.2 below and Table 1.1 in Annex I). The improvements have been strongest in El Salvador, followed by roughly equivalent increases in Guatemala and Nicaragua, with the weakest advances in Honduras. Nonetheless, the Central American countries still compare poorly to the Latin American average in terms of educational attainment although gains in educational attainment have, in general, been faster in Central America (with the exception of Honduras) (see Annex Table 1.2). Central American countries also perform quite poorly compared to countries with similar per capita income (see Figure 1.3).

Figure 1.2: Average Years of Education Attained in Central America



Source: El Salvador: EPHM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2003; Nicaragua, EMNV 2001. Notes: (a) simple average of the four countries under analysis

Figure 1.3: Educational attainment and income per-capita, 2000



Source: Barro and Lee and WDI

B. GROSS AND NET ENROLLMENT RATES

Gross enrollment rates (GER) compare the total number of children enrolled in a specific education cycle as a percentage of the school-age population that corresponds to the same education cycle. Net enrollment rates (NER), on the other hand, consider in the

numerator only the number of students of the *official age* that actually attend that particular level or grade. The difference between the two thus provides a rough estimate of the share of students in a specific cycle that are under or over aged.

Figures 1.4 and 1.5 present NER and GER data from both MINED data and from household survey data (see also Tables 1.3 and 1.4 of Annex I). Small discrepancies between the two sources of data are likely to occur primarily because of the different points of collection of the information (household versus school), which can lead to different sorts of biases or deficiencies in data collection. For instance, households may have the incentive to over-estimate their schooling/access to school for social recognition. Or, statistics on age-per-grade may be poorly collected at the school level (if collected at all), leading to discrepancies in the NERs across the two sources. The ranking among the countries should be insensitive to the use of one or the other source. One exception concerns Honduras, where the ranking between countries depends on which data source is used. This is probably due to weaknesses in data collection in Honduras in both the ministry of education¹ as well as with the household survey. It is, therefore, imperative that Honduras focuses on improving, as it is currently attempting, its data collection system. El Salvador and Nicaragua have been more successful in this effort (as indicated by more consistency in their indicators) although indicators calculated at the sub-national level are not always fully consistent.

¹ Entire data series have disappeared after the last hurricane. Attempts have been made up to 2002 to collect statistics in a consistent way (in particular a school census was carried out in 2000), with, however, dubious results. From 2002, new more ambitious school mapping exercises are under way, with an improvement in the 2003 data (this is certainly the case at the secondary level, although the data seem to be over-estimated at the primary level).

Figure 1.4: GER and NER in Primary (different data sources)

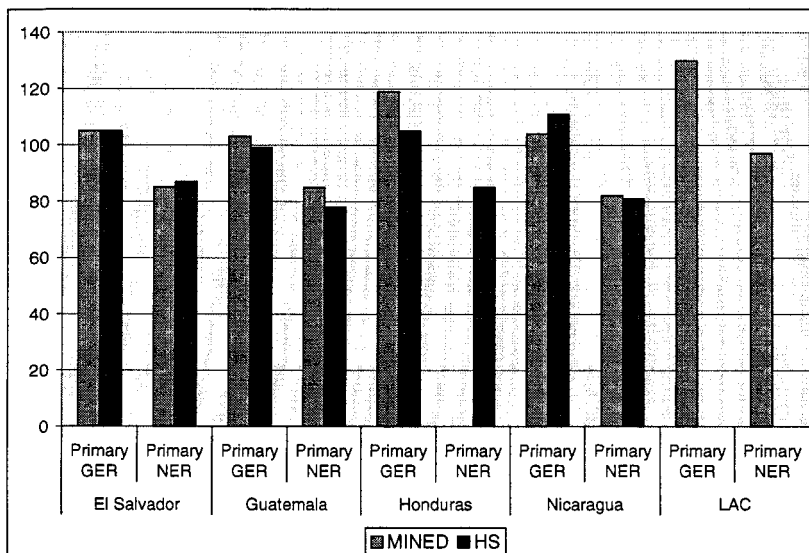
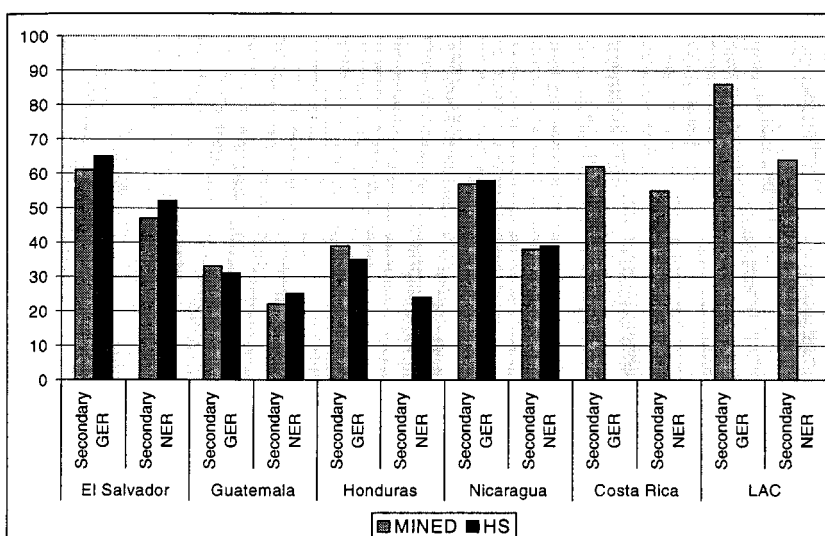


Figure 1.5: GER and NER in Secondary (different data sources)



High and homogeneous GER in primary - Low and heterogeneous GER in secondary. At the primary level, GERs are uniformly higher than 100%, while NERs, although they vary slightly more across countries, are always about 80%. At the secondary level, both GERs and NERs are much lower and vary quite a lot across countries.

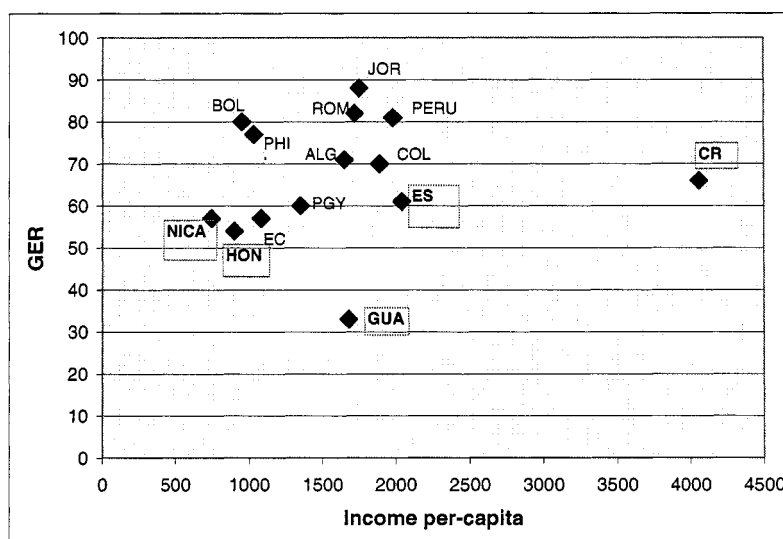
Low efficiency in primary. A difference of about 20 percentage points between GER and NER at the primary level combined with GERs over 100 percent suggests that the education system could accommodate the entire age-appropriate student population.

These figures also indicate that there is substantial room for efficiency improvements – i.e. less repetition and dropout/reentry patterns - at the primary level in all countries.²

Low coverage in secondary. At the secondary level, a key issue for the countries under analysis is low coverage, even in terms of GER. As will be discussed in subsequent sections, many students dropout after (or before) finishing primary. It is clear from Figure 1.5 that both GER and, to a slightly lesser extent, NER are much lower in all four countries than the Latin American average. Figure 1.6 also indicates that there is a “secondary education gap” compared to countries with similar per capita income. The gap is even worse when comparing NERs.

Figure 1.6 also shows that while Nicaragua compares favorably with the other Central American countries in terms of GER considering its per capita income, Guatemala compares very poorly.

Figure 1.6: The “Secondary Education Gap”



Source: Table 1.3 Annex I and WDI

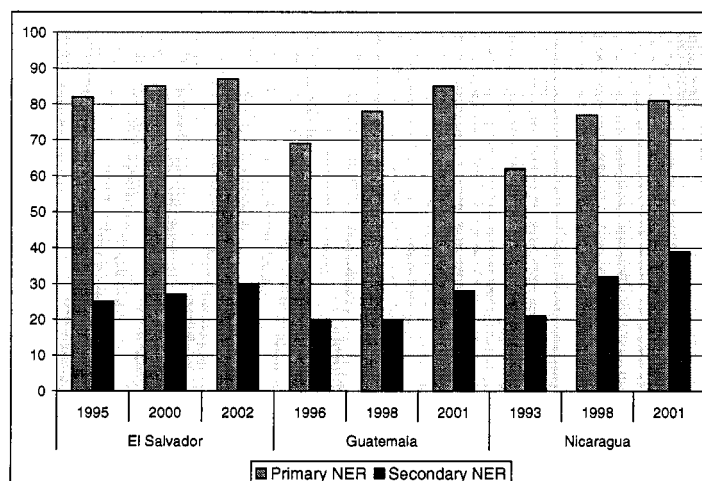
Figure 1.7 depicts the evolution of NERs in primary and secondary in El Salvador, Guatemala and Nicaragua since the mid nineties.³ Information comes from either official MINED statistics or household survey data depending on availability.⁴ Overall, we see that there was a positive trend in the GER and NER in all countries, although varying across countries.

² This margin for efficiency improvements is even higher at the Latin American level.

³ It is difficult to find fully reliable comparative data before for most of the countries analyzed.

⁴ It should be noted that the coverage of the secondary level does not always strictly correspond to the one used in Tables 1.3 and 1.4 of Annex I for limitation in the availability of past data, but the trend should not quite differ.

Figure 1.7: Comparative Evolution of NERs



Source: El Salvador, EHPM, various years; Guatemala, MINED official statistics; Honduras, EHPM, various years; Nicaragua, EMN, various years; Costa Rica, MINED, official statistics. (a) Primary is grades (1-6); secondary is grades (7-11); (b) lower secondary without brackets and upper secondary (grades 10-12) within brackets.

NER increased particularly fast in Guatemala and Nicaragua, where the starting point was lower, and, at the secondary level, particularly fast in Nicaragua. In terms of GER, El Salvador and Guatemala have also experienced high growth since the mid-nineties (see Table 1.5 in the Annex). In El Salvador, this trend was related to the comprehensive education reform started in 1995.⁵ Honduras is the country where enrollment rates increased the least over this time-period.

II. Internal Efficiency of Education Systems

This next section examines indicators of internal efficiency in Central American education systems. In particular, it looks at completion rates, survival rates, repetition rates, and age-by-grade distortion.

A. COMPLETION RATE

The aggregate indicators presented above provide a snapshot of the coverage situation, but they do not provide enough information for a full educational coverage diagnostic. This is because GERs and NERs refer to averages across all grades in a schooling cycle: a similar enrollment rate can thus be the product of high access to a certain cycle and high dropout during the cycle or low access to the cycle and low dropout during it, we cannot disentangle this. A useful and widely monitored indicator is the Gross Completion Rate (GCR) that captures the number of children, of any age, who successfully complete the cycle as a proportion of the population of theoretical completion age for the cycle.

⁵ See The World Bank (2004b).

We present two completion rate indicators. The first (Table 1.1) uses MINED data and is the proportion between the enrollees in the last grade of each cycle minus the repeaters divided by the children of the official age of graduation. This figure, therefore, does not actually measure graduates of the level as MINEDs rarely produce this information. Because of this, the indicator tends to over-estimate the true completion rate. It is still useful because it captures, at a given moment in time, the children “completing” a cycle whatever their age, and is in fact being used for monitoring the MDG goals by the World Bank.

Table 1.1: Completion Rates at the Primary and Secondary Level

	Primary CR (%)	Secondary CR (%)
El Salvador (2002)	55 (grade 9) 75 (grade 6)	40 (grade 11) 22 (grade 12)
Guatemala (2001)	51	16 (grade 9)
Honduras (2001)	69	19 (grade 11)
(a) (2003)	80	14 (grade 12)
Nicaragua (2002)	69	31 (grade 11)
Costa Rica (2001)	89	33 (grade 11)
<i>Latin America (2001)</i>		
Brazil	90	61 (grade 8)
Chile	101	61 (grade 8)
Jamaica	95	61 (grade 8)
Mexico	100	61 (grade 8)
Paraguay	78	61 (grade 8)
Peru	97	61 (grade 8)
Ecuador	96	
Bolivia	72	
Colombia	85	
<i>Countries with similar income p/c (1995-2001)</i>		
Peru	97	
Colombia	85	
Jordan	104	
Romania	98	
Algeria	91	
Paraguay	78	
Ecuador	96	
Philippines	92	
Bolivia	72	
Source: MINED Official Data; Di Gropello, Dubey, Winkler (2003); WDI. Notes: (a) 2003 is likely to be over-estimated at the primary level. 2001 was added for comparison with other countries.		

The second indicator (Table 1.2) uses household surveys to explicitly measure cycles completed. Instead of capturing completion at a given moment in time, this indicator measures the primary cycle completion of a certain age-cohort over different periods of time. This indicator does not provide information on how things stand presently, but it does capture actual completion and can be easily used to compare completion across cohorts and time.

Central American countries compare poorly at an international level. Both primary and secondary GCRs are lower than Costa Rica, the Latin American average, and countries with similar per capita incomes (see also Figure 1.1 in the Annex).

GCRs are lower than the GERs. When comparing GCRs to GERs (see Figures 1.8 and 1.9), we note that in all countries (except Costa Rica) GCRs are substantially lower at all levels. This suggests that there is high dropout during both educational cycles (although care needs to be taken when comparing GERs and

GCRs because we are comparing different student cohorts).

GCRs are less than 80 percent in primary. Despite improvements in coverage, primary completion rates are lower than 80 percent⁶ in all four countries. Guatemala, with a PCR of 51 percent, is the lowest of the four. The target 100 percent completion rate established under the MDG goals will require major efforts on the part of all countries. These efforts will need to focus on improving education quality (see Chapter II) and reducing other barriers such as late entrance.

Low GER and GCR in secondary. At the secondary level, GCR does not exceed 40 percent in any country. Part of the reason behind these disturbingly low figures is the low enrollment rates seen above. GCR are also, however, due to high dropout rates in the cycle.⁷

Table 1.2 : Primary Completion Rate for Different Cohorts			
	18 year-old cohort	25 year-old cohort	35 year-old cohort
El Salvador, 2002	76	68	54
Guatemala, 2000	56	45	36
Honduras, 2002	71	65	57
Nicaragua, 2001	55	56	42
Costa Rica, 2000	85	80	82

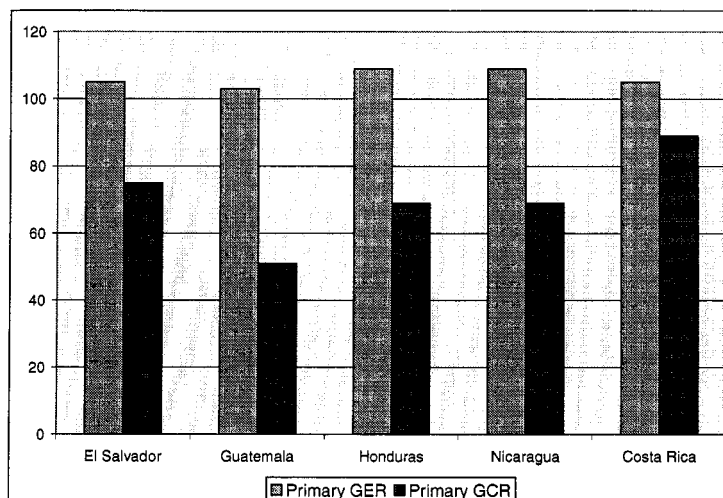
Source: Household Surveys.

GCR evolution shows progress. On a more positive note, the evolution of gross completion rates for the primary cycle shows steady progress, particularly in Guatemala. The four countries are catching up with Costa Rica. El Salvador, for example, is only lagging by nine percentage points.

⁶ Using the more reliable and comparable 2001 data for Honduras.

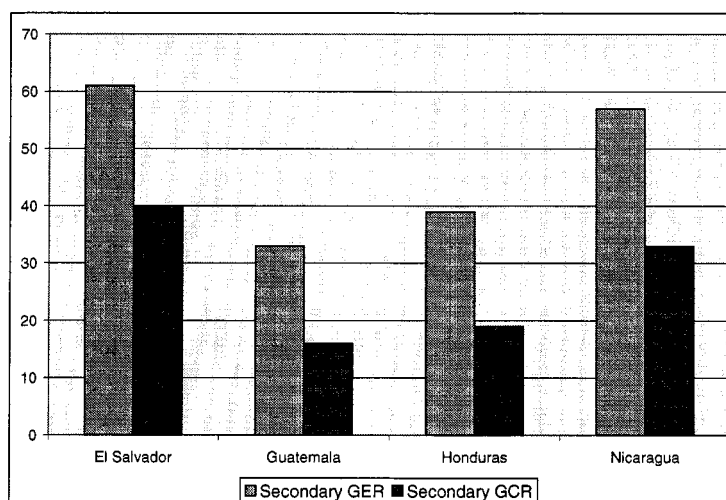
⁷ The reasons for the current low coverage and completion of the secondary cycle and possible options to improve them will be dealt with in Chapter III.

Figure 1.8: GERs and GCRs in Primary



Source: Table 1.3 Annex 1 and Table 1.1

Figure 1.9: GERs and GCRs in Secondary



Source: Table 1.3 Annex I and Table 1.1

B. SURVIVAL RATE

Survival rates measure the percentage of a cohort of students enrolled in the first grade of primary in a given school year who are expected to reach a specified grade level or cycle. Several methodologies are used to calculate survival rates, depending on the data source.⁸

⁸ The “reconstructed cohort analysis” technique (or pseudo-longitudinal analysis) is typically applied using official MINED data and, making use of two consecutive enrollment years and data on repeaters for the most recent year, simulates the schooling life of an initial cohort of students, determining repetition, drop-out and survival rates. A second one is a technique that can be applied using household survey data, which involves estimating the probability of remaining in school for specified cohorts. Within this setting, simple survival function plots can be drawn by making use of two basic pieces of information contained in the household surveys: (a) the education years attained; and (b) the current attendance or not to a school. Both techniques have methodological limitations, in particular the reconstructed cohort analysis is based on a

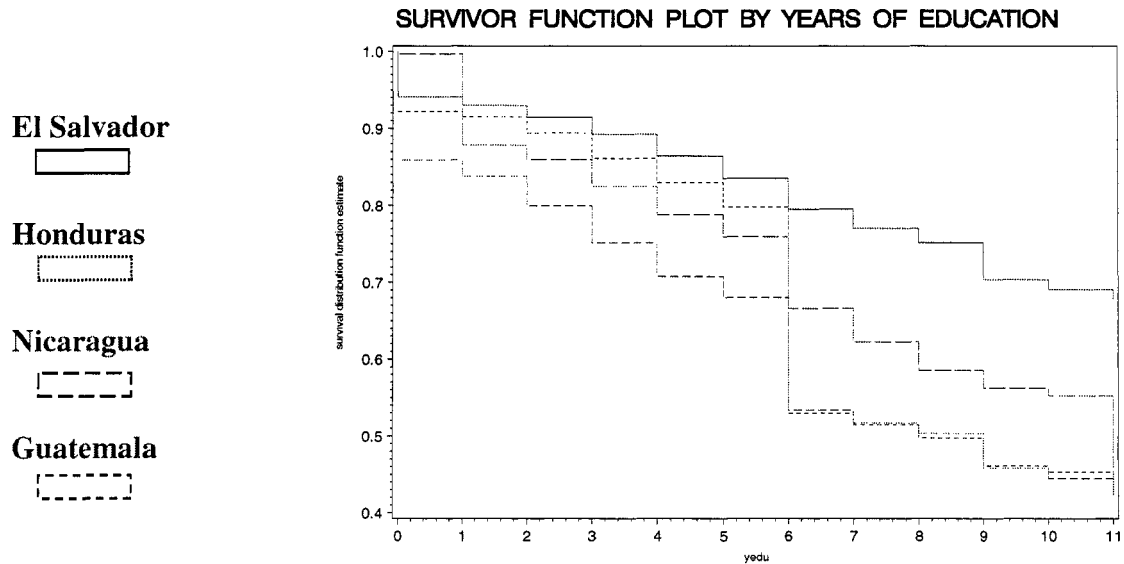
The comparison between the two main methodologies (reconstructed cohort analysis and survivor plots) can cast light on the on-going evolution of the internal efficiency of the education system because survivor plots illustrate more recent trends in survival than does the reconstructed cohort method (see footnote for a methodological explanation of each technique).

Figure 1.10 graphs the current survival rates of the 7 to 17 cohort in the four Central American countries under analysis, according to the survivor function plots (see also Table 1.6 in Annex I).

Although each country is different, there is a constant loss of students throughout primary. Figure 1.10 clearly illustrates that students drop out throughout the educational cycle in all countries, but also that there are significant differences across countries in terms of the prevalence and characteristics of the dropout phenomenon (individual countries' survival plots are shown in Annex I). For instance, all countries currently have a sixth grade survival rate of between 70 and 80 percent, but El Salvador and Guatemala have a continuous and steady decrease in survival along the primary cycle, while Honduras and Nicaragua have a more irregular dropout pattern, with higher dropout rates in grades 4, 5 and 6. For these latter countries, this suggests that quality issues, supply-constraints (for example in Honduras, where close to 20 percent of primary schools have fewer than 6 grades), and late-entrance may in part be responsible for the irregular dropout rates.

number of restrictive assumptions and is very much dependent on the quality of the data on enrollment and repeaters collected by the MINED, while the survivor function plot measures a probability which relies on limited information and on the quality of the households' replies. Additionally, beyond the data source, there is an essential methodological difference between these two techniques which, as we will see, generates substantial differences between them while also making their comparison meaningful. Survivor function plots make use of retrospective information on the survival rates of all the previous cohorts in working out the probability of survival of the most recent cohort, while at the same time updating/adjusting the survival probability to the higher grades by the increased survival probability to the lower grades, which ensures that the evolution in survival rates across cohorts and grades is taken into account. In contrast, a reconstructed cohort analysis adopts a more retrospective approach by assuming fixed in time the probability of survival to each of the grades. This second methodology which tends to under-estimate the current survival rates, although mostly for the higher grades, tends to generate a survival rate, which adjusted by the gross intake rate, provides a figure close to the current gross completion rate (it will in fact tend to be higher if the gross intake rate increased in time or if the internal efficiency parameters between grade 1 and grade 2 improved in time). A comparison between the two methodologies will be instructive as it can cast light on the on-going evolution of the internal efficiency of the education system.

Figure 1.10: Comparative survivor plots



Source: El Salvador: EPHM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2002; Nicaragua, EMNV 2001.

Transition rates vary across countries. The differences across countries are even larger at the secondary level. A critical difference concerns the transition rate between primary and secondary. On the one hand, El Salvador has basically no change in survival rates through grade 9 (i.e. decreases in survival rates continue at a similar trend). On the other hand, Honduras loses approximately 25 percent of students between the sixth and the seventh grade. Nicaragua and Guatemala fall somewhere in between. The steady progression of students from what are traditionally considered primary school grades (1-6) through what are traditionally considered lower secondary school grades (6-9) in El Salvador is likely due to the country's education reform that reorganized grades into a basic cycle (grades 1-9) and in a secondary cycle (grades 10-11 or 10-12). This reform also included substantially increasing the number and availability of basic education schools. In Honduras, by contrast, there remain important supply-side constraints at the secondary level (i.e. lack of access to secondary schools). Furthermore, late entrance is likely to be a cause of high desertion between 6th and 7th grade.

It is striking to note that while Honduras has a roughly 10 percent higher survival rate through the last year of primary, its survival rate to grade 11 is 10 percent lower than that of Nicaragua. Honduras urgently needs to address this transition issue. Indeed Honduras, Guatemala, and Nicaragua could all benefit from compulsory nine-year basic education cycles such as that of El Salvador. Honduras, in fact, has recently introduced such a reform, and will, therefore, need to focus now on ensuring appropriate implementation and compliance.

Few students make it to upper secondary. Looking specifically at survival rates in secondary, Guatemala, Honduras and El Salvador experience the greatest survival decline in the later years of secondary (transition to grade 10 specifically) while Nicaragua

experiences the greatest decline in the earlier years of secondary (grades 8 and 9). In all countries, grade 10 is the start of the upper secondary cycle, which offers a “diversified” curriculum - i.e. separate technical and academic tracks. Lower survival rates from grade 9 to grade 10 in Guatemala, Honduras, and El Salvador indicate that the transition into upper secondary may be problematic due to the pressure to work, lack of space or lack of quality or relevance of this cycle for some students. Ultimately, El Salvador has the highest survival rate to grade 11 (close to 70 percent) while Guatemala and Honduras have the lowest (less than 50 percent).

Efficiency has improved. Figures 1.11, 1.12 and 1.13 juxtapose survival function plots (SFP) with the reconstructed cohort method (RCM) in El Salvador, Nicaragua and Honduras.⁹ By comparing these two indicators we can see that survival rates are improving in all three countries. Survivor plots have been adjusted to start from a level of 100 percent in grade 1 (i.e. taking enrolled students as a basis and not the population). These improvements are likely to result in increased enrollment and completion rates. Efficiency improvements vary, however, across countries. Honduras appears to be making the most progress (where RCM survival rates are significantly lower than in the other two countries) indicating that it is catching up with Nicaragua and Guatemala.¹⁰ El Salvador has a regular declining trend. Honduras now has a lower drop out rate between grades 7 and 8 while Honduras and Nicaragua both show higher dropout rates between grades 6 and 7.¹¹

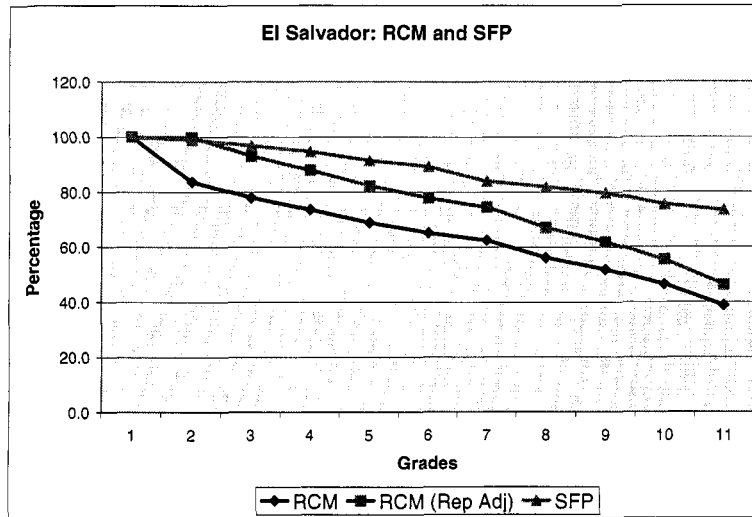
Under-estimated repetition rate in grade 1. Figures 1.11, 1.12 and 1.13 also plot each estimation along with a third estimation that is the Reconstructed Cohort Analysis in which we have adjusted up first grade repetition to around 30 percent. We do this because although we expect a divergence between the two types of curves for higher-grade students due to their methodological peculiarities (see footnote 8), we are surprised by the substantial divergence already noticeable at lower grades, where the improvements in internal efficiency should still not have had such a strong impact on the relative survival rates. By adjusting the repetition rates upwards to about 30 percent in all three countries (that is about double what the official figures report, which, we know, are bound to be under-estimated – see below), we obtain adjusted curves which provide much closer results than the ones generated by the survivor plots up to grade 3. We, therefore, make the plausible assumption that repetition rates in grade 1 may be under-estimated in MINED data.

⁹ We did not have the official data to undertake a reconstructed cohort analysis for Guatemala.

¹⁰ Care should be taken in interpreting this result in the case of Honduras, however, because the official MINED data, up to 2003, underestimated enrollment at the secondary level.

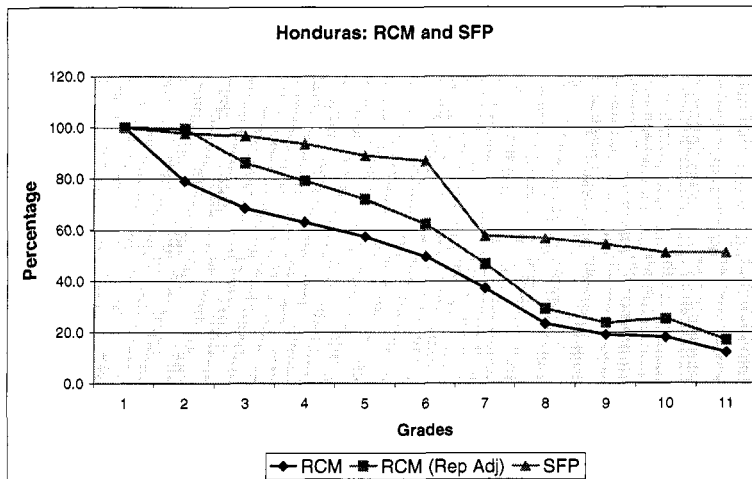
¹¹ It would be useful to understand what is causing this: has the shortage of schools at the secondary level become more acute ? Has late entrance increased so that when they finish grade 6 children need to go to work ?

Figure 1.11: RCM and SFP in El Salvador



Source: MINED and HS

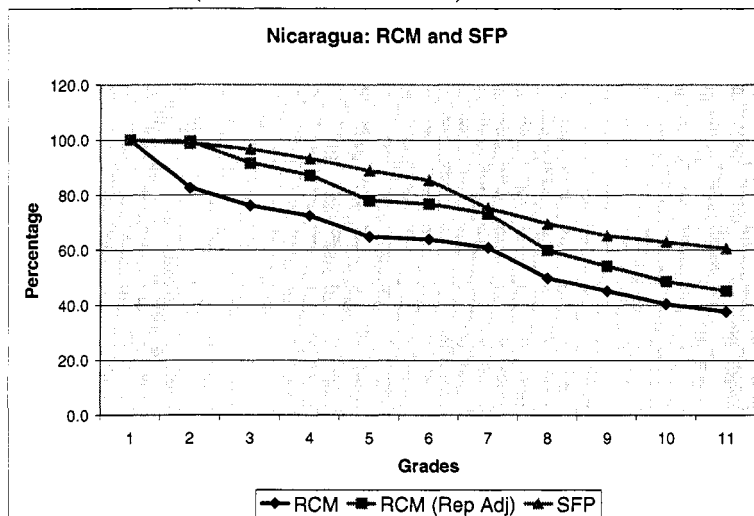
Figure 1.12: RCM and SFP in Honduras



Source: MINED and HS

Figure 1.13: RCM and SFP in Nicaragua

(Source: MINED and HS)



C. AGE-BY-GRADE DISTORTION AND REPETITION RATES

The survival profiles analyzed above tell you what proportion of a given cohort reach any given grade level, but they do not provide any information on how *long* it takes to the students to reach that certain grade nor on the average age of students who reach that grade. Age-by-

grade distortion and repetition rates fill that gap.

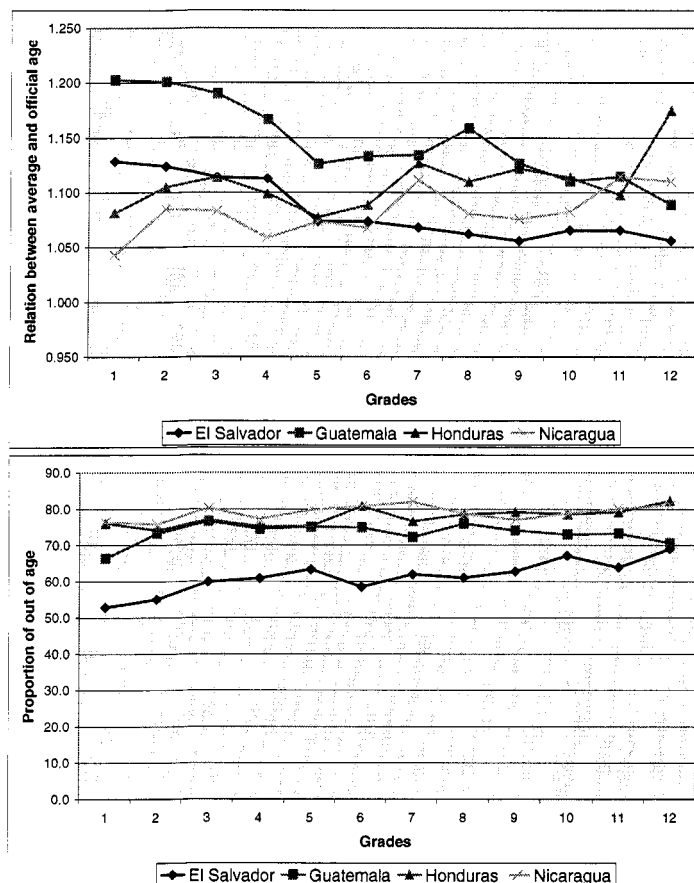
a) Age-by-grade distortion

Age-by-grade distortion measures the average number of years a student in a particular grade is older (or younger) than the official age for that grade. Age-by-grade distortion can be broadly assessed by comparing the average age corresponding to each grade with the official age for that grade in each of the countries. The comparison between GERs and NERs presented earlier showed us that there is a substantial proportion of over-age (or under-age) students in Central American countries at the primary and secondary level.

Age-by-grade distortion is high. The plots in Figure 1.14 report the age-by-grade distortion as well as the proportion of children out of age at each grade for the four countries using household survey data (see also Table 1.7 in the Annex). These plots show that the *majority* of students in *every* grade are not the official age for their grade. In all four countries under analysis, the official entrance age is 7 and, if students proceed regularly through the grades without repeating, they should reach grade 11 at the age of 17 (or grade 12 at the age of 18). Our evidence shows that, for each grade, between 50 and 80 percent of children are 'out of age' in all countries. This translates into an average age-by-grade distortion of between 5 and 20 percent higher than the official one. Several further points can be made here.

Figure 1.14: Age-by-grade distortion and proportion of out of age children

(Source: Table 1.7 in Annex I)



Different intensity and patterns of age-by-grade distortion and out of age students by country. The magnitude of age-by-grade distortion varies across countries, with Honduras and Guatemala having, overall, an average distortion higher than Nicaragua and El Salvador.¹²

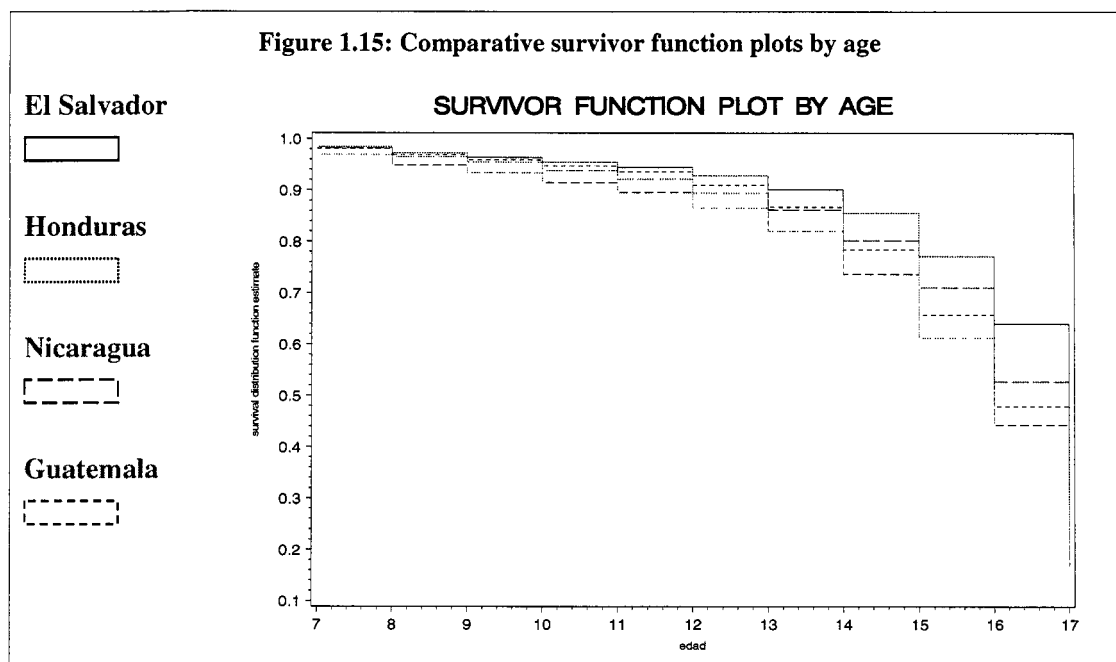
There is an interesting convergence in the age-by-grade distortion in the highest grades (at least up to grade 11), which is not accompanied by an equivalent convergence in the proportion of out of age children. In Honduras, both the age-by-grade distortion and the out of age tend to increase, suggesting that there continue to be high repetition rates even in the higher grades (see below). In Guatemala, the proportion of out of age students decreases slightly in the last grades of secondary - this is likely to be due, in part,

to older students dropping out once they reach the higher grades.

Nicaragua and El Salvador are also interesting to analyze here. The increased age-by-grade distortion in Nicaragua, with a similarly increasing, although at a slower pace, proportion of out of age children, may indicate high repetition and/or less dropout occurring than in other countries and/or drop-outs more evenly distributed between out of age and age-appropriate students. Finally, a decreasing age-by-grade distortion in El Salvador, combined with an increase in the out of age population, suggests fewer drop-outs than elsewhere, drop-outs more evenly distributed between out of age and age-appropriate students and older students dropping out relatively more.

¹² It is interesting to note that, while the lower relative age distortion in El Salvador can be clearly associated with a lower proportion of out of age children, in Nicaragua, the lower relative age distortion is likely to be due either to smaller deviations from the official age in the out of age children or to over-age children being partly compensated by a high proportion of under-age children (since the proportion of out of age is very substantial in that country). There is in fact evidence of a substantial proportion of children that enroll in grade 1 at 6 in Nicaragua (see Arcia, 2003).

Age-by-grade distortion is largely the product of late (or early) entrance to primary, and repetition along the educational cycle, and cycles of dropout and reentry. It is difficult to disentangle the magnitude of these aspects by simply looking at the figures on age by grade, which are generated through official or household survey data. Attempts to disentangle these root causes of age-by-grade distortion have been undertaken for Honduras and El Salvador, showing, respectively, an estimated proportion of late entrants of 38 percent and 15 percent, and an estimated proportion of repeaters of 30 percent for Honduras and 35 percent for El Salvador.¹³ Along a similar line, an exploration of the main causes of grade-by-age distortion was undertaken for Guatemala by estimating the determinants of grade-by-age (see Box 1.1 in Annex I), revealing that repetition is the main cause of grade-by-age distortion in the country.



Source: El Salvador: EPHM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2002; Nicaragua, EMNV 2001.

Over-age leads to lower educational attainment. Whatever the exact relative magnitude of these causes, late entrance, repetition, and dropout-reentry cycles are bound to have negative consequences on the schooling cycle of children. Furthermore, repetition

¹³ The applied methodology is a simple one. We mapped out the household surveys by age and grade in these two countries, calculated the proportion of seven-year-old children enrolled in the primary cycle, multiplied the remaining proportion by the amount of eight-year-old children currently enrolled (which gives us the maximum amount of 8-year-old children who could have started late), and, therefore, obtained the late entrants and, by converse, also the repeaters of eight or more years (to take account of the seven year repeaters we also added to the repeaters the amount of grade 1 students of age 6 who did not make it to grade 2 the year after). Both numbers were then divided by the total enrollees in grade 1 to obtain the late entrance and repetition rate. To be noted that this estimation, similar to a methodology applied by Schiefelbein (see Schiefelbein (2004)), assumes that all children get enrolled at either 7 or 8, which might not necessarily be true, and that the proportion of non-enrolled 7-year-old children has been constant for the last two years.

imposes a financial strain on the educational system as a whole. Survivor functions by age (not by grade this time) for all the countries under analysis (see Figure 1.15) show clearly that the probability of dropping-out of school increases quite dramatically for all countries once students turn 14 (probably at least in part due to work-related reasons). This implies that students who have successfully completed fewer grades by 14 are more likely to have fewer years of schooling when they leave school and lower educational attainment as adults.

In fact, the higher age-by-grade distortion and proportion of over age students found for Honduras and Guatemala also contributes to explain why these two countries, in spite of having a similar structure of dropouts by age than the other countries, have lower attainment rates to grade 7 and each of the following grades. To illustrate this point further in Honduras, a thorough analysis undertaken by Edwards, Fuller and Parandekar¹⁴ using a specially designed dataset which makes it possible to follow a specific cohort of students (5,204 children) over two years, determined that 13 year-old and older children are more likely to drop-out at some point of the cycle, even if they have not completed primary, and, therefore, that school attainment is substantially determined by the age of initial enrollment.¹⁵ Among the main causes for late enrollment, the study finds family socio-economic status, family composition and the quality of schooling.¹⁶

b) Repetition

High repetition rates in grade 1. For the reasons mentioned above, it is important to estimate the correct amount of repetition existent in the system. Figure 1.16 reports different repetition estimates, calculated according to different data sources and methodologies (see also Table 1.8 in the Annex). The evidence suggests that repetition is particularly strong in the first year of primary education for all countries (higher than 10 percent everywhere), while it tends to decrease for the later grades of primary (as shown by the lower primary averages) and, with the exception of Honduras, for secondary. These repetition rates are, however, under-estimated. As shown in Figure 1.16, the direct estimates of repetition provided by the MINED official data and the household surveys are reasonably close, but the analysis of the age by grade that we undertook to infer repetition for Honduras and El Salvador, and estimates for Nicaragua generated according to similar methodologies¹⁷, show that the *real* repetition rate is likely to be at least twice as high for the first grade. Our estimates use some simplifying assumptions¹⁸, but it is not surprising that the direct estimates on repetition produced from both the official and household survey data under-estimate real repetition rates.¹⁹ Repetition rates

¹⁴ See Edwards, Fuller and Parandekar (1997).

¹⁵ The study finds that every additional year of age at enrollment increases the probability of dropping out of school by 25 percent!

¹⁶ Over-crowded schools might delay the age of enrollment.

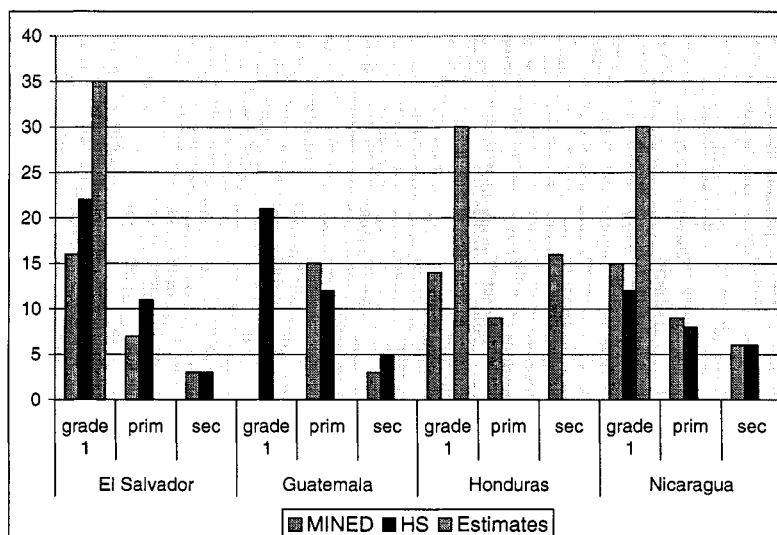
¹⁷ See Arcia (2003).

¹⁸ In particular, that there are no late entrants of more than 8 years and that only in school over-age students are accounted for.

¹⁹ With the official data, under-estimation would be due to misreporting of the schools' directors, who would consider drop-outs students who left their school, although they might have re-enrolled in another school (during the same year or after a lapse of time) at the same level and, therefore, should be really

of about 30 percent in grade 1 are also confirmed by the comparison of survival rates²⁰ undertaken previously (see Figures 1.11-1.13).

Figure 1.16: Comparative repetition rates according to different sources



In any case, even by official standards, repetition is an issue in all the Central American countries under analysis. It tends to be higher than countries with similar income per-capita (see Figure 1.17), although it is in line with the Latin American average, and is particularly high for the first grade of primary. The very high repetition rates in the first grade are particularly disturbing, and suggest several possible hypotheses²¹: (a) the curriculum or the standards may be unrealistically demanding; (b) schools are too full and, therefore, lower grades are used as filters; (c) teaching quality might be too low; and (d) inherent characteristics, such as a language barrier or lack of academic support at home, might make it impossible for students to perform well.

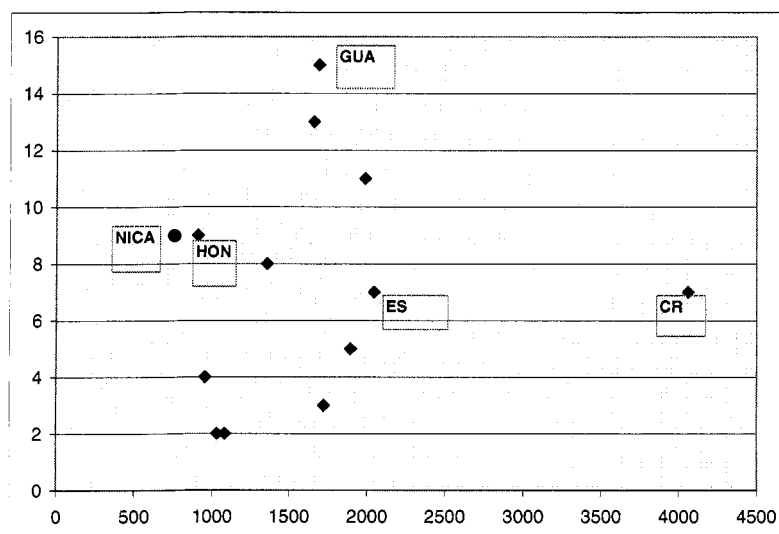
considered repeaters. With household survey data, under-estimation would be due to the fact that, as with the age by grade disaggregation exercise, these data can really only capture the in-school students who have repeated but not the out-of-school ones (and will typically lead us to compare the students who were enrolled last year in one grade and repeating it this year with the current student enrollment in that grade, somewhat underestimating repetition); but also, and importantly, to the fact that they rely on parents' responses which are notoriously unreliable when it comes to repetition (in particular in the lower years). In fact, we note, interestingly, that directors' misreporting in the official data produces an under-estimation that turns out to be similar to the one produced using the direct question on repeaters of the household surveys. Overall, it is likely that the age-for-grade analysis provides us with a more realistic, although maybe slightly over-estimated repetition prediction, while using direct information on repetition provides under-estimates of the true amount.

²⁰ To be noted here that survivor function plots do not depend on the information on repetition, while the reconstructed cohort analysis does (although, for the construction of the model, only the first grade repetition will really have an unambiguous impact on the survival), making the first methodology sounder in this sense.

²¹ This is based on Edwards (2004).

Figure 1.17: Income per-capita and repetition rate in primary

(Source: Table 1.8 in Annex I and WDI)



Some of these hypotheses will be tested in Chapter II. The next section of this chapter examines comparative indicators of learning outcomes in Central America.

III. Quality of Education Systems

Just because a child is enrolled in school does not mean that he or she is learning the skills and

knowledge intended. There are many cases of countries with close to full completion rates in primary or secondary, but low student learning outcomes. Additionally, quality itself will be an important determinant of permanency in school and, ultimately, earnings. Papers such as Marshall (2003a)²² and Bedi and Edwards (2002)²³ on Guatemala show that indicators of education quality such as days of instruction, teacher experience, teacher training or school infrastructure are also significant determinants of desertion and earnings; or even that gains in tests scores themselves are a significant determinant of school attendance (Marshall, 2003b).²⁴

A. STANDARDIZED TESTING

Learning outcomes are thought to be an appropriate measure of education quality and learning outcomes are frequently measured through standardized exams. Most countries now have some form of national (census or sample-based) standardized assessment given at the end of a schooling cycle that measures literacy and numeracy skills. The participation in regional assessments or, even, international assessments, such as the TIMSS (the Third International Mathematics and Science Study implemented by the International Association for the Evaluation of Educational Achievement (IEA)²⁵) and the PISA (the recently OECD launched Program for International Student Assessment)²⁶, also provide a country with some measure of learning outcomes, and allow comparisons with other countries, providing some objective benchmarking of the country's performance. For these reasons while standardized exams - both national and

²² Marshall (2003a).

²³ Bedi and Edwards (2002).

²⁴ Marshall (2003b).

²⁵ The test is designed to assess achievement levels in mathematics and science at grades 4 and 8.

²⁶ The test is designed to measure reading, mathematical and scientific literacy attained by 15-year-olds.

international - do not measure all the facets of student learning, they are a useful means of measuring learning. Countries may choose to use standardized exams in conjunction with other measures of learning and education quality.

All Central American countries, as part of their development of national educational assessment systems, which we will review in more detail in Chapter II, have now adopted standardized testing at the primary and/or secondary level. Table 1.3 summarizes the existing standardized exams in the countries under analysis with some characteristics.

Central American assessment systems cannot be compared. Overall, as we will develop in Chapter II, each of the Central American countries has a different testing system. On the one hand, we have cases like Costa Rica where standardized exams cover several grades, are used (in some cases) for accreditation, and have been introduced, at least for the last grade of secondary, as long ago as 1988 or 1994. On the other hand, we have cases like Nicaragua, where exams are only used at the primary level and were only introduced in 2002. Additionally, and very importantly, all exams tend to be designed differently and are based on national standards,²⁷ which also implies that the score scales and the interpretation of the different performance levels (say basic, intermediate, etc) are different across countries. These different characteristics, together with the absence of a Central American regional exam based on Central American standards (such as the one existing for the Caribbean for instance²⁸), make it fundamentally impossible to compare test scores across countries.

Very limited participation in regional exams; no participation in cross-regional international exams. Only Honduras and Costa Rica participated in the Latin American regional assessment exam (the UNESCO/LLECE exam undertaken at the Latin American level in 1997)²⁹, while both Honduras and Guatemala also participated in a special study which combined the test instruments developed by UNESCO, with items developed by the *Universidad del Valle* for the ministry of education in Guatemala and the *Universidad Pedagógica* for the education secretariat in Honduras (the results for Honduras are still not available). Unfortunately, these two exams are not comparable. Furthermore, none of the Central American countries have, to date, participated in a cross-regional international assessment exam.

²⁷ A system of Central American standards has recently been approved at the primary level, promoted by the CECC and the OEI, but only El Salvador has started to adapt its national standards to these regional standards.

²⁸ The so-called CXC (Caribbean Examination Council).

²⁹ Costa Rica did not release its results.

Table 1.3: Standardized Testing in Central America					
	Grades tested	Areas tested	Years	Frame of reference	Sample or census based
El Salvador	Grades 3, 4, 6, 9	Math, Social Sciences, Natural Sciences and Language	1994-1998 and 2001 (b)	Up to 2001: Norm based ³⁰ exams	Sample based
	Grade 11, 12 (PAES) (a)		1997-2001 and 2002 (b)	Since 2001: Criterion based. National standards.	Census based
Guatemala	Grades 3, 6	Language and Math	1998-2001	Norm based. National Standards.	Sample based
Honduras	Grades 3,6	Language Math Natural Sciences	1997-2002	"Rendimientos básicos" up to 2004. National standards established in the new National Basic Curriculum from 2005. Criterion based.	Sample based
Nicaragua	Grades 3, 6	Language, Math	2002	National standards established in the current curriculum. Criterion based.	Sample-based
Costa Rica	Grade 6	Language, Math, Social Sciences and Natural Sciences, Foreign Languages	1998-2002	Since 1995: National standards established in the National Curriculum.	Sample-based
	Grade 9 (c)		1996-2002	Objective based (d)	Census-based
	Grade 11 or 12 (c)		1988-1994 and 1995-2002	Since 1999: Norm based.	Census-based

Notes: (a) *Prueba de Aptitudes y Aprendizaje para Egresados de Educacion Media*, which accredits the end of the secondary cycle; (b) the tests undertaken in 2001 and 2002 are not directly comparable with the other years because of the introduction of the new evaluation system (SINEA); (c) is also an accreditation exam; (d) combination between criterion and norm based.

B. LEARNING OUTCOMES

Low learning outcomes on national exams. Given all the caveats, Figures 1.18 through 1.21, which depict some test score results at the primary and secondary level, should merely be used to compare each country against itself.³¹ Table 1.9 in the Annex gives

³⁰ In norm based exams, the result obtained by the student is determined taking as a basis the results of the whole student group being examined. In criterium based exams, the results obtained are compared with benchmarks that students need to achieve to dominate a number of skills and knowledge areas.

³¹ Although exams are not always fully comparable in time for the same country – this is for instance the case of Guatemala.

more primary and secondary results for each country in different time periods. Overall, what is clear when analyzing the results in each of the countries is that: (a) in all countries, except Costa Rica, average test scores are considered to be either low (basic) or low-intermediate vis-à-vis the country's established standards; and (b) in all countries where exams are comparable over time, there is no clear improvement trend in the results over the second half of the 1990s or early 2000s.

It is important to keep in mind that being "intermediate" in El Salvador is not the same as being "intermediate" in Nicaragua, for example. In El Salvador, students are considered to be in the intermediate achievement range if they can identify and understand but cannot elaborate or apply their knowledge. In Nicaragua, this description corresponds more closely to what the country defines as a "basic" level of achievement. In any case, in terms of skills, and more particularly reading skills, it is important to understand that the low learning achievement reported for all countries is associated with low levels of reading comprehension (which is often taken as the most relevant indicator of educational quality at the third grade). In Honduras, it appears that in grade 3 a majority of students cannot identify characters or ideas in what they read nor identify parts of speech. In grade 6, students test slightly higher in Spanish but slightly worse in math³². Results are substantially lower in disadvantaged schools. In El Salvador, around 25 percent of students were not able to identify the main message of a simple written test in 2001 and about 40 percent were not able to make slightly more complicated inferences about it.³³ These percentages increase to 50 and 60 percent respectively, if we consider the fraction of correct answers that are the result of mere chance, and they substantially increase for the students whose overall result to the exam is below average. They are also substantially higher for the poorer socio-economic groups.

Progressing through the grades, we also see that grade 9 results are particularly low in the countries for which there is testing at the lower education level (El Salvador and Costa Rica).

³² Care needs to be taken that the Honduras standardized exam may not reflect fully the curriculum contents.

³³ See Schiefelbein (2004).

Figure 1.18: Test scores results in El Salvador (Source: Table 1.9 in Annex I)

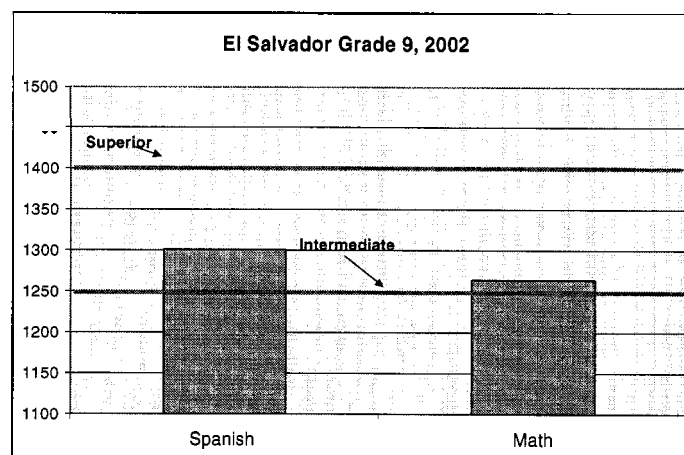
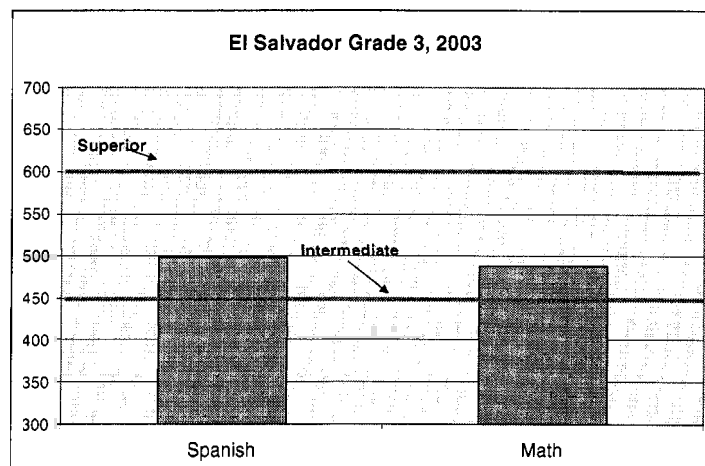


Figure 1.19: Test scores results in Honduras

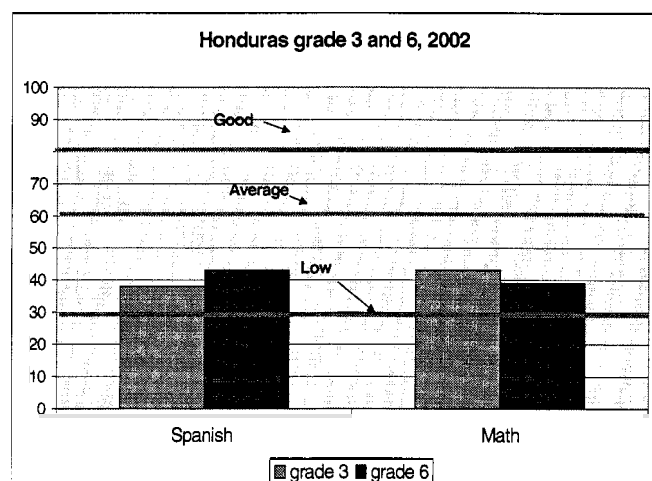


Figure 1.20: Test scores results in Nicaragua

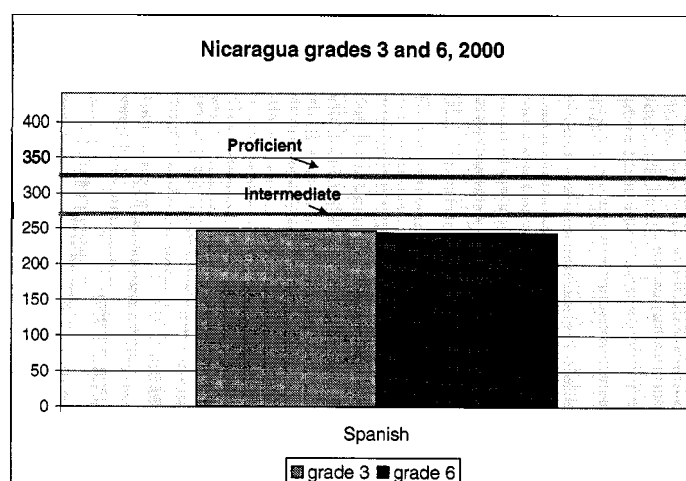
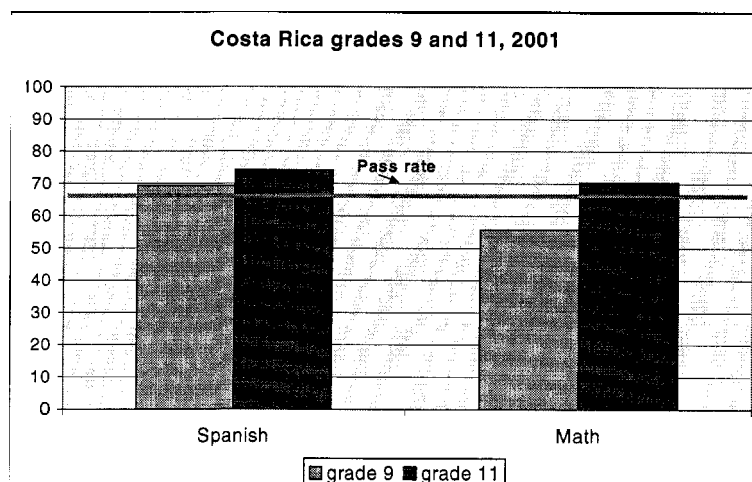


Figure 1.21: Test scores results in Costa Rica



Low learning outcomes on regional exams. The results of the 1997 Latin American assessment (see Figures 1.22 and 1.23) show that Honduras under- performs vis-à-vis other Latin American countries, even considering its low GDP. The Latin American countries, in turn, perform poorly vis-à-vis the OECD, as illustrated by Chile, one of the best performers in Latin America, which ranked poorly on the PISA exam.

Overall, this brief analysis suggests that quality, as measured by learning outcomes is an issue that requires urgent attention in Central America. The barriers to quality, which will involve analysis of learning determinants in Central America, will be addressed in the next chapter.

Figure 1.22: Third Grade Mathematics Test Results and GDP per Capita for Selected Countries

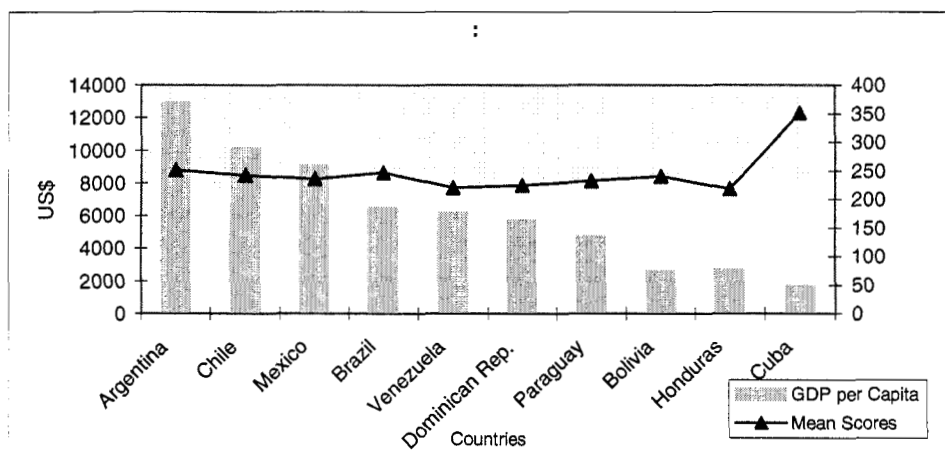
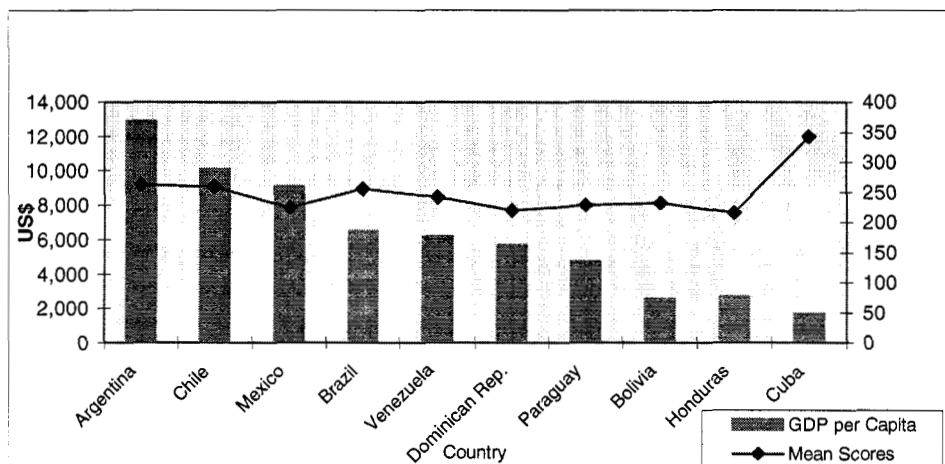


Figure 1.23: Third Grade Language Test Results and GDP per Capita for Selected Countries



Source: UNESCO/LLECE (2000) and US Government Central Intelligence Agency, The World Fact Book, 2001.

IV. Rates of Return to Education

While test scores are used as a frequent proxy for education quality in that they measure student learning, longer-term outcomes such as individuals' income, health, and happiness, and countries' growth, prosperity, and peace, are larger goals for education systems. These long-term outcomes are nearly impossible to measure because they are affected by multiple other factors that are difficult to control for, and because longitudinal data is very difficult to come by. One measure of longer-term educational outcomes that

can be analyzed is the rate of return to education. Rates of return measure the impact of schooling on individuals' future earnings. They are important not just as a way of measuring the quality and effectiveness of schools, but also because people's earnings are a critical link between education and national growth, poverty reduction, and income distribution. This section analyzes the private rates of return to schooling in Central America. We find that while private rates of return in Central America are generally comparable to other parts of the world, they are low compared with much of Latin America and have been declining in recent years. We also find, as expected, that rates of return are generally higher for the higher education levels but that they are oddly low for the lower secondary level across Central America signaling problems at this level.

While many factors contribute to individuals' future earnings, calculation of private rates of return to schooling provides a widely used method to separate the impact of co-varying effects on wages. This allows us to estimate the impact of educational attainment on later earnings. Annex II provides a description of the models that were specified to estimate private rates of return for the four countries in the report. In essence, we address two main questions: (i) what is the value of an extra year of schooling; and (ii) what is the value of the different educational levels (primary, secondary, and tertiary).

Unfortunately, due to data and time restrictions we do not investigate social rates of return to schooling.³⁴ Social rates of return measure the net benefit to societies of educating their citizens. Part of the social rate of return to schooling is the private rate return - how individuals benefit from schooling - but other benefits, such as higher national productivity, technological and intellectual development, and reductions in social costs due to imprisonment, health problems, high birth rates, and general poverty, are not evident in estimates of private rates of return. It is highly probable that in Central America social rates of return to schooling are considerably higher than private rates of return.

We report private rates of return to schooling, overall and by education level, in Table 1.4. To make the analysis as comparable as possible among countries, we undertook these estimations using only the salary of individuals' main occupation, and using the cohort of 18-60 year-old dependent workers. We also divided this group into three sub-cohorts to assess the evolution of private rates of return over time.³⁵ Econometric details on the estimations are also reported in Annex II. To facilitate the interpretation of the rates of return, we also present a number of instructive figures (Figures 1.24-1.30).

Private rates of return in Central America tend to be lower than the Latin American average. Our returns indicate that an additional year of education generates an increase between 9 and 11 percent in private earnings in the four Central American countries (Figure 1.24). While this is not an insubstantial figure, it is lower than the average 12 percent in Latin America. What makes this particularly concerning is that

³⁴ Studies of the social returns to schooling are much rarer than those of private returns to schooling. One recent study is Junankar and Liu (2003).

³⁵ An F-test was performed to assess if the rates of return are significantly different across cohorts, finding the differences statistically significant.

private rates of return tend to be lower when larger proportions of the population are educated because there is a large supply of skilled labor.³⁶ Because average educational attainment is higher in Latin America as a whole than it is in Central America we would expect to see higher private rates of return in Central America.

The fact that the rate of return is lower in Central America raises some concerns about the quality of schooling as well as the availability of jobs and demand for skilled labor in the region. The lower rate of return in the Central American countries suggests that an additional year of education provides less added benefit to would-be employers, probably because of the low quality of schooling discussed previously. It may also mean - either alternatively or in addition - that there are not enough skilled jobs available for people as they complete their schooling. There is little evidence, however, that the demand for skilled labor is flat in Central America.³⁷

Table 1.4: Private Rates of Return					
	Cohorts:	18-60	18-30	31-45	46-60
El Salvador, 2001	Average	9.4	6.8	10.8	11.4
	Primary	6.2	2.2	6.5	9.4
	Lower Secondary	4.8	4.5	6.0	7.5
	Upper Secondary	11.9	8.9	14.3	18.0
	Tertiary	18.9	17.9	18.9	13.0
Guatemala, 2000	Average	11.5	9.9	12.0	13.7
	Primary	8.2	5.7	7.5	12.3
	Lower Secondary	6.2	7.5	7.6	1.9
	Upper Secondary	24.3	21.4	26.0	33.0
	Tertiary	10.4	7.0	10.9	9.4
Honduras, 2002	Average	10.4	8.7	11.2	11.7
	Primary	8.7	6.4	9.9	10.1
	Lower Secondary	7.9	6.0	10.8	11.7
	Upper Secondary	13.8	13.3	12.4	15.1
	Tertiary	13.3	10.9	13.9	12.4
Nicaragua, 2001	Average	9.3	7.6	10.2	10.4
	Primary	5.8	4.4	6.3	7.3
	Lower Secondary	6.2	4.2	7.8	9.8
	Upper Secondary	10.7	11.6	11.6	2.2
	Tertiary	18.2	17.5	16.3	24.0
Costa Rica	Average	10			
Latin America	Average	12			
Asia	Average	9.9			
OECD	Average	7.5			

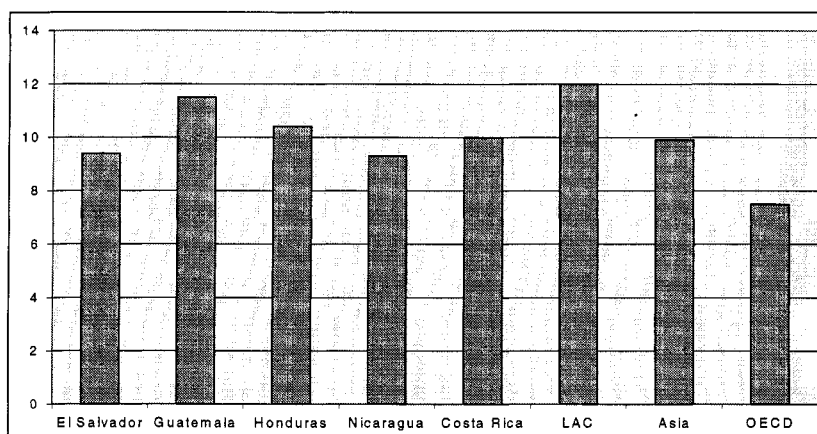
Source: Household Surveys; SANIGEST (2003); and Psacharopoulos and Patrinos (2002).

³⁶ This is evidenced by the lower private returns to schooling in the OECD and Asian countries recorded in Table 1.4 as well as from the higher private returns in Guatemala and Honduras where average years of schooling is lower than in Nicaragua and El Salvador (see also Figure 1.15).

³⁷ See AED (2004) for El Salvador and The World Bank (2004d) for Honduras on this subject.

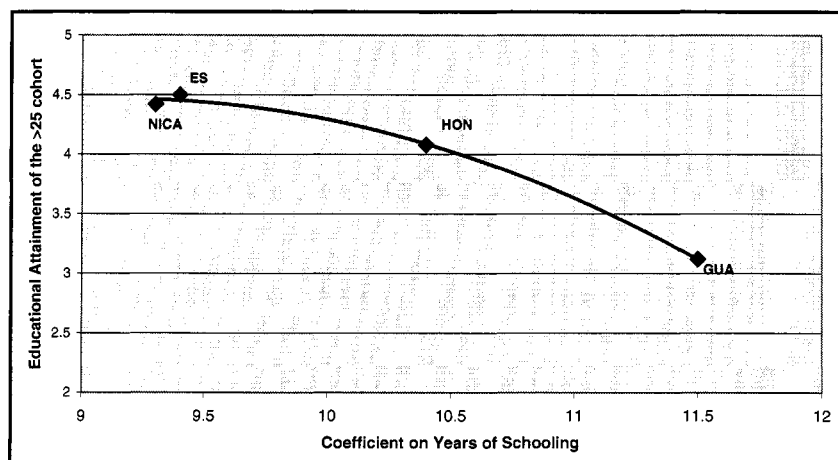
While private returns to schooling in Central America are more or less on par with those in Costa Rica and the Asian countries the higher educational attainment rates in these comparison countries suggest that private returns are low in Central America.

Figure 1.24: Private rates of return in Central America and other countries



Source: Table 1.4

Figure 1.25: Private rates of return and educational attainment in Central America

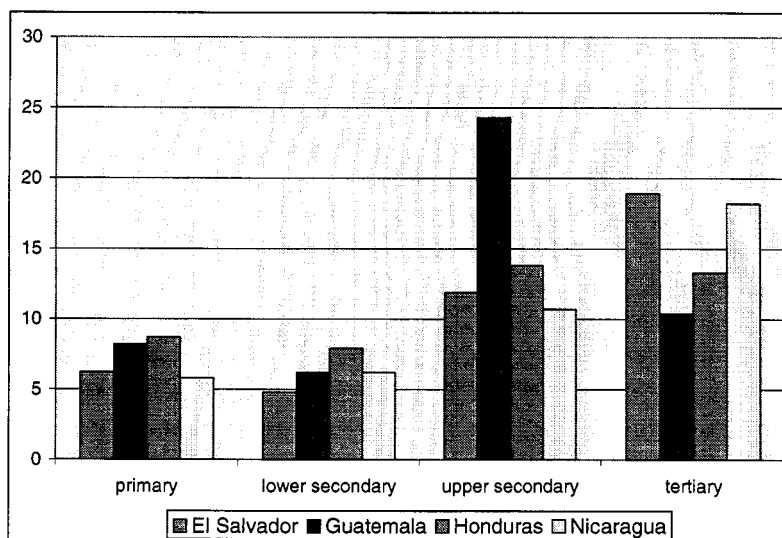


Source: Table 1.4 and Table 1.2 in Annex I.

Rising returns with the education cycle. When we disaggregate rates of return by education cycle (also Table 1.4), we see that in El Salvador, Honduras and Nicaragua returns increase from primary to upper secondary and again to tertiary (ignoring for the moment lower secondary). In Guatemala, the pattern is different. Private returns increase dramatically between primary and upper secondary, but then decrease at the tertiary level. This pattern of generally rising returns with the education cycle (also visible in Figure 1.26) is consistent with those found in other Latin American countries although the

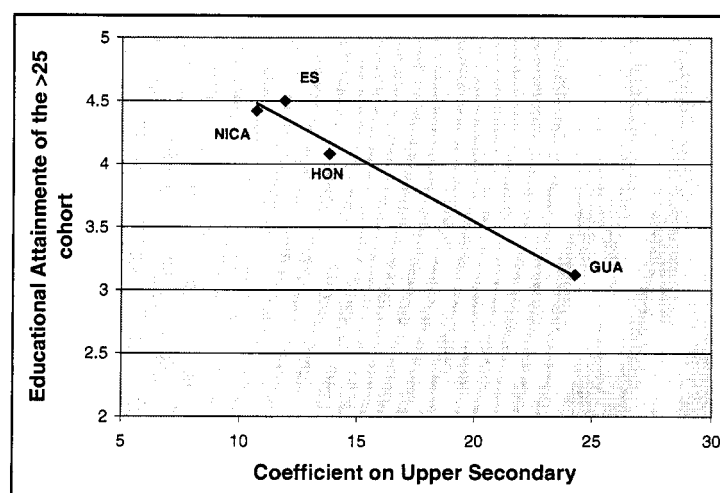
returns to secondary education tend to be slightly higher in Central America.³⁸ This pattern of rising returns can, again, be explained by supply issues. Central American countries, as we have seen, tend to have low enrollment at the secondary and tertiary level, compared to a much higher coverage at the primary level making individuals with secondary and tertiary education a limited commodity. Figure 1.27 illustrates this. It shows that for the cohort of individuals 25 years old or older higher educational attainment is associated with lower private returns. The particularly low educational attainment in Guatemala may, in part, explain the high returns to upper secondary.

Figure 1.26: Rate of return by level of education



Source: Table 1.4

Figure 1.27: Upper secondary returns and educational attainment



Source: Table 1.4 and Table 1.2 in Annex I

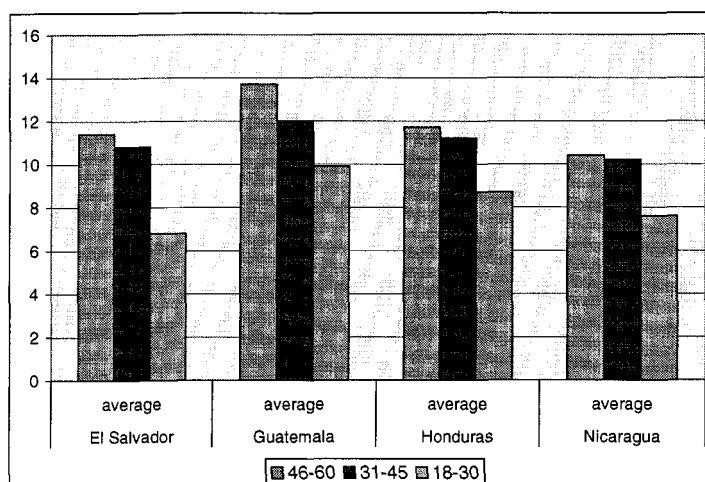
³⁸ See, for instance The World Bank (2003).

Central America is characterized by low private returns to lower secondary. As we noted above, countries tend to have higher private returns to higher levels of education. But in Central America the private returns to lower secondary are lower than the returns to primary in all countries despite significantly lower enrollment rates at that level and despite the fact that students should be learning valuable skills in lower secondary. The low private returns to lower secondary are largely responsible for the unfavorable difference between private returns in Central America and those of Latin America.

The low private returns to lower secondary signal a problem at this cycle in terms of quality and relevancy. This will be further discussed in the next chapters. Here let it suffice to say that lower secondary is a sub-cycle that tends to be seen as a preparation for upper secondary, rather than a stand-alone cycle that provides students with important skills. This has a somewhat important implication: relatively low private returns at this level are likely to serve as a disincentive for students to enroll and complete lower secondary causing a barrier to educational progress and making it impossible for those who drop out to continue on to upper secondary where they would reap higher returns.

Returns to schooling have declined across time as attainment has increased. Figure 1.28 illustrates how rates of return evolved across three different cohorts. Although private returns remain substantial, younger generations do not reap the same education premium as older generations. This trend may be explained by the increase in educational attainment that occurred in all countries within a similar time frame. This attainment increased, so did the supply of educated workers, causing some wage compression.³⁹ Part of the explanation may also lie in a somewhat “flat” demand for skilled labor. As mentioned above, there appears, however, to be sustained demand for skilled labor in Central America. Annex III presents a more detailed analysis of the evolution of rates of return, also by education level.

Figure 1.28: Evolution of rates of return across cohorts (Source: Table 1.4)



The next section looks at equity in Central American education. Later in that section we look specifically at differences in private returns to education across income quintiles.

³⁹ This is one of the main reasons advanced by Edwards (2004) for Guatemala. He also finds, using data on 15 different cohorts, that rates of return have tended to decrease in Guatemala and that wage compression, following the increase in the supply of educated workers, could be partly behind this observed drop.

V. Equity of Educational Outcomes

Up to this stage, educational outcome indicators have only been presented as averages for each of the countries, not allowing us to appreciate the differences in outcomes within each of the countries. Key dimensions to be looked at in an equity diagnostic include the urban/rural discrepancy, the differences across socio-economic strata, the gender gap, and, when applicable, the differences across ethnic or linguistic groups. This section reveals that inequalities in education are a pervasive and urgent challenge.

A. URBAN/RURAL DIVIDE

Looking at how urban and rural populations differ across educational outcome indicators is particularly important in Central America where large proportions of the population continue to live in rural areas. Populations are slowly and steadily moving toward urban areas, (see Box 1.2 on San Salvador) which also creates challenges for urban centers that must take in new groups of students each year from a very different socio-cultural background. Table 1.10 in Annex I reports the disaggregation of a number of core educational indicators across urban and rural areas in all countries under analysis (largely constructed using household survey data).

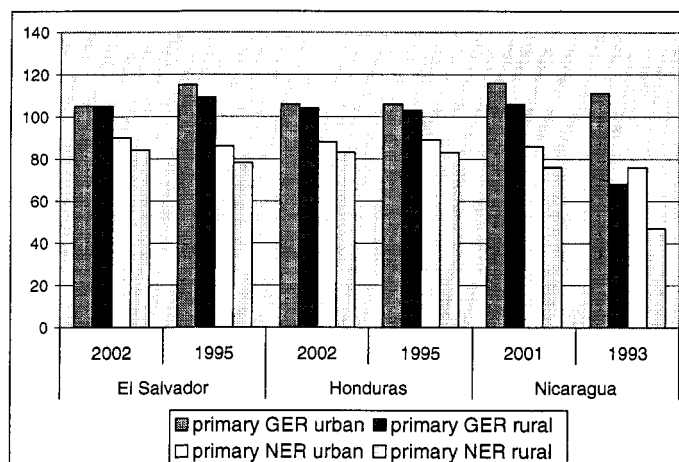
We compare the enrollment ratios that we obtain using the official MINED data and the household survey ones in two countries, El Salvador and Honduras, for which we had both data sources available, to show the discrepancy that may result from using these different sources because of migration patterns across areas (see Figure 1.3 in the Annex). Household and MINED data are very similar for GERs at the primary level but they differ somewhat at the secondary level. MINED data reports higher proportions of students in urban schools than does household data in both countries, although more so in El Salvador. This is likely due to children from rural households going to live in urban areas for secondary school (and living with relatives, for example). In MINED data the child is considered urban while in household data the child is considered rural.⁴⁰ We will use the household data primarily, as it more accurately captures the dominant urban or rural identity of the child.

The urban-rural enrollment is shrinking. Using household survey data, the enrollment and attainment gap between urban and rural areas has been shrinking over recent years in all countries for which we have past data (Figure 1.29). The rate of this change differs

⁴⁰ What is more unexpected is that, in El Salvador, household survey data show a similar primary GER in the two areas and a decrease in time in both indicators, which seems to indicate higher efficiency in the two areas, while official data show a much higher level of the rate in rural than in urban areas and a marked decrease in urban areas and marked increase in rural areas, which suggest decreasing coverage in urban areas and higher coverage and inefficiency in rural areas. What this may imply is that household surveys are less effective in collecting information in rural than in urban areas (population more spread out, difficult to reach), or still, that official data under-estimate enrollment in urban areas compared to rural ones (schools' directors take less time to respond, etc). In any case, this discrepancy has important policy implications since the decreasing trend in enrollment in urban areas showed by the official data would suggest that urgent action is required to counteract this trend, while the household survey data would not lead us to the same conclusion.

across countries, being strongest in Nicaragua. The progress is due to a proportionally stronger increase in rural than in urban areas in educational attainment and enrollment. Figure 1.30 illustrates this point for primary. GERs in primary education are either equivalent or close to equivalent between urban and rural areas in all countries (a little less so for Guatemala where the GER in rural areas is still lower than 100 percent). Most countries invested heavily in expanding access to schools in rural areas in recent decades. The development of rural community-based schools in Honduras, Guatemala and El Salvador discussed in Chapter V explain, in part, the coverage increase.

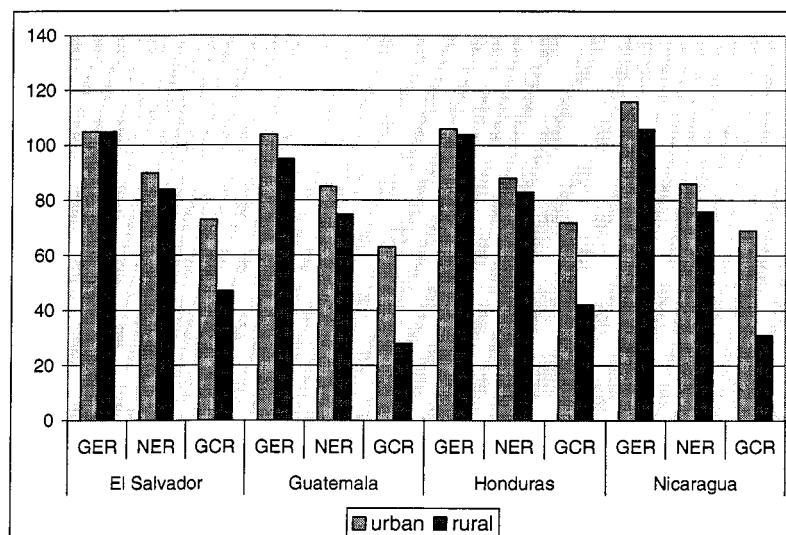
Figure 1.29: Evolution of GER and NER across urban and rural areas (Source: Table 1.10 Annex I)



Lower efficiency in rural areas. Nonetheless, Figure 1.30 also illustrates that primary completion rates (for the 12-21 year-old cohort) are still much lower in rural areas than in urban ones. This points to challenges in getting students to progress successfully through school and remain in school. Additionally, differences in NERs tend to be slightly larger than the ones in GERs,

indicating that there are higher levels of inefficiency in rural areas, and both late entrance and, above all, repetition rates are higher in rural areas (see Figure 1.4 in Annex I).

Figure 1.30: Primary GER, NER and GCR in urban and rural area (Source: Table 1.10 Annex I)

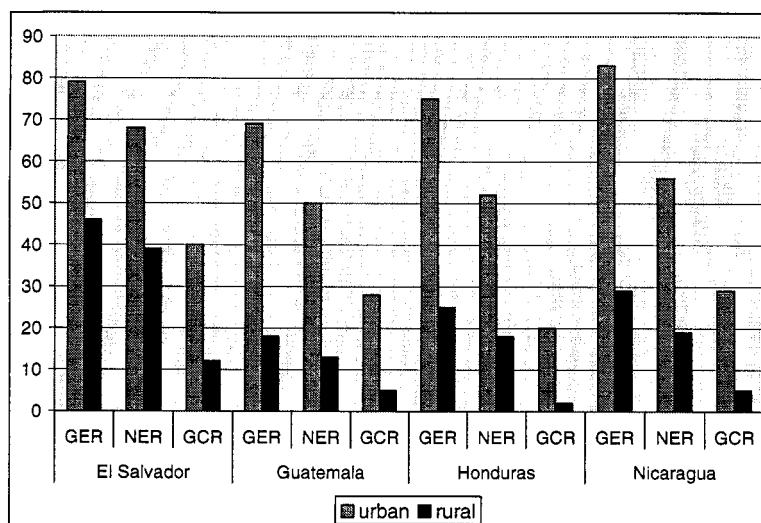


Secondary coverage gap between rural and urban areas. At the secondary level there remains a huge gap in terms of both GERs and NERs between urban and rural areas (see Figure 1.31). Keep in mind that temporary migration is accounted for when we use household survey data. The gap is even larger in completion

terms.

Lower educational achievement in rural areas. Finally, large discrepancies in educational achievement exist between urban and rural areas (as measured by test scores – See Table 1.11 in Annex I). In Guatemala, Honduras and El Salvador, these differences systematically favor urban areas. These discrepancies do not wholly favor urban areas in Nicaragua (nor in Costa Rica), however, where rural students score just slightly lower than urban students in math and just slightly higher than urban students in Spanish. The lower differential between tests scores in Nicaragua may contribute to explain the lower repetition gap across areas.

Figure 1.31: Secondary GER, NER and GCR in urban and rural areas



Source: Table 1.10 Annex I

Is the primary enrollment rate falling in urban areas? There is some indication that primary enrollment and attainment may be falling in urban areas. In El Salvador, primary completion rate of the 12-21 year-old cohort between 1995 and 2002 have fallen from 76 to 73 percent in urban areas according to household survey data. Similarly, GER has been falling during this same time in urban areas according to MINED data. This could be seen as an indication that urban areas are being unattended. As more and more of the rural population moves to the large cities in El Salvador, it is plausible that urban areas are getting increasingly overcrowded and poor. This is likely to be contributing to the declining enrollment indicators.

Box 1.1: The Department of San Salvador

A puzzling issue relates to the low rates of educational coverage in the department of San Salvador, where GDP per capita is the highest in the country but where primary enrollment rates are the lowest in the country. One reason for this is the high and mounting populations in the municipalities that surround the city of San Salvador itself. Of an overall national population of 6,510,348, the municipal area of San Salvador (AMSS) has 2,052,493 or 31.5 percent of the national population. Whereas the country has a density of 309 inhabitants/km², the AMSS has 3,778/km². Furthermore, certain municipalities that form part of the AMSS, have even more alarming numbers: Cuscatancingo, to the north of San Salvador, has the country's highest concentration of inhabitants, with 18,777 inhabitants/km². The area's second most populated municipality, Soyapango, has 9,703 inh/km². On the one hand, it is likely that this population density is putting increasing pressure on education supply in and around these municipalities and that bottlenecks result following a discrepancy between demand and supply. On the other hand, as living conditions in these peripheral municipalities are precarious and the average socio-economic conditions of its inhabitants low, it is also reasonable to assume that the coverage indicators relative to these municipalities bring the department's overall record down.

MINED nevertheless directs only 20 percent of resources for coverage expansion to the AMSS as a whole. The rationale for this is twofold: (a) MINED's priority remains coverage increase at the rural level, and (b) it considers that AMSS' population should try to commute more among the schools distributed in the AMSS, thus reducing the problem of coverage. It nevertheless recognizes that certain municipalities present "pretty high" rates of school non-attendance (citing Mejicanos and Ciudad Delgado, among others).

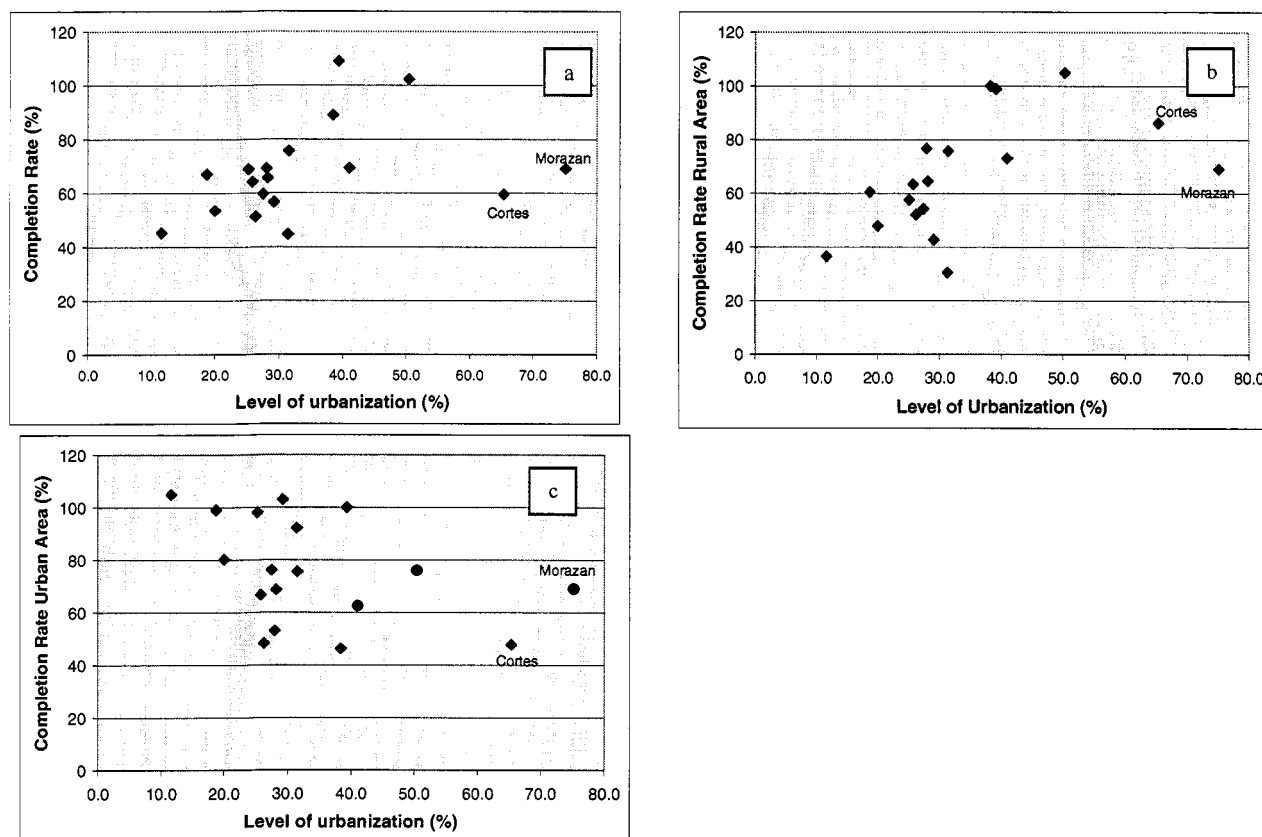
Source: The World Bank (2004b).

A similar trend exists in Honduras. The plots of Figure 1.32 graph each of the departments of the country by their level of urbanization and the level of their primary gross completion rate (calculated from official data as the current enrollees minus repeaters in grade 6 over the 12 year-old population), both overall and by urban and rural areas of the departments. Looking at the figures, two observations come to mind. First, there is a strong positive relationship between level of urbanization and primary completion rate but this relationship is driven by the rural areas of the departments rather than by the urban areas of the departments (in the most urban departments, rural areas do much better than in the most rural ones, while differences are less clear-cut in urban areas). In generally urban departments there is no clear relationship between how urban a particular area is and the PCR in that area. Second, the two most urban departments in the country, Cortes and Francisco Morazan, have significantly lower completion rates than the rough pattern in the rest of the country in both urban and rural zones of the two departments.

The main implication of this finding is that addressing completion in urban and rural areas in Honduras may require a dual strategy. In particular, rural completion may require a targeting of resources in the most rural departments, while completion in urban areas seems to require a major effort in the departments of Cortes and Francisco Morazan, on the one hand, and a somewhat global approach, not targeted per level of urbanization of

the departments, on the other one. El Salvador may require a dual strategy as well, to address the increasing coverage issue in San Salvador.⁴¹

Figure 1.32: Honduras-Level of urbanization and completion rate, by department (2002)



Source: The World Bank (2004c)

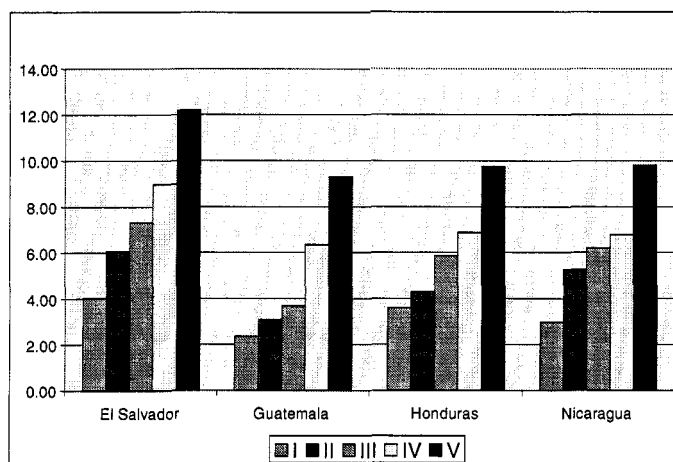
B. SOCIO-ECONOMIC DIFFERENCES IN EDUCATIONAL PERFORMANCE

Educational indicators in Central America are sharply divided along socio-economic lines with children from poor families suffering the inferior outcomes.

⁴¹ See The World Bank (2004 b).

Figure 133: Educational Attainment of the 25 year cohort

(Source: Table 1.12 Annex I)



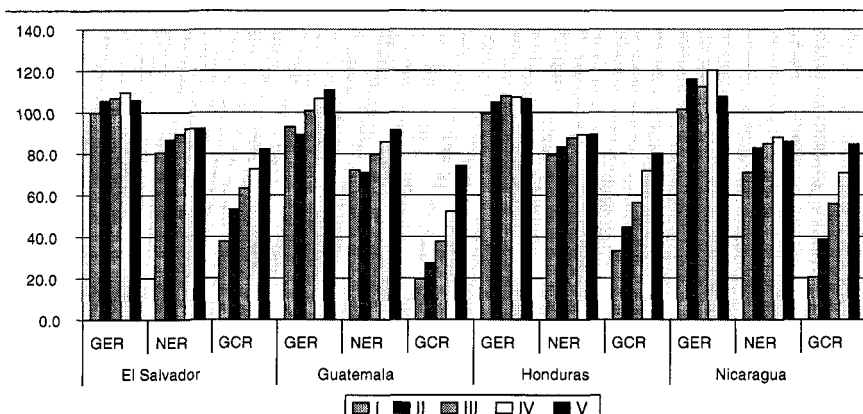
Still substantial inequities in coverage and completion.

Figure 1.33 illustrates, in a snapshot, the substantial difference in educational attainment across quintiles of the current 25-year cohort.

Figure 1.34 shows that, while for most countries, inequities are relatively small in terms of the current gross enrollment rates at the primary level (another encouraging result),

they tend to increase slightly in terms of the net enrollment rates (indicating higher incidence of late entrance and repetition in poorest quintiles) and, even more, completion rate⁴², at this same level. Table A.12 in Annex I reports the current level of a number of educational indicators across income quintiles for the countries under analysis.

Figure 1.34: GER, NER and GCR across quintile in primary



(Source: Table 1.12 Annex I)

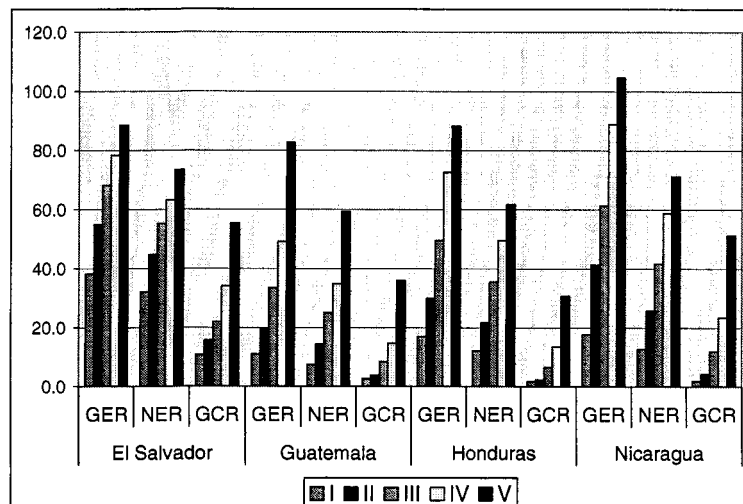
It should be noted that in Guatemala even GERs differ sharply over quintiles. It shows signs of being the most inequitable country in this sense. Recall that we found that Guatemala was the only country where rural GER was below 100%.

These inequities are then magnified at the secondary education level (where even GERs are very different across quintiles) (see Figure 1.35). In El Salvador - arguably the most equitable of the four countries - approximately five times as many children from the richest quintile complete the secondary cycle than from the poorest one (vs. about 2.5 times for primary). In Nicaragua - the least equitable country of the four in terms of

⁴² Calculated as the proportion of 12-21 year-old children having completed the primary cycle. At the secondary level, the 17-21 year-old cohort was used.

secondary education - 28 times more children of the richest quintile complete the secondary cycle than of the poorest quintile (versus four times for primary)!

Figure 1.35: GER, NER and GCR across quintiles in secondary (Source: Table 1.12 Annex I)

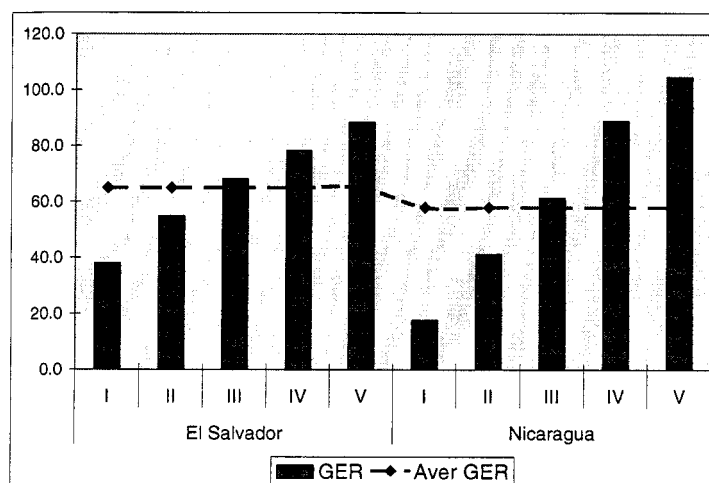


These findings on El Salvador and Nicaragua provide us with the interesting insight that, although Nicaragua does almost as well as El Salvador when it comes to secondary coverage, this expansion seems to have occurred in a much more “elitist” way - i.e. benefiting the higher socio-economic brackets much more than the lower ones

(see Figure 1.36). Part of the explanation may simply lie in the fact that secondary education expansion has been quite recent in Nicaragua and, therefore, that the current 17-21 year-old cohort had less access than the same cohort in El Salvador to the secondary cycle. Or, still, a lower completion rate of the primary level (particularly visible when we compare the completion rates of the 18 year old cohort – see above) suggests that in Nicaragua the expansion of secondary started from a smaller basis. Further exploration of this interesting difference between the two countries will be needed. While secondary coverage appears to be relatively more equitable in El Salvador, a comparison with Costa Rica indicates that the lowest SES quintile still has insufficient access to secondary education (Figure 1.5 in the Annex).

Figure 1.36: Average secondary GER and GER by quintile in El Salvador and Nicaragua

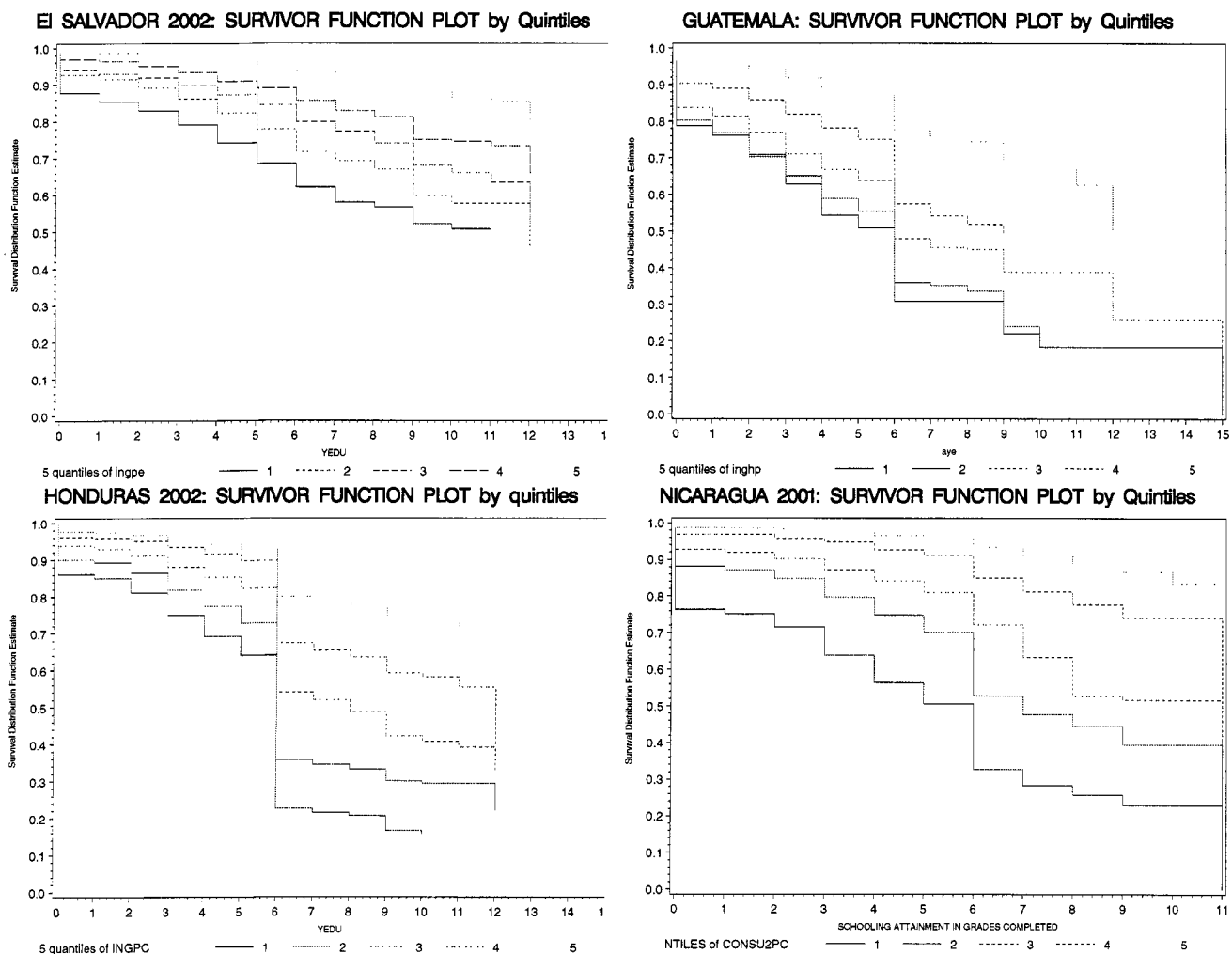
(Source: Table 1.12 Annex I)



Finally, the survival plots shown in Figure 1.37 reveal that while there may be nationwide improvements in student survival and drop out rates, these educational outcomes are strongly related to student socio-economic background. Again, these inequities are greater at the secondary level than at the primary level.

We note that the distance among plots is smaller for El Salvador, indicating less inequity, and larger for Guatemala and Nicaragua, indicating more inequity. Our picture of substantial inequity at the secondary level in Nicaragua is confirmed here. Policy implications of these findings for the expansion of secondary education, including the issue of trade-offs between primary and secondary, will be discussed in Chapter III.

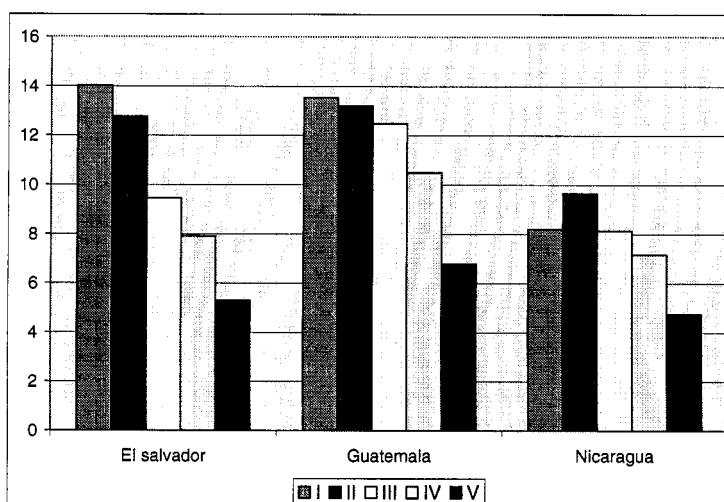
Figure 137: Survivor Plots by quintile



Source: El Salvador: EPHM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2002; Nicaragua, EMNV 2001.

Inequity in repetition. It is also clear that repetition, in particular in primary, is much higher for the poor (Figure 1.38). This fact confirms our finding that low educational attainment is also related to high age-by-grade distortion. Inequity in repetition mirrors strong inequities in educational achievement that will be exemplified in Chapter II.

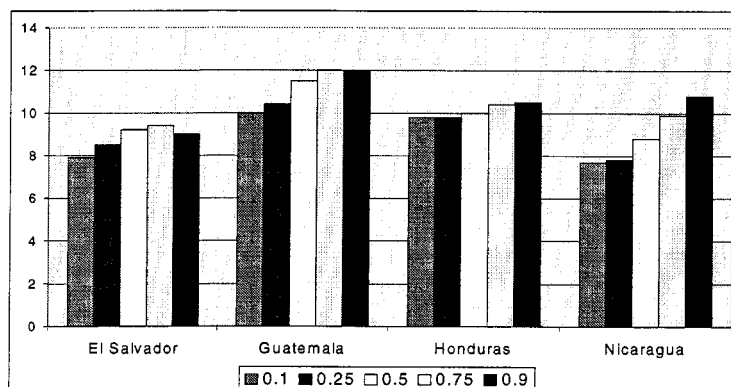
Figure 1.38: Repetition by quintile



Source: Table 1.12 Annex I

Unequal rates of return disfavor the poor. The analysis of private rates of return presented earlier estimated average private returns to schooling. But average returns do not represent the impact of education on all workers' earnings. In fact, in all four Central American countries private returns to schooling are higher for wealthier students than they are for poor students, suggesting, among other factors, lower learning levels.

Figure 1.39: Private returns to schooling by earning quintile (Source: Table 1.14 Annex I)

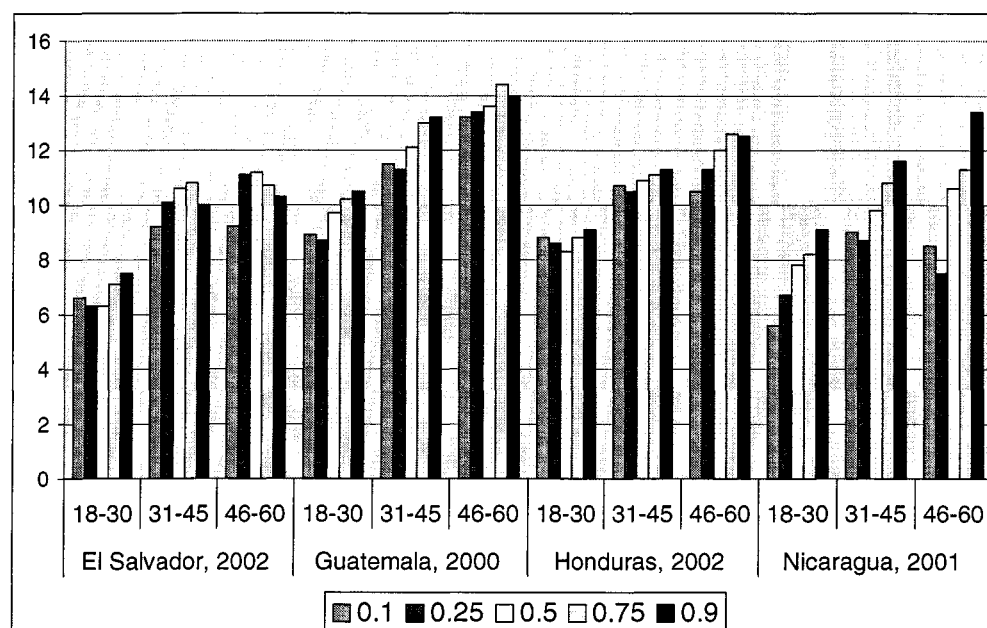


This is the result of two types of observations. First, marginal returns to education are higher for workers in the upper quintile of the conditional earning distribution than they are for the lower quintile in all countries (Figure 1.39 and Table 1.14 in Annex I). Second, there are a number of possible contributing factors that explain this difference (quality

of education, labour market connections, etc) and it is likely that their distribution is biased against low income households⁴³. In particular, it is likely that the education received by the upper income quintiles is of higher quality than that received by the lower income quintiles, that cultural capital passed through families and schools favours upper income groups in the labour market, and that upper income groups have more access to high paying jobs through personal connections.

This finding points to a magnification of the impact of education on income inequity: poorer people do not only have lower levels of educational attainment but they also seem to be reaping less benefits than wealthier people for a similar level of attainment. These lower private rates of return for the poor are likely to affect the incentives of many poor people. For example, lower private rates of return in primary for the poor in Nicaragua (shown in Table 1.14 in Annex I) could well contribute to explain why the completion rate of the primary cycle is so unequal, leading then also to high inequity in secondary coverage. Similarly, in Guatemala, the low private returns to lower secondary for the poor (Table 1.14 in Annex I) may explain why secondary coverage is so unequally distributed there. The fact that rates of return are unequally distributed only at the upper secondary level in El Salvador (Table 1.14 in Annex I) may contribute to explain why educational coverage is more equally distributed in that country.

Figure 1.40: Evolution across cohorts of rates of return by quintile



Source: Table 1.14 Annex I

This being said, it is good to note in Figure 1.40 that the divergence in rates of return across earning quintiles has tended to decrease over time in Nicaragua and Honduras,

⁴³ See, for instance, Arias (2004).

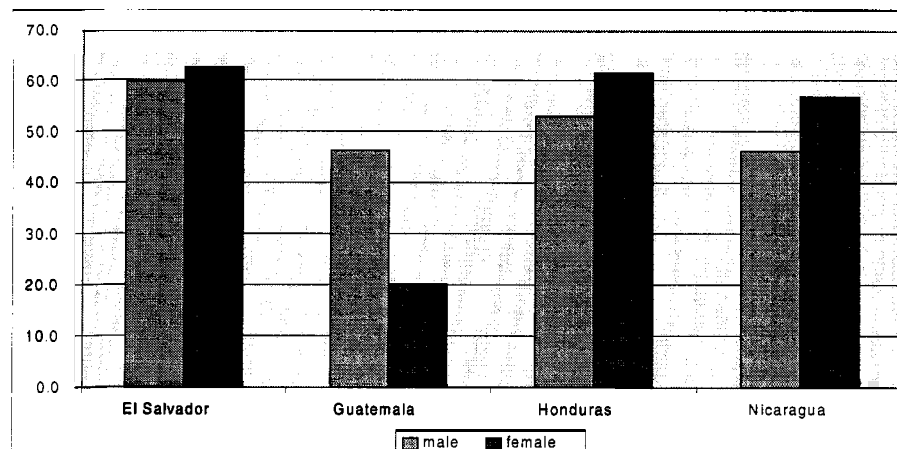
pointing to a reduction in the “un-equalizing” impact of education (although it still remains strong in Nicaragua). Trends are less clear-cut in Guatemala and El Salvador.

Equity has generally improved. In many of the indicators we have just examined there has been an equity-enhancing convergence of outcome indicators across SES quintiles over time at the primary education level (see Tables 1.12 and 1.13 Annex I). This evolution is largely due to faster-paced improvements in rural areas than in urban ones. The evolution of primary NER across quintiles for El Salvador and Nicaragua is quite illustrative of this convergent trend, pointing to an equalizing impact of the increased enrollment in rural areas. The evolution of primary NER and PCR over time can be seen in Figures 1.6 and 1.7 in the Annex. The trend was actually the opposite - although weakly - in Honduras, where the bottom quintile lost ground between 1995 and 2002 in primary NER.

Finally, on a longer time horizon, we also see that the enrollment push in rural areas that occurred in all countries, although not necessarily at the same time, combined with generally improving social and economic conditions in the 1990s, was particularly fruitful in ensuring a more democratic distribution of educational opportunities at the primary level. This is illustrated by the more equal pattern of completion of the primary cycle across quintiles for the 18 year cohort, which is very much the product of the 1990s in all countries, than for the 25 and 35 year-old cohorts, whose schooling life was disrupted by economic recessions, social disorder and military conflict. The improvements were particularly noticeable in El Salvador and Guatemala over the 1990s and less clear in the case of Nicaragua (where they seem to have happened after). With the exception of Nicaragua, the improvements in the distribution of educational opportunities were less clear-cut between the 25 year-old cohort (product of the second part of the 1980s) and the 35 year-old cohort.

C. EDUCATIONAL OUTCOMES AND GENDER

Figure 1. 41: Primary Completion Rate by gender



(Source: Table 1.15 Annex I)

Guatemala is the only country where there is a marked gap in educational performance between boys and girls. In all other countries girls do as well, or better, than boys (see Table 1.15 in Annex I). In Guatemala, however, females have much lower educational attainment (4.9 years versus 6.2 year for males), lower GER and NER in primary and secondary, and much lower completion rates in primary and secondary (see Figure 1.41). Repetition, age-by-grade distortion and academic performance are similar across the two genders in Guatemala. Lower enrollment, completion and attainment outcomes coupled with equitably distributed educational efficiency indicators suggest that there are cultural barriers to girls education, namely that families are less likely to enroll their daughters in school and are more likely to pull them out of school regardless of their performance in school.

In the three other countries, it is the low performance of boys at all levels that seems to be more of a concern. Lack of interest for schooling, high repetition rates and need to work are all reasons of low completion that may be prevalent in males.

D. EDUCATIONAL OUTCOMES AND INDIGENOUS AND AFRO-DESCENDENT POPULATION

We conclude this section on equity by assessing if there are noticeable differences in some educational indicators across specific ethnic groups. In Central America, we can distinguish three groups of countries according to the relative importance of their indigenous and afro-descendent population: (a) Guatemala with over half of its population, which can be identified as indigenous or afro-descendent; (b) Honduras with about 15 percent of its population which can be considered indigenous or afro-descendant; and (c) a third group of countries, composed of El Salvador, Nicaragua and Costa Rica, with between 1-7 percent indigenous or afro-descendent population.

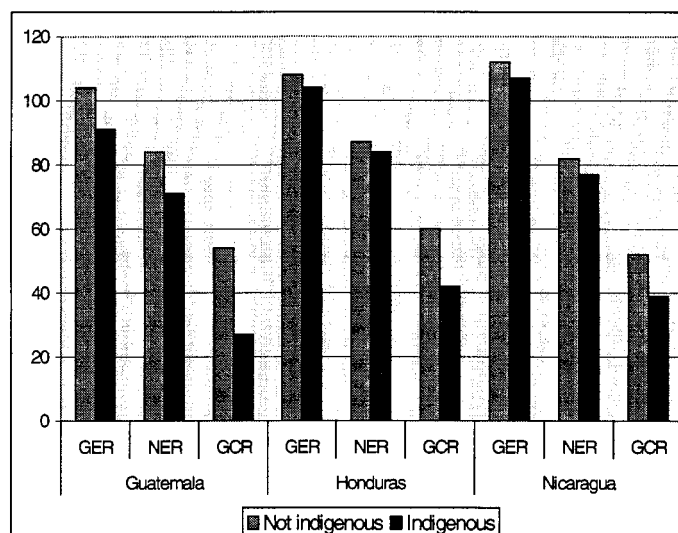
Figures 1.42 and 1.43 below as well as Table 1.16 and Table 1.17 in the Annex present key educational indicators for the indigenous and afro-descendent populations of Central America. Official MINED data generally do not report separate information for these groups making it difficult to present definitive information on educational outcome differences across ethnicity. In the future, MINEDs should separate their data along these lines.⁴⁴

Lower educational outcomes for indigenous populations. Indigenous students have lower educational attainment than non-indigenous students. In particular, differences are stark in terms of primary completion rates and are even starker for secondary completion rates. Differences are confirmed for educational achievement in Guatemala and Honduras. It is also clear, however, that there are a few differences across countries, with a smaller overall gap between indigenous and non-indigenous in Nicaragua than in Guatemala and Honduras. It would be interesting to explore why this is the case, particularly in view of the fairly developed/established Guatemalan policies in multiculturalism and bilingual education (see Chapter II), which it is hoped are supporting the learning needs of indigenous students in that country. The more recent

⁴⁴ Although this is changing in Honduras with the new 2003 school mapping which is explicitly collecting and reporting information for all the indigenous groups (Mosquitas, Mayas, Lencas, etc).

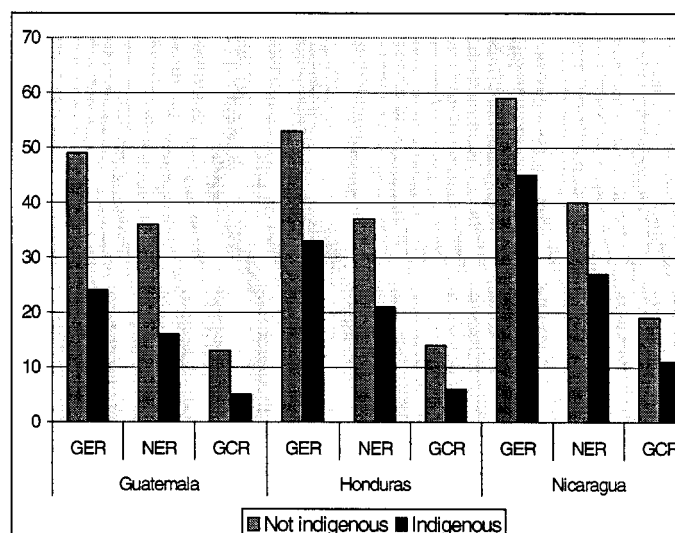
bilingual education strategy may be particularly effective in Nicaragua (see Chapter II) or policies to improve the performance of indigenous populations easier to apply in countries with much smaller shares of indigenous populations. Importantly, Nicaragua has four main ethno-linguistic populations while Guatemala has between 24 and 52 separate ethno-linguistic groups.

Figure 1.42: Primary GER, NER and GCR for indigenous and non-indigenous



Source: Table 1.16 Annex I

Figure 1.43: Secondary GER, NER and GCR for indigenous and non-indigenous



Nicaragua and Guatemala show limited progress toward rectifying existing educational inequities for indigenous students over the past decade. In Nicaragua indigenous PCR plummeted from 67 to 51 percent between the 35 and 25 year-old cohorts before bouncing back to 64 percent for the 18 year-old cohort. In Guatemala indigenous PCR has climbed steadily but still only reaches 37 percent while in Honduras, indigenous students made significant progress between the 35 and 25 year-old cohort but then lost two percentage points between the 25 year-old and 18 year-old cohorts. 48 percent of the 18 year-old cohort has completed primary school (see Table 1.17 and Figure 1.8 in the Annex).

VI. Conclusions

Important challenges lie ahead. This chapter has shown that educational attainment, primary and secondary enrollment rates, internal efficiency of education systems, and the gap between urban-rural areas and socio-economic groups (in primary), have generally improved in recent decades in Central America. It also showed, however, that important challenges remain in all areas in Central American countries. In particular: (a) primary completion rates are troublingly low in most of the countries under analysis; (b) there is a serious secondary education enrollment gap in all countries, as evidenced by low

transition to and/or completion of this cycle; (c) repetition is still too high in primary (in particular in grade 1); (d) quality is still unsatisfactory at all levels; and (e) inequity between urban-rural, socio-economic and other population sub-groups remains substantial.

Challenges vary somewhat across countries. This general conclusion varies somewhat across countries. We present below some key findings by country:

El Salvador: El Salvador performed well over the 1990s, consolidating and improving its results in most areas. The country has better educational indicators than all other countries in terms of timely entrance to primary, primary completion rate, transition to secondary education, secondary enrollment rate, urban-rural gap and socio-economic gap. Its regular survival rate curve, showing a gradual decrease in attainment but no sharp transition rate to grade 7, is particularly interesting and suggests that the country's basic education reform has been successful. However, repetition is still very high in grade 1 and the quality of the teaching/learning process is clearly insufficient, raising the need for urgent interventions at this level. The transition rate to upper secondary is still low and there are persistent gaps, in particular at the secondary level, between urban-rural areas and socio-economic strata, which make it also urgent to address the issue of broad secondary coverage. Additionally, preliminary evidence indicates that primary enrollment rates are falling in marginal urban areas. Finally, it is important to keep in mind that while El Salvador compares favorably to the other three countries examined in this report, it does not compare well with other Latin American countries. Costa Rica, for example, has much higher educational indicators. Continuous effort is, therefore, still necessary.

Guatemala: In spite of clear progress over the 1980s and 1990s (not always adequately measured due to the lack of good quality comparable information), Guatemala is at the other extreme of the spectrum, with the highest age-by-grade distortion, the lowest primary completion rate, the lowest secondary coverage (associated with both low transition and low completion of the cycle), and the worst combined (primary and secondary) socio-economic gap in terms of completion and coverage, which also reflects a persistent substantial gap between indigenous and non-indigenous population.

Honduras: Overall, Honduras is the country that has made the least progress over the past decade. Despite medium/long-term improvements in the primary completion rate and its distribution across socio-economic groups (the two are linked), many challenges remain. The proportion of overage children is high, late entrance is widespread and increasing, repetition rates are high throughout the education cycle, the transition rate to secondary education is very low, academic results are clearly insufficient and, in particular at the secondary level, the urban-rural and socio-economic gaps are persistent.

Nicaragua: Finally, Nicaragua, like El Salvador, has also made substantial progress over the 1990s, in particular in terms of timely entrance to primary, primary net enrollment rate (and its distribution across income quintiles), secondary enrollment rate, and the urban-rural gap in primary. Despite these gains the primary completion rate remains low

as does the distribution of primary completion across income quintiles. Repetition is still very substantial, academic achievement unsatisfactory and the urban-rural and socio-economic gap high in secondary (the worst gap among the four countries).

Three main priorities. The diagnostic makes it clear that the challenges presented above can be loosely grouped into three main priorities: (a) learning; (b) primary completion; and (c) secondary coverage. These can be further distilled to the first and third priorities (learning and secondary education coverage) considering the strong link between education quality and primary completion⁴⁵ (although reaching full completion will require particular focus on the quality of the education for the poor). Addressing the grave inequities that poor, rural, indigenous, and other marginalized populations face is fundamental to achieving all of these goals.

Chapter II will be devoted to the determinants of learning in Central America, suggesting possible options to improve it. This chapter also focuses in on specific barriers to and options for advancing quality education for disadvantaged sectors of the population, as this is necessary as well for attaining universal primary completion. Chapter III will deepen the analysis of the causes of low secondary enrollment, which, as foreshadowed in this chapter, are diverse, and suggest policy options to address them. The last two chapters will concentrate on two cross-cutting instruments, education spending and management which, if well used, have the potential of greatly improving education delivery, both quality and coverage.

⁴⁵ Illustrating this point, the internal efficiency analysis suggested that over-age, caused by late entrance and/or repetition, is a leading cause of non-completion of the primary cycle and low transition to secondary because of the increasing tendency to drop-out (for work or other related reasons) in children over a certain age. Similarly, low quality of primary and lower secondary is not only important for itself, but because, by generating lack of interest in families and students, it is also likely to explain why children drop-out at some point of their schooling cycle. Hence, overall, policies to promote timely entrance or even lower the official entrance age, together with policies which decrease the impact of repetition such as flexible promotion or accelerated education programs, may be useful; but even more important, however, will be quality improvements at all levels to improve cognitive skills, increase education relevance and education returns, and help reduce repetition.

Chapter II: Determinants of (and Constraints to) Learning in Central America

With the current global emphasis on access and enrollment in school, a focus of the Millennium Development Goals, for example, there is the risk of pushing to the side what is perhaps the most important objective of schools - to teach children meaningful skills and knowledge. This report puts that fundamental objective back into the limelight because without adequate learning outcomes people's ability to live healthy, enjoyable lives, compete on the labor market, and contribute to national growth are severely restricted. Learning can be thought of as a result of three factors: the quality of schooling; family, and community background and contextual factors; and personal characteristics of each student. This chapter will examine the determinants of and constraints to learning in Central America with emphasis on the first and second factors - the quality of schooling and background, or demand-side factors.

Poor learning outcomes are often thought of as a problem distinct from educational attainment and access. But low levels of learning directly impact educational attainment. This occurs in three primary ways: (a) inadequate learning outcomes can result in repetition and grade failure if students do not gain sufficient skills and knowledge to pass to the next grade level; (b) the quality of learning directly affects students' interest and enjoyment of school which contributes to their decisions regarding whether to stay in school; and (c) the quality of learning impacts the private rates of return of education, which in turn creates incentives or disincentives for attendance.⁴⁶

Because of this, learning is key to achieving primary cycle completion as well as greater enrollment in higher levels of schooling. This is witnessed in several phenomena in Central America including high repetition rates associated with higher dropout rates, lack of interest in schooling as a factor for school abandonment, and lower test scores associated with lower completion rates.⁴⁷ In all cases, these phenomena acutely affect disfavored segments of the population, to a large extent comprised of poor, rural, and indigenous students.

This chapter will, therefore, focus on the reasons behind poor learning outcomes in Central America, at all levels, with emphasis on the learning of the poor. As discussed previously, this challenge is identified as the single most important priority for educational reform in Central America. This priority is increasingly widely espoused by countries and development stakeholders. General quality improvements and focus on quality of delivery for the poor are the focus of the recent Education For All Fast Track Initiatives implemented in both Honduras⁴⁸ and Nicaragua.⁴⁹

⁴⁶ The link between quality as well as relevance and secondary education coverage will be further explored in the next chapter on the expansion of secondary education.

⁴⁷ See, for instance, Marshall (2004b) on Guatemala.

⁴⁸ EFA-FTI in Honduras focuses on educational efficiency improvements, over-age children, teacher management reform, and education for indigenous peoples.

⁴⁹ In Nicaragua, EFA-FTI focuses on performance-based delivery and school management.

This chapter begins with a discussion of the national assessment systems in the four Central American countries and how to improve them. We begin with this discussion because we argue that effective national assessment systems are key to understanding the learning challenges that confront each country and that improving these systems will help countries plan methods to tackle these challenges. The remainder of the chapter is then divided into two sections. The first examines some of the main determinants of and constraints to learning in Central America while the second focuses on policy options that respond to these determinants and constraints to learning. In both sections three main areas are investigated. These are: (1) student background characteristics, (2) teacher quality, and (3) curriculum and pedagogical practices. In the second section, we begin with an analysis of what differentiates high-performing low-income schools from low- and average-performing low-income schools as a means of introducing some of the subsequent policy recommendations. The conclusion of the chapter reviews the main challenges and policy recommendations put forward in the chapter towards improving learning in Central America.

I. A Review of Central American National Educational Assessment Systems

Improving student learning and completion will depend on ministries of education and communities having clear and accurate information on the strengths and weaknesses of education systems. This section, therefore, discusses the state of national assessment systems in Central America and proposes some ideas for strengthening evaluation and assessment in the region. Table 4.1 in Annex IV summarizes some of the main characteristics of these systems.

National assessment systems generally have two primary roles, (a) *a diagnostic and action role*: to provide inputs to specific audiences (education authorities, school directors, teachers, parents) for diagnostic and policy reform/correction purposes; and (b) *an accountability role*: to create accountability mechanisms for education authorities, schools and teachers.⁵⁰ To a lesser extent, some national systems also have a formal student *accreditation role* in which assessments are used to award certificates or diplomas to students based on their performance. The primary role of the Central American national educational assessment systems is diagnostic rather than accountability. This focus on diagnosis presents both positive and negative implications that are discussed in other research.⁵¹

The different roles of national assessment systems necessitate distinct assessment design and dissemination practices. For diagnostic purposes, teachers should be provided with detailed and accurate information on their teaching practices and their students' learning outcomes. For accountability purposes, information should be available to a wider

⁵⁰ This dual objective is also developed in Ravela (2002).

⁵¹ See Ravela (2002) for a discussion along these lines. Essentially, the argument is that the diagnostic role of national assessment systems is very useful and should be the primary objective of an assessment system but, without accountability for results, there is no security that the diagnostic will trigger changes. On the other hand, using the assessment system to evaluate schools and teachers in a "strong way", creating clear accountability, could be seen as a threat and de-naturalize the primary objective of the evaluation.

audience and should be linked to clearly defined repercussions (awards and/or sanctions) used to promote behavioral changes in specific groups of actors.

Heterogeneity across systems. While all four of the countries covered by this study have national assessment systems, their institutional history and integration differ considerably. El Salvador and Costa Rica have systems that date to the late 1980s/early 1990s and have evaluation departments fully integrated within their ministries of education. Nicaragua, Honduras and Guatemala have begun national assessment more recently and have lower levels of institutional integration.⁵²

Standardized testing. All countries undertake standardized testing at different levels of the educational cycle (see Chapter I, Table 1.3 for more details) and accompany these assessments with analyses of school, teacher, and background characteristics that are associated with higher and lower achievement. The implementation of standardized testing for assessment purposes is a major development in Central America in the past decade.

Lack of dissemination. Despite recent advances in standardized testing, a weak point of all the countries' assessment systems is the insufficient dissemination of results on both tests and associated learning determinants. Limited dissemination greatly limits the possibility of these assessments having an impact on educational quality (as also shown in the last column of the table). In particular, it is striking that even in Honduras, where building accountability is among the chief objectives of the assessment system, results have not been widely disseminated. Typically, a limited number of reports are printed and the report is posted on the Internet, but that is the extent of dissemination. Perhaps most importantly, the results of the tests are not fully and systematically shared with the schools that took part in the testing in most countries.

Misalignment with curricula and standards. There is also a lack of timely alignment between tests, standards, texts and curriculum that characterizes the education systems in Central America. This, again, limits the potential of national assessment to contribute to improvements in teaching practices, curricula, and teacher motivation. Tests are often adjusted only much after curricular changes or changes in standards have been introduced, limiting their effectiveness in providing feedback. An example is El Salvador, where tests are still not fully reflecting the new standards introduced in 2000.⁵³ The situation in Honduras is similar.

Potential for regional collaboration. Up until recently, educational standards differed across each of the Central American countries. Now that regional Central American standards have been developed at both the primary and secondary level, there is a possibility of developing a regional assessment and/or accreditation system that could

⁵² A current debate is, for instance, under way on the sustainability of the UMCE in Honduras. The feasibility of creating a specialized institution with its own legal framework, organization and responsibilities is under analysis, as is the one of fully absorbing UMCE within the structure of the MINED.

⁵³ See Rapalo (2004).

greatly expand the potential impact of assessment.⁵⁴ Regional accreditation systems could even be used to facilitate students' movement across studies for educational opportunities.⁵⁵ The costs and benefits of these different possibilities should be assessed.

In sum, while there have been major strides in the creation of national testing, assessment, and evaluation systems in the past decade or two, these systems for the most part lack sufficient institutionalization and as of yet have only had a limited impact on improving the quality of education and learning in Central America.⁵⁶ With support, these evaluation and assessment systems will become a basis for identifying challenges and improving education. In confronting barriers to learning, Central American nations should seriously address the need for more and better assessment.

II. Existing Evidence on Determinants of Learning in Central America

The following section explores some of the most important factors contributing to student learning. For this section, a review of studies of factors associated with student achievement in Central America (including those mentioned above conducted by national assessment systems) was performed.⁵⁷ Findings from these studies were compared across countries and compared to Latin American and other international meta-analyses of such education production function studies.⁵⁸ In this section we discuss the main factors that were found to limit or enhance student learning in the region and offer some diagnostic information on each.

First, however, a few caveats are necessary. The findings from these Central American studies are not conclusive; there are a number of limitations to and weaknesses of education production function studies, particularly in developing countries. One such example is that education production function analyses face substantial methodological limitations, which are particularly well illustrated in a recent article of Glewwe (2002).⁵⁹

Secondly, these studies look at how different factors are related to student achievement on standardized exams, but standardized exams are themselves an incomplete and arguably, problematic, measure of learning and education quality. Using test scores as a proxy for learning outcomes is a common practice, but many researchers and theorists

⁵⁴ A Central American Assessment Institute is currently under discussion.

⁵⁵ A system of education title equivalence is already being coordinated by the CECC for Central America, but this effort would be greatly facilitated if county standards were more aligned on regional standards

⁵⁶ See PREAL (2003) for a similar conclusion.

⁵⁷ See Umansky (2004).

⁵⁸ Comparison studies included Fuller and Clarke, 1994; Hanushek, 1995; and Velez, Shiefelbein and Valenzuela, 1994 as well as the Latin American Laboratory UNESCO/LLECE, 2000.

⁵⁹ We will not review these limitations here, but maybe the most important one is related to the many variables that can affect learning and are not observed by the analyst. If some of these variables are correlated with some of the included variables, the impact of the included variables may be biased and inaccurate. Several methodological remedies have been proposed to address this issue, but none completely resolves the problem. In particular, student, family and community background variables are often insufficiently controlled leading to over or under-estimations of the impact of school-related factors. Additionally, there are school-related factors such as teachers' motivation, characteristics of teaching practices and directors' leadership that are typically not well captured in these types of studies.

argue that it may be incomplete, inaccurate, and unreliable as a proxy. A test measures only very limited areas of knowledge being a sample of certain areas of learning which in turn only comprise certain areas of educational outcomes. Objectives for educational outcomes are much broader, comprising not only wide subject matter knowledge, but also social, emotional, creative, physical, and intellectual development. Tests have also been found to be vulnerable to corruption, inflation, and measurement error.⁶⁰

Lastly, the studies undertaken on each of the countries under analysis differ substantially in the quality of their assessment. The El Salvador study uses more than one method of multiple regression to triangulate findings for example, while the Nicaragua study relies only on Pearson Correlation of a very limited number of variables without controls.⁶¹ Nonetheless, the studies provide initial evidence on the importance of student background, teacher, curricular/pedagogical, and school management factors which are developed in this section.

A. STUDENT BACKGROUND CONSTRAINTS TO LEARNING IN CENTRAL AMERICA

Student background constraints to learning have been recognized as critical barriers to educational effectiveness for several decades by policy-makers and academics, and since time immemorial by teachers and principals. The seminal work, *A Nation at Risk*, turned researchers' and policymakers' attention to the fact that students' families, communities, and backgrounds played decisive roles in students' educational outcomes. Studies in Central America corroborate these findings. Children from poor, ethnic minorities, and less educated families and communities all tend to do significantly poorer on exams than their more advantaged fellow students.

Table 2.1 below provides some initial evidence on demand-side constraints to learning. The table synthesizes the findings of the recent Central American education production function studies, discussed above, in terms of how student, family, and community-related characteristics impact and are related to learning. In all studies learning was measured by student achievement on standardized exams given at the primary level. The table also presents the findings from UNESCO's regional Latin American Laboratory study as a point of comparison. While not investigated in these studies, many of these same background factors have been linked to secondary school learning achievement, as well as to other educational indicators such as enrollment, entry-age and attainment.

⁶⁰ These and other critiques of the use of test scores as a primary means of measuring learning are raised in papers such as Murnane and Cohen (1986), Koretz (2002), Kane & Staiger (2001), and Jacob & Levitt (2002).

⁶¹ See Umansky (2004).

Table 2.1: Summary Findings on Family and Community Related Determinants of Education Quality in Central America and the Latin American Laboratory Study (N = Nicaragua, E = El Salvador, H = Honduras, G = Guatemala)

Factor		Num. of Studies	Positive	Negative	Mixed	Not Sig	UNESCO LLECE
Socio-Economic Status							
1	Family socio-economic level	2	E, H				
2	Community SES/average income	2	E, H				
3	Departmental (state) poverty level	1		G			
Family Education							
1	Parent or guardian education	1	N				
2	Father education/literacy	2	E, G				
3	Mother education/literacy	3	E, G, H				
Socio-Cultural Status							
1	Socio-cultural status*	0					Pos
2	Number of books at home or read by parents	2	E			G	Pos
3	Household belongings/resources	2	G			E	
4	Computational facilities in home	1	E				
5	Household size	1				G	
6	Distance to school	1				G	
7	Proportion of community that speaks non-dominant language	1		H			
8	Parents read to child	0					Pos
9	Family recommendations for out of school time	1	E				
Student Characteristics							
1	Age	1			H		
2	Gender (female)	3		G	E, H		
3	Indigenous first language	1		G			
4	Spoke Spanish upon entering school	1	G				
5	Working	2		E, G			
6	Live with both parents	2				E, G	
Student Education Experience & Background							
1	Preschool	3	E, G			H	
2	Absences	2		H, G			
3	Repetition (years or dummy variable)	3		E, H, G			
4	Over-age	2		E, G			
5	Time attended private religious schools	1	E				
Student Perceptions							
1	Motivation and Expectations	2	H, G				
2	Understands little	1		G			
3	Perceives favorable learning environment**	0					Pos

Source: Nicaragua: MECD (2003); El Salvador MINED (2002) and Mella (2002); Honduras: UMCE (2003) and Marshall (2003c); Guatemala: The World Bank (2004a) and Marshall (2003b); UNESCO/LLECE (1998, 2000).

* UNESCO's index variable for socio-cultural status is made up of four variables: parent education level, reading resources in the house, number of hours parents spend at home during the work day, and the structure of core family (i.e. number of parents in household).**

UNESCO's index variable "perceives favorable learning environment" which had the largest impact of any variable in the study included composite variables of student perceptions of a harmonious classroom, good friendships, and little fighting.

Notably, there is more consistency in the findings regarding these student background determinants of learning than for any other group of determinants (teacher, school, pedagogy, etc) underscoring that student background has particularly strong and clear effects on learning. The table shows that both student's family and community characteristics as well as personal attributes impact learning. In the area of family and community background characteristics there are clear economic, social, and cultural constraints to learning.

Students from poorer backgrounds have inferior performance on exams. The economic factors show that at the family, community, and even state level, lower income and increased poverty are associated with inferior test results. There are multiple reasons for this. Poor families are more likely to lack basic resources that help children learn. Lack of a clean, quiet, well-lighted space at home prevents children from doing their homework effectively. Poverty frequently results in malnutrition and hunger, which affect children's mental capacity, concentration, and interest in school. A recent study by the Pan-American Health Organization reports dangerously high levels of severe growth retardation in first-graders in Central America due to chronic malnutrition.⁶² Poor students are more likely to suffer psychologically at school if they are teased because of their tattered uniform or castigated for not paying voluntary school fees.

Parental education level and literacy are strongly related to student achievement. In all four countries measures of parental literacy and education are positively related to student outcomes. Educated, literate parents can help their children with homework and explain academic questions and doubts more easily than non-educated or illiterate parents. The cultural capital (values, vocabulary, knowledge, etc) of parents is much more likely to be harmonious with the cultural capital taught in schools if a student's parents were also educated in schools. This shared culture makes it much easier for children to learn because they have to learn one way of life rather than two. Parents who did not attend school are more likely to have very different practices and values than those the child experiences in school, a situation which makes adapting and learning the ways of either system more difficult.⁶³ Finally, educated and literate parents are much more likely to feel comfortable talking with teachers and principals about how their child is doing and working with them to support their child's learning than parents who, not educated themselves, feel uncomfortable or unwelcome in schools.

Social and cultural characteristics also influence learning. Several of the factors examined in the Central American and UNESCO studies find that social and cultural attributes and practices of families and communities are also related to educational achievement in predictable ways. Whether families have computers, and the number of books and overall belongings at home appear to be positively related to achievement in studies in El Salvador and Guatemala (although these factors are not statistically significant in all studies). Relatedly, UNESCO finds that parents that read to their children tend to have children with higher test score results. Ethnicity also seems to be

⁶² From PAHO (2004). Severe growth retardation is shown to be particularly acute in Honduras (15.2 percent) and Guatemala (14.5 percent) and less so in El Salvador (3.1 percent).

⁶³ See the work of Pierre Bourdieu on cultural capital.

important. Studies for Guatemala and Honduras indicate that students who speak an indigenous or non-Spanish language or who live in areas where more people do not speak Spanish tend to do poorer on exams. Recent studies of indigenous poverty in the Americas also corroborates that once controlling for other background factors, indigenous students are less likely to be enrolled in school.⁶⁴

These background characteristics not only create barriers to learning but also may relate to decreased demand for quality schooling. Many if not all of these factors create barriers to learning, and, therefore, also barriers to regular attendance, school attainment and completion. It is also likely that in addition to creating actual barriers, many of these family and student background characteristics are associated with decreased demand for schooling (because of lack of interest in schooling, low relevance of the schooling process or high direct and opportunity costs). Children from poorer families contribute relatively more to family income than those from wealthier families. The opportunity cost of having a child in school is therefore higher in poor families. Add to this the fact that poor children usually attend lower quality schools further decreases motivation to keep children enrolled, attending, and succeeding in school. Similarly, some indigenous families may have lower demand for quality schooling. If families do not think the education their child will receive is relevant to or respectful of their culture, history, and values, they may be less inclined to enroll or support their children in school.

In sum, demand-side constraints are predominantly a barrier to learning for disadvantaged sectors of the population. All of these findings regarding how background characteristics affect learning point to a fundamental conclusion: demand-side barriers to learning almost exclusively relate to marginalized segments of the population. It is important to note that this does not mean that in all cases it is the students' families or communities that need to change to improve their children's learning. In some instances this may be true; for example, malnutrition is a terrible and avoidable constraint to learning. In other cases the opposite may be true. Indigenous students may have a harder time succeeding in school, and an appropriate policy response is not to strip them of their indigenous identity but rather transform schools such that indigenous students can and do thrive in their studies.

B. TEACHER QUALITY

Teachers are vitally important to education and the learning outcomes of students. This is intuitively obvious but also increasingly demonstrated in academic scholarship.⁶⁵ Nonetheless, teacher quality is by itself a difficult variable to measure, as are the determinants of teacher quality. It is generally considered that teacher quality should include both a teacher's capacity to effectively transmit the curriculum to the students and the will, effort and continuity to do so. The capacity to teach (difficult to measure) is often considered to be related to the level and quality of the initial education received, the

⁶⁴ See various country-specific background papers for the Indigenous People, Poverty, and Human Development in Latin America, 1994-2004 study (World Bank, forthcoming).

⁶⁵ See, for example, Rivkin, Hanushek, and Kain (1998), Park and Hannum (2003), or Wright, Horn, and Sanders (1997).

quality of the in-service support and training, the existence of incentives to attract and retain talented and skilled individuals to the teaching profession, and the amount of experience a teacher has in the classroom. Teacher effort and motivation (also difficult to measure) is frequently found to be related to performance incentives such as evaluation from direct supervision systems, salary bonuses, or hiring and firing authority by some local actor or actors (such as a parent council).⁶⁶ Clearly, however, there are other factors that contribute to teaching capacity and teacher effort, many of which are very difficult to measure or even identify.⁶⁷

By and large, findings on the relationships between teacher characteristics and student outcomes in the Central American countries are less clear-cut than in larger meta-analyses. This could be due to data or analysis limitations as discussed above or reflect real contextual differences in these countries, such as particularly low quality pre-service or in-service education/training.

Following the structure of Table 2.2 we will start by reviewing some basic teachers' characteristics which influence teaching capacity, and then move on to more complex dimensions, related to incentives, which influence capacity, effort and motivation.

a) Teacher Capacity: Education, Professional Development, and Experience

i) Education Level

Teacher education is the teacher characteristic most consistently related to achievement across the studies under analysis, although this impact is less strong than the one detected in many meta-analyses. The weaker impact of teacher education in Central America may not mean that teacher education does not matter but rather it may point to low quality teacher preparation in the region, or teacher education that does not adequately prepare teachers to work with disadvantaged student populations. Relatedly, teacher subject knowledge is consistently found to be positively related to educational achievement in the Guatemalan and Honduran study as well as in numerous other studies.

⁶⁶ This last type of incentives will be more typically associated with decentralized education systems where an increasing role is given to the creation of "external" accountability relationships, by empowering parents and providing them with the information needed to enforce accountability.

⁶⁷ Benabou and Tirole (2003) and Villegas-Reimers and Reimers (1996) write about the intrinsic motivation of teachers.

Table 2.2: Summary Findings on Teacher Related Determinants of Education Quality in Central America and the Latin American Laboratory Study (N = Nicaragua, E = El Salvador, H = Honduras, G = Guatemala)

	Num. of Studies	Positive	Negative	Mixed**	Not Significant	UNESCO LLECE
Basic Teacher Characteristics						
1. Education level	3	N		G*	H	Pos
2. Training	1		E			NS
3. Bilingual ed training	1			G		
4. Experience	4		H	N	H, E	NS
5. Age	2			N	E	
6. Gender (female)	3	N	H		E	
7. Subject knowledge	2	G,H				
Job Characteristics						
1. Temporary contract	1				H	
2. More than one job worked	1				E	Neg
3. Satisfaction with salary	1				E	Pos
4. Satisfaction with school	1				E	
5. Experience at school	1				E	
6. Attends admin/pedagogical meetings	1				E	
7. Absence	2		H		G	
8. Mid-year turnover	1		H			
Teacher Perceptions						
1. Attributes student performance to student skills/interest	1	E				Pos
2. Attributes student performance to family conditions/SES	1		G*			Neg
3. Attributes student performance to teaching & ed. opportunity	1	G*				NS
4. Prognosis of student success	1	E				
5. Values multiculturalism	1			G		
6. Positive classroom climate	1	E				

Source: Nicaragua: MECD (2003); El Salvador MINED (2002) and Mella (2002); Honduras: UMCE (2003) and Marshall (2003c); Guatemala: The World Bank (2004a) and Marshall (2003b); UNESCO/LLECE (1998, 2000).

Notes: See Annex II.1 for study sources. * For certain ethnic groups, ** Mixed refers to both negative and positive statistically significant findings depending on grade level, content area, or in the case of Guatemala, ethnic group.

Further data on teacher education is provided in Annex V. Table 5.1 in Annex V provides an institutional description of pre-service and in-service teacher training, which can help us understand the structure, requirements and contents of teacher education programs in

Central America. Table 2.3 shows the education level of a sample of teachers using household survey data in four Central American countries. This analysis is only illustrative as household surveys are not representative of the full teacher population so care needs to be taken in interpreting the results too literally, although formal data collected by the MINED tend to provide similar evidence on educational levels.

In most of the four Central American countries, national guidelines require that primary school teachers have completed at least secondary or teacher-training school (*escuela normal*) while secondary school teachers are required to have studied at the tertiary level (see Table 5.1 in Annex V). El Salvador has the highest teacher preparation requirements. In El Salvador, all teachers, both primary and secondary, need to be certified from a higher education institution. In practice, these requirements are met to varying degrees in each of the countries, however. Teacher education level could be better assessed were we able to divide primary and secondary teachers but, unfortunately, we do not have this information disaggregated by school level. Additionally, the comparison between countries is made a little difficult by the fact that in Nicaragua, teacher education is presented as a separate education level in the household survey, while in Honduras and El Salvador it is included either in upper secondary (Honduras) or in tertiary technical (El Salvador).

Table 2.3: Highest level of education attained by teachers in Central American countries								
	El Salvador 2002		Honduras 2002		Guatemala 2000		Nicaragua 2001	
	<i>cases</i>	%	<i>cases</i>	%	<i>cases</i>	%	<i>cases</i>	%
Primary			11	1.3	15	2.9	52	18.4
Lower Secondary	14	1.9	4	0.5	16	3.1		
Upper Secondary	74	10.3	387	45.6(a)	328	64.1	104	36.9
Teacher School							72	25.5
Tertiary, Technical	440	61.2 (a)	18	2.1			8	2.8
Tertiary, University	191	26.6	422	49.8	137	26.8(b)	30	10.7
Other			5	0.6	16	3.1	16	6
Total	719	100	848	100	512	100	282	100

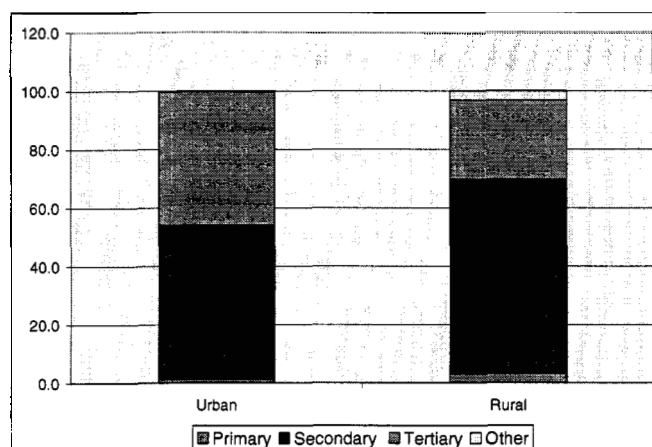
Sources: The World Bank (2004b,c); Arcia (2003); Guatemala, 2000 ENCOVI Household Survey. Notes: (a) Including teacher school; (b) Includes technical and university tertiary.

Gap between required and actual educational attainment. The difference in formal teacher education prerequisites is noteworthy (see Table 5.1) as is the striking differences between countries in terms of the degree to which the formal teaching requirements are applied. In El Salvador, only 12 percent of the teachers teach without the minimum requirement of a university degree. In Nicaragua, by contrast, 55 percent of active teachers have not attended university or teacher training school. In Guatemala and Honduras it is not possible to judge what precise percentage of teachers do not have the proper requirements because we can not disentangle upper secondary from teacher training institutes (but these fractions are probably about 45-50% and 30-35% respectively). In Honduras and Nicaragua, due to limited access to teacher training

schools and insufficient supply of teachers in rural areas, high numbers of under-qualified teachers are employed in the classroom. In Honduras, a substantially higher fraction of rural teachers have less than the required teacher qualifications than urban teachers (see Figure 2.1). This difference is much smaller in El Salvador. Although allowing a certain flexibility may be necessary to ensure higher teacher coverage in rural areas, it is clear that this is a sub-optimal situation, particularly because the higher poverty levels and lower educational performance in rural areas necessitate, if anything, higher-qualified teachers rather than lower-qualified teachers.

Figure 2.1: Honduras: Distribution of teachers across urban and rural areas by level of education attained

(Source: The World Bank (2004c))



It should be emphasized that the level of qualifications is not the only aspect which is relevant to teach in rural areas, experience, motivation, quality of training, sensitivity to cultural difference, etc, are all factors that are also important. This point will be made clear in the effective school analysis for Nicaragua and Honduras. In any case, an effective policy to attract and retain competent teachers in rural areas is needed in Honduras, Nicaragua and Guatemala (some steps have begun to be

taken in that direction).

Heterogeneous educational attainment. The four countries vary considerably in terms of the educational attainment of teachers. El Salvador has the highest educated teachers whereas Nicaragua has the lowest educated teachers, on average. Overall, about 90 percent of the teachers have tertiary level education in El Salvador, while this proportion falls to 52 percent in Honduras and only 29 percent in Guatemala and 13.5 percent in Nicaragua.

Teacher entrance exam requirements. El Salvador is the only country that has implemented an explicit policy to enhance teacher selection criteria. Since 2001, prospective teachers must meet a minimum cut off point on the secondary exit exam in order to study education. In addition, candidates must also, since 2001, pass a special accreditation exam called the ECAP (*“Evaluación de Competencias Académicas y Pedagógicas”*) at the end of the third year of teacher training school.⁶⁸ This is a positive step in the direction of higher teacher quality, which other countries may want to consider. To a certain extent the possibility of teacher requirements is facilitated by an excess supply of teachers in El Salvador, also reported in other Central American countries (although less so in rural areas).

⁶⁸ Exams such as the ECAP are a very valuable diagnostic tool to assess the quality of teacher education.

Low quality of teacher education. For the most part, teacher preparation is of very low quality in Central America. In El Salvador, where as we have seen, teachers are arguable better prepared than the other countries, only about 40 percent of eligible students passed the ECAP exam in 2001. Similarly, in Guatemala, results of the achievement tests of teacher-training students in teacher training institutions carried out in 2000 by the PRONERE program show that the mean test scores obtained by students were only 28.5 for math and 54.3 for reading, out of a possible 100 points, another indication of the low effectiveness of teacher training.⁶⁹ The quality and relevance of teacher education in the region is an extremely important challenge to confront.

Disconnect between national teacher needs and teacher education. A gap between demand and supply of teacher specializations frequently leads to teachers working in positions they were not prepared for and can further diminish teaching quality. In El Salvador, in the schools/universities where teachers are formed, a number of specialties are available: pre-primary education, primary education, and several different areas of secondary education. There is evidence that there is a certain discrepancy between demand and supply in terms of the specializations pursued both with respect to the educational level considered and to the specific subjects.⁷⁰ Pre-primary (26 percent) and social sciences (18 percent) appear to prevail, while primary education (8 percent) and secondary education (7 percent) are less sought after. In Guatemala, teacher education at the teacher school level has 12 different programs; the most attended being urban primary teacher education (60 percent), followed by pre-primary (14 percent), and rural primary (7 percent).⁷¹ It is striking that such a low share of teachers gets trained in rural primary (which includes special training in multi-grade and bilingual teaching) in a country where 66 percent of the primary enrollment is in rural areas.⁷² This could possibly explain why teacher education has an ambiguous impact in Guatemala.

ii) On-going Professional Development (or In-service Training)

Teacher training is another variable that has been traditionally analyzed in educational achievement studies. It was also tested in three of the studies under analysis (see Table 2.2). The mixed evidence concerning in-service training and student achievement found in the meta-analyses is confirmed in the Central American context. In-service professional development is generally of very spotty quality in much of the developing world, a fact that may account for its mixed and non-significant effects.

Overall, on-going professional development seems to have improved in all Central American countries over the last decade. Box 2.1 summarizes some characteristics of teacher training in all countries. In particular, the systems have become more structured, while at the same time also being more flexible and decentralized to increase their responsiveness to different training needs. Flexibility refers, for instance, to the offer of in-site and distance education programs. Decentralization of professional development to

⁶⁹ See Guatemala GC.

⁷⁰ See, notably, PREAL (2002a).

⁷¹ See The World Bank (2004a).

⁷² This point is also taken by PREAL (2003).

regional and local bodies, school-based delivery, and teacher reflective practice groups and teacher centers have been a main thrust of in-service training in recent years⁷³. Increasingly, professional development has also focused more on participatory methodologies and classroom innovation. In-service professional development is being actively used in Honduras and Nicaragua to provide certification and critical skills to teachers that lack teacher preparation requirements (*docentes empíricos*).

Box 2.1: In-service teacher training in Central America countries

In El Salvador, a comprehensive national system of development and training has been put in place to ensure a wide range of training options. Different types of training are offered depending on the institutional actor involved. Regional training is offered by the three regional centers, while local training is offered by the 242 “model schools”. The model school program is particularly interesting in its community-based focus and participative methodology. Training is very much related to the execution of the constructivist curriculum.

In Guatemala, the organization of a structured training system is more recent (2002) and, at this stage, only covers professional development for pre-primary and primary teachers. The program offers one main training option, which lasts two years and combines work with study, ensuring flexibility also through distance education methodologies. The focus of the program is on ensuring that teachers master the basic skills for the teaching-learning process and improve pedagogical practices in the classroom, with special reference to multi-cultural, multi-ethnic and multi-lingual environments.

In Honduras, the training system is organized around key actors such as the *Universidad Pedagógica* and the INICE (*Instituto Nacional de Investigación y Capacitación Educativa*), and is also partially decentralized through the regional CADs (*Centros de Aprendizaje Docente*). It provides a variety of training options depending on the institutional actor involved, including on-site and distance education programs. The general focus of the training programs is on ensuring lower educational failure, in particular in the lower grades.

In Nicaragua, a partially decentralized system provides a variety of professional development options. Of particular interest are the micro teacher centers (*Microcentros de Intercapacitación*), which, though in an incipient stage, provide a flexible and dynamic space for research and innovation for teachers. The “model school” program also offers a quality environment for teacher training. A key focus of the training system is the continuous update of teachers’ knowledge in all areas, including the execution of the constructivist curriculum.

In Costa Rica, a sophisticated training system responding to a variety of needs is organized around national, regional and local actors. Different types of training are offered depending on the institutional actor involved. The program “*Escuelas Líderes*” provides leadership on issues of educational quality. A key focus of the in-service training system is updating teachers on modern pedagogical practices.

Source: own elaboration on the basis of OEI (2003).

Notwithstanding these positive developments, there are still a number of challenges ahead to improve the relevance and quality of these training programs. In particular, it is generally highlighted that: (a) too little effort is put on changing/updating classroom

⁷³ A little less so in Honduras where teacher training is still quite centralized.

practices; (b) too little attention is paid to non-standard education contexts (multi-cultural environments, rural areas, etc); (c) too few formal evaluations exist of the effectiveness of professional development programs; (d) there is a lack of follow-up on trained teachers to see if they are applying what they have learnt in the classroom; and (e) in some of the countries, training implies missing substantial time from the classroom, leaving children without their primary teacher.⁷⁴

Other variables, in particular teacher experience, are frequently put forward as determinants of teaching quality and student educational achievement. However, although teacher experience is normally found to be positively related to learning in international studies, its impact appears to be insignificant or, at best, mixed in the context of the Central American studies (although it is a significant difference between high- and low-performing low-income schools in Nicaragua as will be discussed below). This seems to indicate that, at least for the average school, experience is less relevant to student learning than teacher qualifications and motivation. Why teacher experience does not appear to be more important in Central America requires future research.

b) Teacher Effort and Motivation: Incentives to Perform

i) Teacher effort

Typically, unobserved variables in educational achievement studies are teacher effort and motivation, although education production studies sometimes attempt to measure them by measuring teacher effective working hours and absences, the level of teacher satisfaction with the job, or teachers' perceptions on student success. Two Central American studies attempt to measure teachers' absences and one measures teacher satisfaction with the school, and results are generally non-significant (with one noticeable exception being that, as predictable, teachers' absence in Honduras is negatively related to student achievement). The general lack of significant findings may be due to possible measurement errors or to the fact that teachers' absences or satisfaction with the school fail to adequately proxy for teacher effort and motivation. Teachers' perceptions on student success are more systematically related to student achievement, although it is difficult to establish a causal relationship.

Where do Central American countries stand in terms of teacher effort as measured by effective teaching hours and teachers' absences? Overall, no national reliable data are available, making it necessary to use information coming from small databases, self-reporting, and household surveys (see Table 2.4).⁷⁵

⁷⁴ See, for instance, PREAL (2003).

⁷⁵ This data should not be interpreted too literally as it is subject to measurement error. For instance, all the surveys collect self-reported estimates of number of absences and, often, corroborate this data with the schools' registers. Nonetheless, it is very likely that only excused absences are declared or reported, which most likely underestimates actual teachers' absences. Additionally, we generally do not have comparable indicators across countries as we had for other variables.

Low teacher effort. It appears that teacher absenteeism is a serious problem in the countries for which we have information. In particular, in Honduras 40 percent of teachers missed one month or more of school in 2000 according the school census.⁷⁶ Also problematic it appears the gravity of the absenteeism problem may not be fully acknowledged in the region. Few principals in Honduras (7 percent) consider high absenteeism to be a problem in a recent school survey.⁷⁷ Teachers in Honduras also report working seven hours fewer than their official workweek, even including out of classroom hours worked (30 of 37).⁷⁸ Teachers in El Salvador and Guatemala report that they work even less than in Honduras. Average weekly work hours are significantly overestimated in that they do not correct for teachers' absences. For example in Honduras, assuming an average teacher absence of four weeks per year would lead to about 1140⁷⁹ effective hours, which would translate to substantially less hours in terms of teaching). We will analyze effective instructional time in the next section.

Table 2.4: Measures of Teacher Effort				
	Honduras	El Salvador	Nicaragua	Guatemala
<i>Teachers' absences</i>				
Teachers' yearly absences – days (a)	16	18		
Teachers with no month away (%) (b)	60			
Teachers with 1 month away (%) (b)	26			
Teachers with 2 or more months away (%) (b)	14			
Average declared hours per week				
Average hours per week (c)	30			
Hours worked at school each week (d)				22
<i>Average declared hours per week according to household surveys</i>				
Primary and Secondary	33		35	28
Primary	31		33	
Secondary	38		39	
<i>Public sector teachers:</i>				
Primary and Secondary			35	27
Primary			34	
Secondary			42	
Teachers (e)		27		
Teachers (f)		27		
Public sector teachers (e)		28		

⁷⁶ To be noted that data on teacher attendance in a small rural sample (N=132) provide a somewhat more positive evidence with, on average, about 16 days of teacher absences per year.

⁷⁷ See UMCE (2003b).

⁷⁸ Which includes not only weekly hours teaching, but also preparing classes, meeting with parents, undertaking administrative tasks, grading, etc.

⁷⁹ Using the school survey figure of 30 hours per week (slightly lower than the figure of 31.3 reported in the household survey).

Public sector teachers (f)		27		
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Sources: (a) Honduras: Di Gropello and Marshall (2004); El Salvador: Sawada and Ragatz (2004); (b) School Census 2000; (c) UMCE (2003a); (d) The World Bank (2004a); (e) With tertiary non-university education or less; (f) With tertiary university.

In sum, teacher effort appears to be low in several of the countries and, therefore, improving this variable is a key priority. To be able to make policy recommendations, we need to identify a number of key underlying factors that influence teacher effort and motivation and develop reliable means of collecting data on these indicators.

ii) Salaries

In Central America, we show below that when factoring in hours worked and time off, teachers earn as much, or more, than professionals with similar levels of qualifications. This implies that salary level should not cause any disincentive to work as a teacher. Secondly, we also show that there appears to be a disconnect between average salaries and teacher effort in that there are few mechanisms that link salary increases with measures of teacher effort such as effective work hours or teacher/student performance.⁸⁰

The relationship between salary level and student achievement was not tested in the Central American studies. El Salvador did investigate whether satisfaction with salary is related to student outcomes and found this relationship to be insignificant. Other research, has, however, investigated this subject more extensively.⁸¹

Average teacher salaries are on par with those of similar professions, or higher, when factoring in hours worked and time off. Table 2.5 shows comparative hourly salaries. As salary generally varies according to academic qualifications (see Box 6.1 in Annex VI), we control for different educational attainment records by comparing teacher salaries with the salaries of professionals with similar educational attainment levels. The

⁸⁰ Salary level is generally pinned to teacher education and training level and years of experience. These are useful proxies for teacher quality to a certain extent but they do not link with teacher *effort*.

⁸¹ A recent detailed survey on incentives and the labor market for teachers finds that, across different studies (covering European countries, the US, but also some developing countries), there is evidence that the level of teacher pay relative to other professions is an important determinant of teacher quality and performance. For instance, Nickel and Quintini (2002), on the UK, find that the relative pay of male teachers has an influence on their results. Also in the European context, Dolton and Van de Klaauw (1999) find that better wages in the non-teaching professions increase the tendency among the most qualified teachers to leave the profession for a non-teaching job. In Latin America, the LLECE study also finds satisfaction with wages to have a positive impact on student achievement. Essentially, higher teacher salaries are likely to attract more talented and skilled new teachers into the profession, as well as help retain them. It is also found, however, that the intensity of the link between teacher pay and teacher performance depends on peculiarities of the teacher labor market and remuneration structure and, that, in many cases, the link will be only weak. In particular, teachers are generally rewarded according to experience and qualifications, without taking actual performance or teacher effort into account: in such a system higher wages may attract more skilled and hard worker new entrants and foster further qualification, but not necessarily create incentives to boost student performance or increase effort by teachers who are already practicing. To illustrate this point, some studies show a clearer impact of teacher pay on education achievement when performance is directly taken into account in the salary scale, by introducing, for instance, team-based performance-pay (see Glewwe and others (2003) and Lavy (2002)).

information comes from household surveys and, therefore, is again purely illustrative.⁸² Primary teachers earn substantially more than professionals with a similar level of education in Honduras, and overall teachers earn somewhat more than similar professions in Guatemala. Teachers earn generally more than other equivalent professionals in El Salvador. Only in Nicaragua average salaries are similar or slightly lower for teachers. With the exception of Nicaragua, this tells us that teachers' salary levels are generally satisfactory within the economic framework of each of the countries.

Table 2.5: Hourly salaries across teachers and professions with similar educational attainment

Category	Monthly Income from Main Occupation (US\$) Net			
	Honduras, 2002	El Salvador, 2002	Nicaragua, 2001	Guatemala, 2000
TEACHERS				
Primary teachers	2.2		0.6	
Secondary teachers	2.3		1.0	
Public sector primary teachers			0.5	
Public sector secondary teachers			0.5	
Teachers (a)		3.4		2.1
Teachers (b)		6.2		
Public sector teachers (a)		3.8		2.2
Public sector teachers (b)		3.7		
Public Employees (c)				
With primary			0.6	1.0
With upper secondary	1.7	3.4	0.8	1.9
With tertiary university	3.0	4.1	1.8	2.9
With tertiary non-university		3.7	0.6	
Private Employees				
With primary			0.7	0.5
With upper secondary		1.7	0.9	1.3
With tertiary university		9.6	2.9	2.4
With tertiary non-university		2.3	0.9	

Source: Household Surveys; Notes: (a) With tertiary non-university education or lower. For Guatemala: all teachers; (b) With tertiary university. For Guatemala: all teachers; (c) All employees for Honduras.

Hourly salaries are likely to be even more favorable to teachers when one takes into consideration the fact that teachers, on average, work fewer weeks per year than non-teachers. In Nicaragua, if one assumes a 36-week year for teachers versus a 46-week year for non-teachers, we find that teachers are paid roughly equally to non-teachers. Recalculating the net salary per hour on the basis of 42 weeks per year, we find that the

⁸² It would be more correct to compare the official MINED data with official data on other professions' salaries, on census information and for professionals of a similar level of experience. On this last point, using the household survey, we are just assuming that the randomly selected teachers and other equivalent professionals have, on average, a similar level of experience.

salary per hour increases in Honduras from US\$2.2 to US\$2.7. Calculating in teachers' absences, we find a further increase to US\$3.0 per hour, just 10 percent less than public employees with university education (see Table 2.6).

The same pattern of comparable wages in El Salvador, Honduras⁸³, and Guatemala⁸⁴ is true when comparing average monthly, rather than hourly, salaries for teachers and non-teachers. Thus, if teachers in Central America do work fewer hours than non-teachers, it does not appear to be resulting in significantly lower salaries for teachers in these three countries (Nicaragua has lower monthly salaries, just as it also had generally lower hourly salaries).

Table 2.6: Honduras – Salary per hour for primary teachers

	Net salary per hour
Declared hours: 1628 hours per year (a)	2.2
Declared hours: 1314 hours per year (b)	2.7
Effective hours: 1189 effective hours per year (c)	3.0

Notes: (a) calculated on the basis of the weekly hours reported in the Household Survey and 52 weeks; (b) calculated on the basis of the weekly hours reported in the Household Survey and 42 weeks; (c) hours reported in the Household Survey adjusted assuming an average teacher absence of 4 weeks per year.

Disconnect between salaries and teacher effort. Teachers in Honduras (1997), El Salvador⁸⁵ (1995), and Guatemala (1996) all benefited from recent increases in the level of real salaries. In most cases, these salary adjustments followed periods of declines in real teacher salaries. Stagnant indicators such as low test scores (see Chapter I), high teacher absenteeism, and stagnant or even decreasing hours worked, do not suggest any obvious improvements in teacher quality generated from these salary improvements. At the same time there are sure to be many factors that contribute to stagnation in teacher work hours, absenteeism, and testing outcomes that may be entirely independent of salary level. Furthermore, increases in salary levels may have resulted in positive changes not captured in these indicators or there may be a lag period before positive changes are evident.

Table 2.7: El Salvador- Evolution of real salaries for public and private teachers

	IPC	Nominal Salaries		Real Salary		Hours worked per week		Hourly real wage	
	1992=100	Private	Public	Private	Public	Private	Public	Private	Public
1991-92	100.00	1,704.10	1,614.58	1,704.10	1,614.58	-----	-----	-----	-----
1995	142.91	1,459.36	2,132.43	1,021.20	1,492.19	23.43	24.75	10.90	15.07

⁸³ It might seem surprising that after the substantial salary increase that Honduras had since 1997 teacher salaries are just in line, or even lower, than other salaries. A salary increase was probably justified to fill the gap between teachers and other public employees.

⁸⁴ Salaries are, however, somewhat lower for secondary teachers in Honduras and public sector teachers with university degrees in El Salvador.

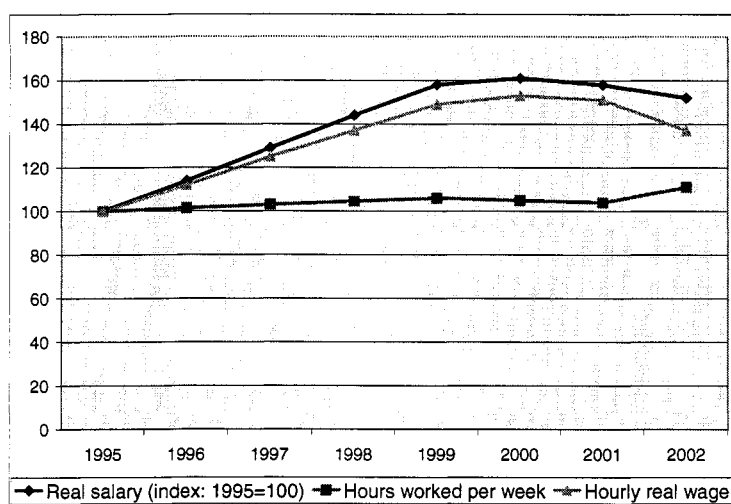
⁸⁵ The increase compensated for eroded purchasing power in the previous years in Honduras and El Salvador (see The World Bank 2004 b,c).

1999	153.91	2,155.99	3,632.76	1,400.78	2,360.25	24.90	26.24	14.06	22.49
2000	157.42	1,973.71	3,778.81	1,253.80	2,400.49	23.69	26.08	13.23	23.01
2001	163.31	2,376.10	3,862.77	1,454.93	2,365.24	24.79	25.90	14.67	22.83
2002	166.36	3,517.77	3,772.57	2,114.54	2,267.70	24.63	27.48	21.46	20.63

Source: EPHM, several years, and El Salvador, Banco Central; Notes: Exchange Rate: 1 Colon = 0.1142 US\$

Evidence taken from El Salvador on changes in hours worked and real salaries shows that, up to 2001, although hours worked have increased for public teachers, real salaries increased much faster resulting in a substantial increase in hourly salaries (see Table 2.7 and Figure 2.2). Since 2001, a reverse trend in real salaries and a substantial increase in hours worked has resulted in a substantial decrease in hourly salaries.

Figure 2.2: El Salvador- Evolution of real salary, hours worked and salary per hour for public teachers (Source: Table 2.7)



In Honduras, real salaries of primary teachers have substantially increased since 1997 with no equivalent increase in hours worked which, in fact, decreased over this period, leading to an even higher increase in hourly wage by 2002 (see Table 2.8 and Figure 2.3)⁸⁶. A similar trend can be seen for private teachers. A possible interpretation of these trends is that salary increases led to a dominant income effect rather than

substitution effect: i.e., that the salary increase, through its positive impact on income, led teachers to work less instead than increasing their effort. This is, however, only one possible explanation, more research needs to be done to confirm or reject this hypothesis.

Table 2.8: Honduras-Evolution of real salaries for public and private primary teachers

	Monthly nominal salary		Monthly real salaries (in 1990 lempiras)		Hours worked per week		Hourly Salary	
	public	private	public	private	public	private	public	private
1995	1670.1	1234.8	590.33	436.47	34.1	32.4	4.33	3.37
1996	2115.8	1410.9	606.45	404.40	33.0	34.6	4.59	2.92

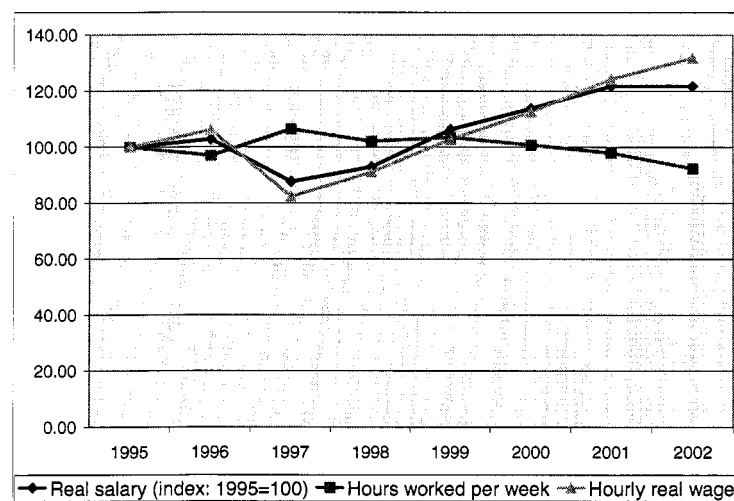
⁸⁶ An indirect consequence of the salary increase in Honduras was however the one of attracting unemployed university professionals into the teaching profession.

1997	2113.3	1905.0	517.30	466.31	36.3	33.9	3.56	3.44
1998	2543.8	2521.2	548.29	543.42	34.8	34.0	3.94	4.00
1999	3216.6	2784.4	627.62	543.29	35.3	37.5	4.44	3.62
2001	4497.1	3859.5	718.40	616.55	33.4	32.0	5.38	4.81
2002	4848.5	4020.9	718.27	599.37	31.5	30.9	5.70	4.85

Source: EPHM several years. Notes: 1 Lempira=0.06 US\$.

Figure 2.3: Honduras- Evolution of real salary, hours worked and salary per hour for public primary teachers

(Source: Table 2.8)



The tenuous link between teacher salary, teacher effort and student performance, suggests an absence of mechanisms to link salary increases to teaching quality or hours worked in Central America.

This is further evident in the salary structures of the different countries (see Box 6.1 in Annex VI). In all countries salaries are driven by seniority and academic qualifications, although to somewhat different extents across countries. This structure

encourages teachers to remain in the field and to seek higher levels of formal education, both potentially positive incentives. Yet salary structures pinned tightly to education and years of service fail to reward good teaching and learning. Furthermore, under the fiscal constraints faced by many countries in the region, large benefits related to academic title can tax governments and ultimately generate a disincentive for national policies on certification.⁸⁷

Performance-based and other targeted incentive reforms are few and far between. Incentive reforms attempt to promote specific choices or behavior on the part of teachers by instituting systems of rewards or penalties. While incentives have been shown in cases to boost student achievement, especially on the precise indicators rewarded by the bonus, they have in other instances been shown to be ineffective at prompting the desired behavior or choices, and in other instances to result in undesirable responses. Only El Salvador has introduced, and only recently, a merit-pay mechanism (*el bono al buen desempeño institucional*), which by linking salaries to school efficiency indicators in several areas is designed to provide a performance incentive. As explained in Box 6.1,

⁸⁷ This is the case in Honduras where an urgent reform of the Teacher Statute is needed to, at least, eliminate the title allowance for primary teachers.

this mechanism works as a monetary incentive for teachers in a school to work together to improve school outputs.⁸⁸ The effectiveness of this incentive still needs to be assessed.

Additionally, none of the Central American countries penalize teacher absenteeism nor reward teacher attendance or punctuality. In part, this is because teacher hours and attendance are difficult to accurately monitor. Also, there is very little culture of teacher assessment or accountability in Central America. A possible way to promote teacher effort might be to simply reward the number of hours worked by increasing the value of the hourly wage with the number of hours worked. This would, however, require accurate and reliable means of measuring teacher hours.

A positive development in Central America has been the introduction in El Salvador, Honduras, and Nicaragua (as well as Costa Rica) of pay incentives for rural or otherwise disadvantaged geographic areas. These incentives are designed to encourage skilled teachers to work in marginalized areas. Notably, Guatemala does not have a similar incentive for its rural teachers.

Strong inspection systems, decentralized systems of teacher monitoring, and fixed-term contracts are other types of measures which could enhance teacher performance but have been less consistently evaluated. Reflecting the weak teacher assessment culture mentioned above, centrally driven inspection systems are generally weak in all countries, with the possible exception of Costa Rica. On the other hand, several Central American countries are moving towards increasingly involving parents and principals in teacher monitoring in an effort to compensate for the lack of central information.⁸⁹ This “indirect” supervision system will be fully evaluated in the chapter on community-based school management. Finally, more flexible contracting options are also increasingly being used within a decentralized framework. This will also be examined in chapter V.

C. PEDAGOGICAL PRACTICES

Learning is not only about teachers but also, as the education production function literature tries to capture, about what is taught and how it is taught. Teaching strategies, in particular, together with teacher capacity and effort, will ultimately influence the way curriculum is transmitted to students. In general, Central American countries have nationally determined curricula, with limited regional differentiation. In contrast, teaching strategies are developed fairly autonomously by teachers. Teaching strategies, and to some extent curricula, can also differ according to the context in which they are applied. In particular, rural areas may require different strategies than urban ones, indigenous populations may have particular needs that traditional curricula and teaching strategies cannot address, and students who fall behind may require special teaching strategies to catch up with other students.

⁸⁸ This incentive is similar to Chile's SNED (*Sistema Nacional de Evaluación de Docentes*) although student scores are not directly taken into account.

⁸⁹ This is the “asymmetric information” rationale for decentralization.

The lack of common indicators of pedagogical practices between studies and the difficulties in measuring these practices in the first place make it difficult to discern clear trends (see Table 2.9 below). The meta-analyses reviewed do not find clear patterns of significance either, perhaps for the same reasons. An exception to this is that frequency of homework, length of instructional time, curriculum coverage and use of active pedagogies seem to have, overall, a positive impact on achievement. Pedagogical variables may also have an impact on repetition and grade failure, independent of educational achievement measured by test scores.

Table 2.9: Summary Findings of Pedagogical and Curriculum Related Determinants of Education Quality in Central America and the Latin American Laboratory Study (N=Nicaragua, E = El Salvador, H = Honduras, G = Guatemala)						
	Num of Studies	Positive	Negative	Mixed	Not Significant	UNESCO LLECE
Pedagogy						
1. Text use	1	H				
2. Homework frequency	2	H, G				
3. Blackboard use	1	H				
4. Teacher explains and asks questions	1	H				
5. Research-based teaching	1		E			
6. Participative methods	3	H, G			E	
7. Traditional methods	1	E				
8. Use of pedagogical supplies	1	E				
9. School-wide pedagogy	1	E				
10. School has education project	1	E				
Curricula						
1. Curriculum type	1				E	
2. On schedule with curriculum	2	E, H				
3. Bilingual curriculum	1			G		

Source: Nicaragua: MECD (2003); El Salvador MINED (2002) and Mella (2002); Honduras: UMCE (2003) and Marshall (2003c); Guatemala: The World Bank (2004a) and Marshall (2003b); UNESCO/LLECE (1998, 2000).

All the countries of the region implemented far-reaching education reforms in the 1990s, generally coinciding with the return to peace and democracy. Curricular and pedagogical reform is one of the main thrusts of these reforms, along with decentralization to school- and community-based management, increases in the Ministry of Education budget, and the creation of national assessment systems.

Box 7.1 in Annex VII presents a review of curricular and pedagogical reform measures in all countries. Overall, except in El Salvador, the curricular reforms focused on primary schools, were based on constructivism, and were implemented flexibly and gradually (going through different phases of elaboration, validation and generalization). A more flexible focus also made it easier to incorporate multicultural elements closer to local

realities. In all cases, these curricular reforms were accompanied by the creation of new textbooks and teaching guides. In some cases, these new teaching and learning materials were produced nationally in order to more closely reflect national curricula while in other cases they were imported from other countries. What follows is an attempt to provide an initial summary of evidence of the impact of these reforms, both of the new curricula per se and of the implementation of the curricula and teaching strategies in the classroom.

This section offers diagnostic information on the state of pedagogical practices and instructional time in Central America and how they impact student learning.

a) Active/Participative Teaching Strategies

On curricula per se, we have practically no assessments, with the exception of El Salvador (see Box 7.1 in Annex VII). We have, however, some evidence on the impact of the related introduction of active/participative teaching practices that can help determine if the introduction of constructivism in the curricula was a positive factor. There is some evidence across the studies that we have reviewed that more active/participative pedagogical practices have a positive impact on educational achievement as measured by test scores (Table 2.9). In particular, one of the two studies on Guatemala shows that a higher teacher-student interaction, typical of more participative techniques, is positively associated with educational achievement and the Honduran study reports a positive impact of participatory techniques on learning outcomes. The evidence from El Salvador is less clear-cut with a surprisingly positive impact found for traditional techniques. This evidence conflicts, however, with qualitative evidence collected on 24 urban and rural schools which shows that best performing schools tend to apply participative practices.⁹⁰ Additionally, the impact of active practices may be stronger for particular sub-groups of students, such as students with particular learning difficulties or over-age students. This would not be captured by the studies reviewed here.⁹¹ There has been some evidence along these lines for El Salvador (see Box 7.1). A recent study on Honduras also suggests that traditional teaching methods may exacerbate repetition for repeating students.⁹² Finally, the much more extensive literature on Latin America reveals that there is some evidence of a positive impact of active strategies on learning (Annex II.1). If this is the case, the move towards constructivism is a positive trend in Central America.

Weak execution of the constructivist curriculum. However, implementation of constructivist techniques has been weak at best. Box 7.1 in Annex VII reveals that in most countries classroom practices did not change substantially following the pedagogical reform. There are several possible reasons for this, none of which has been examined rigorously across countries. Among the most commonly mentioned reasons are: (a) the lack of teacher expertise in participatory pedagogies; (b) the lack of textbooks available on a wide basis; (c) large class sizes; and (d) teacher opposition to the reforms. The lack of teacher expertise in the application of active pedagogies was already recognized as a weakness of in-service training above when it was mentioned that still

⁹⁰ See Kraft (2003).

⁹¹ See Schiefelbein (2004) for an argument along these lines.

⁹² See Marshall, J (2002): "Grade repetition in Honduran primary schools" – *mimeo* (Stanford University).

too little effort is put on changing/updating classroom practices. This is confirmed here. Applying a new curriculum requires substantial training and support to enable teachers to effectively change their methods. The magnitude of the effort needed was probably under-estimated in the Central America countries under analysis. Class size, at least within a certain reasonable range, has not been consistently related to educational achievement, but active and participative teaching methods particularly may be easier or more effectively implemented in small to medium size classes. Finally, on teacher opposition, it appears that in many cases teachers have not been sufficiently consulted on the reform process.⁹³

b) Instructional Time and Class Hours

Another major weakness in the execution of the curriculum and quality of education in Central America is the relatively low number of actual teaching hours. Instructional time (also related to coverage of the curriculum, as measured in Table 2.9) is frequently found to be positively related to student achievement and pass rates, including in two recent studies of Honduras⁹⁴ and Guatemala.⁹⁵

All countries in this report have schooling calendars of 180-200 days and a school week of 25-30 class hours in primary. This results in roughly 900-1,200 class hours a year, similar to the rest of Latin American.⁹⁶ However, there is a widespread perception in Central America that actual instructional time is much lower.

Teacher and student absences and school closings considerably reduce the effective class time of students. Evidence at this point, however, is largely anecdotal. It is notoriously difficult to assess effective class hours due to information constraints on teachers' absences and the magnitude of teaching hours. The ministries of education do not usually collect this information, which is constrained by the absence of systematic reporting of attendance and hours at the school level. In this vacuum, we made an attempt to assess effective class hours in the Central American countries under analysis⁹⁷ by: (a) assessing average weekly teaching hours (using school-based observations on teaching hours generated on school samples of different size - often small, unfortunately); (b) assessing the effective number of weeks of instruction, using information from a similar source on teachers' absences and, when available, school closings⁹⁸; and (c) obtaining the effective yearly class hours by multiplying the effective number of weeks by the teaching time.

⁹³ This has been the case in Guatemala where teachers were consulted at the beginning of the reform but not during the reform process itself and in Nicaragua where teachers have not been part of the reform design and teachers' unions have been generally kept aside from the reform. The experience was different in El Salvador where teachers were consulted since the inception of the reform and have taken part in the whole process mostly through national consultations. Teacher inclusion and national consensus may also explain why El Salvador could pass the reforms on teacher selection and remuneration discussed earlier.

⁹⁴ See Di Gropello and Marshall (2004).

⁹⁵ See Marshall (2003a).

⁹⁶ 900-1,200 hrs/yr is significantly less than the averages for Europe or Southeast Asia (1,200-1,750 hrs/yr) as cited in PREAL (2002).

⁹⁷ Although no information could be gathered on Nicaragua.

⁹⁸ Or, in the case of Guatemala, directly on the effective school year.

This methodology is a very simplified one⁹⁹, but provides us with some insights that are better than the anecdotal evidence.

Low instructional time. Table 2.10 reveals that in all countries there would be between 500 and 800 effective class hours at most, which represent between 58 and 80 percent of the notional class time (see Figure 2.4). It is obvious that even 700 class hours per year compare very unfavorably with the more than 1,200 notional class hours of Europe or other countries and constitute a major barrier to educational achievement in Central

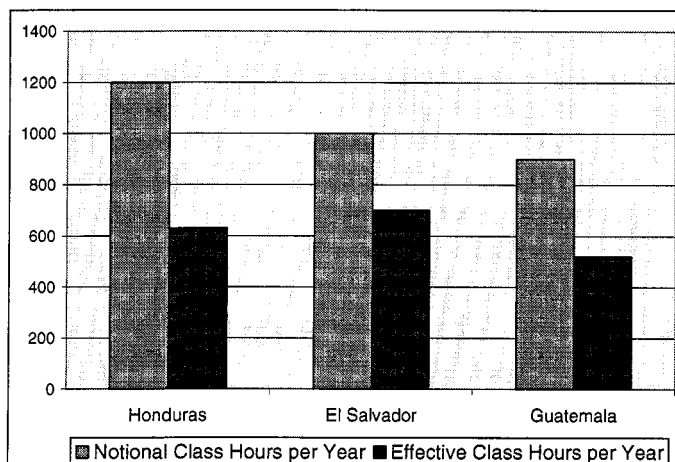
Table 2.10: Effective class hours in Central American Countries			
	Honduras	El Salvador	Guatemala
Weekly Teaching Hours (a)	21	21	20
Weekly Class Hours (b)	21	21	20
Normal Weeks per Year	42	42	36
Estimated Teacher's weekly absences (c)	4	3.5	na
School closings due to non-teacher absence reasons (d)	3	na	na
Effective number of weeks (e)	35	38.5	26
Effective number of class hours per year (f)	735	808	520
Effective number of class days per year (g)	122	161	104

(a) Honduras: Di Gropello and Marshall (2004); Salvador: Sawada and Ragatz (2004); Guatemala: on the basis of Anderson (2004); (b) Assumes one teacher teaches all subjects and, if there is more than one shift, one teacher does only one shift; (c) Honduras: di Gropello and Marshall (2004) report about 16.4 days for rural areas, while the 2000 school census reports an average of 3.4 weeks lost by teachers. Since teachers' absences are bound to be under-estimated in Honduras, 4 weeks are considered here. El Salvador: Sawada and Ragatz (2004); (d) Honduras: see Di Gropello and Marshall (2004); (e) Guatemala: Marshall (2003a) reports a school year of 111 days for a sample of rural schools; Anderson (2004) reports a school year of about 133 days for a sample of schools. We worked on the basis of a 130 days school year; (f) El Salvador: falls in the 660-1,000 hours range provided in Kraft (2004); (g) Honduras: assuming 6 hours per day; El Salvador, Guatemala, Nicaragua: assuming 5 hours a day.

America. Honduras and Guatemala seem to have the largest gap between notional and effective class hours, while El Salvador has the smallest gap.

⁹⁹ For instance, it makes the assumption that teaching hours and class hours are similar, which will be valid only if one teacher teaches all subjects and, if there is more than one shift, one teacher only teaches one shift. Additionally, the estimated effective class hours per year will generally be an under-estimation because of the lack of information on unexcused teachers' absences in Honduras and El Salvador and, for El Salvador, on schools' closings (beyond normal holiday closings) due to reasons others than teachers' absences. On the other hand, considering all teachers' absences may somewhat under-estimate class hours if a substitute or replacement teacher is used. Finally, the figures that we obtain provide an estimate of effective class hours, but not of time-on-task, which is expected to be even lower if we consider that a class hour includes a 15-minute break and that only a portion of the remaining 45 minutes is spent on the task itself (time frequently is spent on discipline, grading, organizing, setting up, etc).

Figure 2.4: Notional and effective class hours per year



instructional and physical resources, and stakeholder responsibilities. These factors are only cursorily addressed in this chapter as both topics have their own respective chapter later in this volume. Education spending is addressed in Chapter IV while school management is addressed in Chapter V.

a) Education Spending

Education spending has not been tested in the Central American education production function studies reviewed for this chapter. Education spending is, however, significantly and positively related to student achievement in about half the cases cited in the meta-analyses of education in Latin America and developing countries generally. It stands to reason that the impact of educational spending depends on the effectiveness of resources allocation. There is evidence that school supplies, textbooks and school infrastructure are beneficial to student learning in Central America specifically, and developing countries generally. Other factors related to education quality, such as teacher education discussed earlier, also have spending implications. Since education spending is related to both quality and coverage outcomes and is currently a key issue for all Central American countries, we will deal with it in a separate chapter.

b) School Management

How schools are managed also affects education quality. Several of the Central American education production function studies examine school factors relating to school management.

There is little consistent evidence on the impact of directors' characteristics on student learning, although director leadership appears, for instance, to be positively related to educational achievement in El Salvador, confirming the general recognition that directors' leadership is a key factor for effective school administration and classroom environment. Here again, the inconsistent findings are likely to be due to limited data, poor quality data, and unobservable factors. Surveys should explicitly measure more

D. EDUCATION SPENDING AND SCHOOL MANAGEMENT

A third category of factors, increasingly taken into account in educational achievement studies, relates to broader variables such as education spending and school management, which are expected to have an impact on educational achievement by impacting the behavior and characteristics of teachers, the school learning environment,

principal characteristics and behaviors in order to increase understanding of the impact of, say, director selection and training, director commitment/leadership, and other factors.

More evidence is available on school autonomy and community participation and, interestingly, these variables, in many cases, have a significant and positive association with student achievement. In particular, school autonomy is positively related to educational achievement in both El Salvador and Honduras (which may also contribute to explain why private schools perform better in El Salvador), while it has a more ambiguous -positive or negative- impact in Guatemala. Within the current decentralization strategies adopted in Central America, it is particularly important to be able to assess the impact of autonomy and community participation. To address this issue special studies have been undertaken comparing community-based schools with traditional ones that we will explicitly review in Chapter V. A separate chapter on school-based management is required not only because of the increasing relevance of decentralization in the countries under analysis, but also because decentralization is, like education spending, a crosscutting area which affects quality, efficiency and coverage.

III. Policy Implications

The previous section detailed many of the constraints to learning in Central America. This next section takes each of these areas and proposes policy options to overcome these barriers. We begin with an analysis of the qualities of high-performing low-income schools and what differentiates them from less effective low-income schools. This analysis is offered in order to begin to look at what policies, characteristics, and practices being used currently in Central America may be valuable to consider. The following sub-sections then look at specific policy options to address the learning constraints identified in the previous section: (a) student background characteristics; (b) teacher quality; and (c) pedagogical practices. We do not look at policy options concerning education financing or school management because each of these sections is dealt with in subsequent chapters of this report.

A. LEARNING DETERMINANTS OF EFFECTIVE SCHOOLS

In Central America, where poverty continues to be a severe problem affecting large segments of the population, insuring high quality education for the poor must be a top priority. Unfortunately, to date, schools serving the poor tend to be of significantly lower quality than those serving more privileged social sectors, and student achievement continues to parallel gaps between social class and racial divisions in ways that underscore continued urgent inequalities. The goal of the following analysis is to identify the characteristics of high-performing low-income schools in Honduras and Nicaragua that differentiate these schools from average or low-performing low-income schools (no equivalent databases were available for El Salvador or Guatemala).

a) Methodology and Data

Annex VIII contains a description of the data that were used and the methodology applied to undertake this effective school analysis. Here, we just point out that groups of effective

and “control” schools were identified in each of the countries with effective schools being defined as schools that scored substantially higher than the mean on multiple exams and significantly below the mean in terms of socioeconomic status. The tables below report t-tests on sample means of control and effective schools.

b) Findings and Discussion

Before discussing specific results from the analysis, a couple of general findings are worth mentioning. First, the cut off boundaries to identify effective schools in Nicaragua was much less rigorous than that of Honduras. This was necessary because there simply were very few high-performing, low-income schools in the Nicaraguan dataset. This may be partially due to sample size, but it is also likely that socioeconomic status (SES) and test scores are more tightly linked in Nicaragua than in Honduras; in other words, educational outcomes are more inequitable in Nicaragua. Evidence of this sharp inequality in Nicaragua was also highlighted in Chapter I.

Second, many more schools met the criteria as effective in math than in Spanish in both countries. This phenomenon has been discussed in other literature and has been attributed to the fact that children learn more literacy skills than math skills at home. This means that children enter school on more equal footing for math than for language. The occurrence of more effective schools in math than in Spanish in both Honduras and Nicaragua demonstrates that the inequalities in children's backgrounds are not being sufficiently compensated for in schools.

i) Teachers and principals

Skilled teachers matter. There are important differences between the teachers and principals of effective and control schools in Honduras and Nicaragua (Table 2.11), but these differences are not entirely consistent across country. In Honduras, the education level of teachers and principals is significantly higher in effective schools but these same teachers and principals have fewer years of experience (although this variable is not significant). In Nicaragua the situation is reversed. Although limited to the sixth grade, teachers and principals in effective schools have significantly lower education levels but more years of experience. This evidence suggests that the policy of hiring teachers with low qualifications in rural areas is problematic in Honduras, where teachers with university degrees obtain better results in low-income schools. In contrast, in Nicaragua, hiring teachers with limited educational background may be all right (at least for grade 6), so long as the teachers hired have a lot of professional experience. In both cases, these findings illustrate the need for policies that attract and retain competent teachers in poor areas.

Table 2.11: Teacher and Principal Characteristics in Effective and Control Group Schools						
	Honduras		Nicaragua 3		Nicaragua 6	
	Effective	Control	Effective	Control	Effective	Control
Teacher Education						
Level			2.18	2.10	1.89	2.35***
Only Normal	0.71	0.84**				
University degree in pedagogy	0.12	0.05**				
University degree	0.12	.06*				
Teacher Experience						
Teaching	5.98	7.40	6.36	7.17	16.55	11.03***
Teaching Grade			3.55	3.28	13.71	4.78***
Principal Education						
Level			2.24	2.47	2.00	2.41**
University degree	0.13	.05**				
Principal Experience	6.40	7.28	5.28	4.39	7.55	7.9

Source: Nicaragua: MINED Database; Honduras: UMCE Database. Asterisks refer to significance (two-tail) for t-test comparisons of independent sample means assuming equal variances. *** Significant at 0.01 level; ** Significant at 0.05 level; * Significant at 0.10 level.

ii) Pedagogy

Positive impact of active methodologies. There are significant differences in teaching methods and practices reported in effective and control group schools, particularly in the sixth grade in Nicaragua (see Table 2.12). Effective schools appear to use traditional pedagogical practices significantly less often than control group schools. This would indicate that more active methodologies are employed in successful low-income schools in Nicaragua (confirming the importance of this type of teaching). Also in Nicaragua, effective schools were much more likely to use flexible promotion than control schools in both the third and the sixth grades. Flexible promotion allows students to re-enter or pass between grades levels even if they have been absent for a significant portion of the school year. This is an interesting finding since flexible promotion policies are also particularly useful for ensuring completion. This finding suggests that automatic promotion does not necessarily jeopardize the quality of learning.

In Honduras no classroom practices appear significantly different in effective and control schools, but teachers in effective schools give more homework, on average, than teachers in control schools. Part of the reason why there are more pedagogical differences in Nicaragua than in Honduras is that Nicaragua has spent more than 10 years focusing on changing classroom practice to a more dynamic and interactive constructivist model of learning. It is probable that Nicaraguan teachers have been exposed to more training and skill development in using a broader range of teaching methods although only a minority of teachers seems to have applied these practices.

Table 2.12: Pedagogical Practices in Effective and Control Group Schools						
	Honduras		Nicaragua 3		Nicaragua 6	
	Effective	Control	Effective	Control	Effective	Control
Traditional pedagogy						
Dictation	0.1	0.06	0.71	0.81	0.55	0.75**
Copy into notebook			0.96	0.94	0.92	0.97*
Teacher reads from text			0.92	0.92	0.92	0.96*
Homework Frequency	3.51	3.33*				
Flexible Promotion			0.5	0.03***	0.43	0.10*

Source: Nicaragua: MINED Database; Honduras: UMCE Database. Notes: Asterisks refer to significance (two-tail) for t-test comparisons of independent sample means assuming equal variances. *** Significant at 0.01 level; ** Significant at 0.05 level; * Significant at 0.10 level.

iii) School management practices

Teachers and parents are more engaged and supported in effective schools. Some very interesting differences emerge looking at school management practices in effective and control group schools (see Table 2.13). Namely both teachers and parents appear to be more engaged and supported in effective schools.

Table 2.13: School Management Practices in Effective and Control Group Schools						
	Honduras		Nicaragua 3		Nicaragua 6	
	Effective	Control	Effective	Control	Effective	Control
Teachers' role in management of school						
Teacher responsibility index			0.57	-0.33**	0.83	0.17
Index for teacher support	0.19	-0.08*				
Parental participation						
Index of parental participation in school			1.46	0.72*	0.64	0.99
Parents collaborate with education	2	1.79*				
Percent of time principal spends teaching	48.07	41.57*				
School-based management						
Autonomous School			0.6	0.42	0.55	0.49
School autonomy index	0.09	0.05				

Source: Nicaragua: MINED Database; Honduras: UMCE Database. Notes: Asterisks refer to significance (two-tail) for t-test comparisons of independent sample means assuming equal variances. *** Significant at 0.01 level; ** Significant at 0.05 level; * Significant at 0.10 level.

In Nicaragua teachers have a wider range of responsibilities in school management in both third and sixth grade, although the difference is only significant at the third grade level. There was no equivalent data for Honduras, but in that country teachers reported receiving more support and appreciation for their work.

Similarly, there is indication that parents may be more involved in school functioning and activities as well as their own children's learning in both countries. In Nicaragua, parents score significantly higher on a composite index measuring parental involvement in schools in the third grade. This relationship did not hold for the sixth grade however. In Honduras, teachers reported that parents collaborate more with the education of their children. Both of these measures indicate that there may be a closer relationship between families and schools/classrooms in high-performing low-income schools in Honduras and Nicaragua. If accurate, this is a promising finding for community-based school management (discussed in Chapter V).

Finally, in Honduras, effective schools principals spend more time, on average, teaching. This difference suggests that principals in those schools may be more involved in instructional or pedagogical leadership rather than having more administrative functions. Unfortunately, we cannot test community-based schooling (PROHECO) directly in Honduras because the Honduran sample consisted of too few PROHECO schools. We will see in Chapter V (where we use a specially generated database) that PROHECO does, indeed, have a positive impact on many schools (although PROHECO schools are weak on the teacher involvement side). We can only test a general measure of school autonomy, which, although higher in effective schools, does not reach significance. The results for the autonomous schools in Nicaragua¹⁰⁰ indicate that, though not significant, effective schools are more likely to be autonomous than their control group counterparts. Chapter V will show that the impact of the Nicaraguan decentralization reform is somewhat constrained by low parent and teacher involvement. The model may, however, hold promise for rural areas.

We should add that school type such as single teacher schools (i.e. multigrade) in Honduras and multigrade schools in Nicaragua were also tested and, although effective schools were more likely to be single-teacher and multigrade, the difference was not significant. We will see that, when focusing on rural areas, the benefits of multigrade teaching in certain countries emerge more clearly.

iv) Student repetition and absences

One final area of differences between effective and control group schools emerged from this analysis concerning the reported levels of repetition and absences of students in the two groups of schools.

Lower repetition and student absenteeism rates. In Honduras, students were significantly less likely to have repeated years of school in the effective schools and the

¹⁰⁰ Where the sample of schools in Nicaragua was designed to allow for stratification in terms of participation in the *Autonomía Escolar* reform.

average sum of years repeated by each child was significantly lower than in comparison schools. A similar trend, although not statistically significant, is true for the number of students repeating the current year in Nicaragua in both third and sixth grade. Not surprisingly, these results point to a relation between achievement and repetition: high-achieving schools also have lower repetition rates, confirming the importance of quality education for completion.

Students also appear to be absent less frequently in effective schools in both countries. In Nicaragua, both girls and boys were less likely to have been absent the week prior to the survey in effective schools for both third and sixth grade although the difference is only statistically significant for sixth grade girls. In Honduras, students were also reported to be absent significantly fewer days in the effective schools.

v) Conclusions and policy implications

Although there is a fair amount of variation among significant variables between grade levels and countries there are some clear and intuitively meaningful differences that emerge between high-performing and lower-performing low-income schools in Honduras and Nicaragua. These differences center around four areas. First, teacher and principal education and experience both appear important for effective learning, suggesting the need for a policy which brings and retains competent teachers to poor areas. Second, effective schools are less likely to use traditional passive teaching methods and give more homework to students, suggesting the need for promoting new pedagogical approaches. Third, substantive and supportive involvement of both teachers and parents in school management and a potentially instructional leadership role for principals are present in effective schools, pointing to a possible high potential for school-based management or other forms of community involvement. Fourth, students in effective schools are less likely to repeat grades and are in school more. The results on absenteeism suggest that policies to limit students' absences, for instance by improving teacher effort, offering nutritious meals, or making schools more accessible, could improve achievement in low income schools. These differences emerged between effective and control group schools that had very similar background characteristics and therefore may represent avenues by which to improve learning in low-income schools.

Not surprisingly, the areas in which effective schools differ from their less-effective counterparts mirror the main factors found to be determinants of and constraints to learning in Central America. These include student background characteristics, seen in the effective schools analysis in the findings on student absenteeism and repetition; teacher and teaching quality, seen in the effective schools analysis in terms of teacher education and experience; pedagogical practices, seen in the above analysis in the form of interactive teaching methods and more homework; and finally school management, seen in the analysis as greater parent, teacher, and community involvement and empowerment. The next sections suggest specific policy recommendations for the three first areas.

B. BACKGROUND CHARACTERISTICS POLICY IMPLICATIONS

We saw earlier that constraints to learning that relate to student background characteristics almost exclusively disfavor marginalized segments of the population, in particular, poor, rural, and ethnic-minority students. Strategies for improving education for the poor are varied. This section outlines a variety of supply-side and demand-side policy options to remove or compensate for these barriers, including compensatory programs, cross-sectoral policies, conditional cash transfers, decreasing the private costs of schooling, and publicity campaigns.

a) Compensatory Education Programs for Rural, Indigenous and Over-age Students in Central America

Central America currently has multiple compensatory programs in place that support equality of educational opportunity for rural students, students whose first language is not Spanish, and over-age students. These groups of children have suffered long-lasting educational and socio-economic disadvantages (see Chapter I). Their educational needs are both great and distinct from the educational needs of the 'typical' student generally considered in educational planning. As countries increasingly recognize the enormous barriers to equality of educational opportunity and the severe disadvantages these groups of students face, there are a growing number of programs and policies that attempt to remedy these weaknesses. Some of these educational adaptations and compensatory programs have achieved considerable success and have become models for other countries, although there are still challenges ahead in ensuring equality of educational outcomes.

We do not hope to report on all of the compensatory policies and programs for the region but rather to focus on three main areas: 1) multigrade schooling; 2) bilingual education; and 3) specialized learning programs for over-age youth. For each area we will describe some of the region's programs, report some evidence of their impact (if any exists), and present a few summary reflections.

i) Multigrade schooling for rural populations¹⁰¹

Providing quality and equitable education in rural areas is a challenge faced by all the Central American countries. Large portions of the national populations continue to live in remote areas. These rural populations are, on average, much poorer than their urban

¹⁰¹ Multigrade schools are not the only option for expanding educational access in remote areas. More and more frequently countries are using distance education techniques, through radio, television, and computers, to offer or expand educational opportunities where they previously did not exist, to lower the unit cost of providing education in remote areas, and to improve the quality and content of education offered in these areas. Distance education is not typically used for primary education in these countries but is more frequently used to provide secondary, technical, or adult education, as we will see in Chapter III. Another policy aimed to improve education delivery in rural areas is flexibility and adaptations to the academic calendar. In Nicaragua, for example, policies are in place to allow rural schools to run on academic calendars which mirror agricultural cycles in the surrounding area, enabling students who help their families during harvests or planting not to miss school due to this work.

counterparts and have fewer available material and human resources. In addition, populations are widely spread making access to school much more difficult and costly. Teacher shortages in rural areas are also common. As a response to these serious challenges many countries are using a multigrade model of education in which one teacher simultaneously leads class for more than one grade level. This cuts down on the number of teachers needed to provide more complete schools. But because of this structure, and the rural context of these schools, multigrade schools have unique needs, in particular teachers must be able to successfully facilitate the learning of students of different ages and skill levels, materials must be adapted for students who receive less frontal teaching, and schedules and curricula must be appropriate for the rural multigrade setting. At their best, multigrade schools have been shown to cost-effectively address the unique context of remote rural areas and provide rural children with not only access to all primary education grade levels but also ensure relevance to the local setting, and successful student outcomes.¹⁰² At their worst, however, multigrade schools can perpetuate and exacerbate the inferior education provided to rural communities.¹⁰³

Program descriptions. Although all four countries have introduced multigrade schooling programs, evidence on impact is limited and of varying quality. Of all the programs, the Guatemalan New Unitary School (NEU) project has been the subject of the most academic study, while several of the other programs have received limited evaluation by education officials, donors, and external evaluators. Box 2.2 includes synopses on the range of multigrade.

¹⁰² In UNESCO's Latin American Laboratory study of education quality in eleven Latin American countries, only Colombia had higher student achievement in the rural sector than in the urban sector. This is largely thought to be due to the *Escuela Nueva* schools, a rural multigrade education program begun in the 1970s that is the inspiration behind many of the Central American multigrade programs (PREAL, 2003a).

¹⁰³ Benveniste and McEwan (2000).

Box 2.2: Multigrade Programs in Central America

Guatemala - New Unitary Schools (NEU): The objective of the NEU Project, which began in 1989, is to address the problems of low primary completion, limited learning, and high absenteeism prevalent in rural schools in Guatemala. The NEU project is an integrated approach to rural multigrade education, combining teacher professional development, creation of educational materials, resources and curriculum, active pedagogy, and involvement of parents and communities. The NEU project has served as a model for multigrade schools in other Central American countries including the BASE Project in Nicaragua.¹⁰⁴

Nicaragua - Project BASE Multigrade Model Schools: The BASE Project has as its objective improving the quality of basic education in Nicaragua in both rural and urban areas by transforming teaching methods from traditional practices to active, constructivist methods. One of the focuses of the project has been to expand and improve multigrade schools in remote areas. BASE has established model multigrade schools to pilot their reforms, and to serve as centers to support other schools as the reforms expand.¹⁰⁵

El Salvador - Alternative Classrooms Project: The Alternative Classrooms Project is a recent reform in El Salvador which supports multigrade community-managed primary schools in remote areas.¹⁰⁶ The primary objective of the reform is to reduce age-by-grade distortion and high repetition and drop-out rates in rural areas. As with NEU, this program is multifaceted, combining specialized curricular adaptations, teaching material, and teacher training specific for the multigrade setting. These alternative classrooms are designed to employ active teaching methodology and learning materials for each grade level, allowing teachers to successfully work with two or more grades simultaneously.¹⁰⁷

Costa Rica Single-Teacher Schools: Begun in the 1960s, single-teacher schools were created in Costa Rica to provide educational access to rural children who previously suffered from a lack of school availability. Teachers attend either three or six grades (1st and/or 2nd basic education cycles).¹⁰⁸ Until quite recently little specialized attention was paid to education in these schools. But in 2002 several reforms were launched to increase the quality and equity of single-teacher schools including expanding instructional time by getting rid of the double-shift system, emphasizing appropriate pedagogy for multigrade teaching, improving infrastructure and supplies, and targeting drop-out reduction through scholarships and school-feeding.

Honduras Multigrade Schools: Honduras remains a largely rural country where, as in Costa Rica, roughly half of all primary schools are rural single-teacher multigrade schools. Few reforms have focused on improving multigrade schools in Honduras although some work has been done to create curricula appropriate for the multigrade setting. Natural science texts have been created specifically for multigrade schools and regular national texts have been designed also with multigrade and rural schools in mind.¹⁰⁹

Improvements in test scores. There is evidence that when successful, students in multigrade schools can outperform traditional rural students and even urban students. The NEU program evaluation found that NEU schools students have better reading skills than traditional rural school students.¹¹⁰ Similarly, indicators of student achievement in Nicaragua's model multigrade schools are promising. Test scores were higher for math but lower or similar for Spanish than in regular model schools in 2002. Girls, however,

¹⁰⁴ PREAL (2003a).

¹⁰⁵ AED and Juárez and Associates (2003).

¹⁰⁶ The Alternative Classrooms Project is implemented in EDUCO schools, community managed rural schools in El Salvador. They will be discussed more extensively in Chapter V.

¹⁰⁷ PREAL (2002).

¹⁰⁸ MEP (2002); MEP (2001).

¹⁰⁹ MINEDUC, OEI, & World Bank, no year.

¹¹⁰ Kraft (1998).

scored lower in both Spanish and math in multigrade schools indicating that more attention may need to be directed at gender inequities in rural areas (see Table 2.14). Finally, in Honduras, when examining only rural schools, single-teacher schools score significantly higher in math and science than multiple-teacher schools (there is no significant difference in Spanish test scores).¹¹¹

Table 2.14: Nicaragua - Test Scores in Multigrade and Traditional Model Schools				
School Type	Subject	Gender	Grade 3	Grade 4
			2002	2002
Model Regular	Spanish	Male	60	81
		Female	66	82
		Total	63	82
	Math	Male	48	64
		Female	43	62
		Total	45	63
Model Multigrade	Spanish	Male	60	84
		Female	58	80
		Total	59	82
	Math	Male	52	73
		Female	41	66
		Total	47	69

Source: AED and Juárez and Associates, 2003

Greater student retention. Measures of student retention and completion also appear to be improving in some of the programs. In Guatemala, fewer NEU school students repeat and more students get to fifth grade than in traditional rural schools. Still, 95 percent of monolingual Mayan students continue to drop out of NEU schools before completing primary education (see Table 2.15). While not disaggregated by multigrade or traditional school type, student completion in model schools in Nicaragua is significantly higher than national averages.¹¹² The alternative classrooms program in El Salvador also appears to be reducing the proportion of over-age students in rural schools. Between 1992 and 2000 the progress in increasing the proportion of age-appropriate enrollment was three times faster in rural schools than in urban ones.

¹¹¹ UMCE (2003a).

¹¹² AED and Juárez and Associates (2003).

Table 2.15: Guatemala - Retention and Progression Rates for NEU and Traditional School Students			
School Type	Advance without repeating to fourth grade	Advance to fifth grade	Retention Rate for Monolingual Mayan Students
NEU Schools	30%	54%	5%
Control Group	10%	25%	5%

Source: Kraft, 1998

Limitations to the multigrade model. The experiences of multigrade in Costa Rica and Honduras highlight the existence of problems in multigrade schools. Single-teacher schools in Costa Rica have inferior pass, completion, repetition and dropout rates compared with traditional rural schools. They typically offer less instructional time, lack specialized multigrade teacher training or preparation, have few educational resources, and poor infrastructure.¹¹³ The Honduran Ministry of Education further reports that these schools often suffer from inadequate infrastructure, weak management, and constrained budgets.

Policy implications for multigrade schools

From the experiences that we have reviewed, it would seem that when implemented purely as a cost saving or access-expanding measure, multigrade schools are likely to fail. These schools necessitate an entirely different education model than the traditional frontal model still dominant in Central America. Teachers in multigrade schools need sufficient high-quality educational opportunities to be successful and schools need to be equipped with appropriate and relevant textbooks and other educational materials. It appears that Guatemala, Nicaragua and El Salvador have been more successful in providing multigrade schools with significant support aimed at making them successfully different from traditional schools.

But significant challenges remain even in countries with broad support for multigrade schools. In Guatemala, monolingual Mayan students are still extremely disadvantaged in terms of educational completion. In all countries, as is clear from Chapter I, students in rural areas continue to be more likely to be over-age and have lower average educational attainment and academic achievement than urban students. Multigrade schools are not managing to fully compensate rural children for the geographic, economic, and social barriers they face. Providing continuous pedagogical support and educational resources will help strengthen the impact of these models. Alternatively, cost-efficient options for education delivery such as organizing rural schools in networks, in particular if associated with elements of community-based management, may also help organize education delivery in rural areas. This option may be particularly promising if including all nine grades of basic education.

¹¹³ MEP (2002); MEP (2001).

ii) Bilingual and multicultural education for ethnic and linguistic minority populations

The Central American countries have diverse ethno-linguistic populations, primarily indigenous Native American groups (largely of Mayan affiliation) and Afro-Caribbean populations along the Atlantic coast. The very distinct histories of each country, however, have resulted in very different population compositions among the countries. As indicated in Chapter I, roughly half of the nation's population in Guatemala is indigenous and one quarter of the nation's population does not speak Spanish at home. In Nicaragua, nearly 1 in 10 people is Afro-Caribbean, an ethnic group whose primary language is English. Other countries, such as El Salvador, have much more ethno-linguistically homogenous populations. In all of the Central American countries, however, ethnic minorities, especially indigenous populations, face severe economic, political, and social disadvantages compared with the majority mestizo populations. Increasing the human capital of indigenous people has been shown to decrease these inequalities.¹¹⁴ At the same time, increased education levels have been shown to have a negative association with indigenous language proficiency.¹¹⁵ Supporting cultural and linguistic diversity while combating the severe inequalities indigenous and other ethnic minorities face is a critical challenge in most Central American countries.

Only recently have the Central American governments begun state-initiated and supported bilingual education programs. All countries, except El Salvador, have by now established these types of programs. Here we describe the Guatemalan program, as this is by far the most advanced of the bilingual programs in the region and the only one that has been evaluated. Annex IX includes a box describing the programs implemented in Nicaragua and Honduras.

Guatemala - Bilingual Intercultural Education (DIGEBI): description and impact

Despite the fact that the Ministry of Education only began bilingual education in Guatemala in 1980, they have made significant progress in the area and are frequently regarded as a model for other countries developing bilingual intercultural education programs.¹¹⁶

Due to its large indigenous population, Guatemala, of all the Central American countries, faces the most pressing need for quality bilingual education. Complicating the matter, however, is the fact that Guatemala's indigenous population is not monolingual. There are between 24-52 indigenous languages used in Guatemala, although 75 percent of the total indigenous population speaks one of four main Mayan languages. These different groups not only speak different languages but also have unique education needs as evidenced by their distinct dropout, repetition, and pass rates.¹¹⁷ In addition, the diverse Guatemalan population means that there is a need for all ethnic groups to learn respect and understanding through intercultural education.

¹¹⁴ Patrinos and Velez (1996).

¹¹⁵ The World Bank (2002).

¹¹⁶ Dutcher (1997); Cummings and Tamayo (1994).

¹¹⁷ Cummings and Tamayo (1994); Carvajal, Morris and Davenport (1993).

Improvement and expansion of bilingual intercultural education has a prominent place in the Guatemalan Peace Accords and the Indigenous Peoples' Accord.¹¹⁸ Multiculturalism and interculturalism are foundations of Guatemala's long-term national education strategy. This strategy calls for deepening knowledge about national ethnic groups, providing bilingual and intercultural education at all education levels, strengthening cultural understanding and respect, and insuring equitable educational access and participation to all Guatemalan populations.¹¹⁹ To implement this strategy, the 2000-2004 Education Plan divides the country into ethno-linguistic areas with decentralized authority to develop and implement culturally and linguistically relevant educational adaptations.¹²⁰

Substantial investment in bilingual intercultural education (EBI) in Guatemala has gone to the development of a national infrastructure to support the program. This infrastructure includes experts in linguistics, curriculum development, and educational planning as well as trained bilingual teachers and bilingual intercultural education materials.¹²¹ EBI schools now serve 18 percent of the indigenous Guatemalan population. Textbooks and supplementary materials have been created and produced in many languages. Guatemala has trained thousands of bilingual teachers, and offers diplomas and degrees for these teachers in applied linguistics, education administration, curriculum development, reading and writing, and special instruction for teaching bilingual first grade.¹²²

Positive effect on student achievement. Studies have shown that the EBI program in Guatemala has had positive effects on student achievement, parental attitudes, and school quality. Unfortunately most of these studies are fairly dated.

A 1986-1991 evaluation of student achievement on standardized exams showed that students in bilingual intercultural schools outperformed students in a control group on almost all exams (see Table 2.16). By grade three, when children have received four years of bilingual intercultural education, students in EBI schools scored significantly higher in math and social studies. In Spanish, there was no significant difference in scores. Another evaluation indicated that EBI students in schools that had fully implemented the program had even greater achievement over traditional schools.¹²³

¹¹⁸ Marques and Bannon (2003).

¹¹⁹ *Comisión Consultiva para la Reforma Educativa* (1999).

¹²⁰ MINEDUC (2000).

¹²¹ Dutcher (1997).

¹²² The World Bank (2004a); Vawda and Patrinos (1999); Cummings and Tamayo (1994).

¹²³ Chuta & Chuta (1987) as cited in Dutcher (1997).

Table 2.16: Test scores in EBI and Control Schools in Guatemala (1986-1991)				
Subject	Year	DIGEBI	Control	Significant
<i>Grade One</i>				
Mayan	1988	77	74	Yes
Spanish	1989	33	30	Yes
Spanish	1991	86	82	Yes
<i>Grade Three</i>				
Math	1986	34	30	Yes
Math	1987	37	36	No
Social Studies	1987	42	39	Yes
Spanish	1987	35	35	No

Source: USAID (1993) as cited in Dutcher (1997).

Early evaluations in the 1980s show that students in EBI schools had improved rates of attendance, repetition, promotion, drop-out, and test scores compared to a control group of Mayan children taught in Spanish.¹²⁴ Parents' attitudes toward school were also more favorable in bilingual schools.¹²⁵

Policy implications

Most Central American nations are just beginning to offer bilingual education. Serious challenges remain, as indicated by the persistent indigenous/non-indigenous gap in all countries (Chapter I). Most strikingly, access to these programs needs to be expanded. As stated earlier, even in Guatemala the vast majority of indigenous children are not in bilingual schools.^{126 127} Expansion may require a significant increase in financing for these programs, as implementation requires teacher preparation as well as curriculum and material development for new ethno-linguistic groups. It would also be timely to start evaluating the programs in Nicaragua and Honduras.

¹²⁴ Morris and Davenport (1993); and Scott and Chuta, n.d. as cited in Patrinos and Velez (1996).

¹²⁵ USAID (1993) as cited by Patrinos and Velez (1996).

¹²⁶ Silvestre, no year.

¹²⁷ A recent report from a Nicaraguan Atlantic Coast non-governmental organization criticizes Nicaragua's bilingual education program (see Annex II.5) for not serving more non-Spanish speaking communities. However, the smaller size of the indigenous population in that country probably makes relative access higher than in Guatemala contributing to the explanation of the minor indigenous/non-indigenous gap in that country.

iii) Alternative programs for over-age youth

As already discussed, over-age students are more likely to drop out, repeat, or fail and require specific targeted programs and policies addressed to their needs. Programs in the region for these populations include flexible (or automatic) promotion, accelerated education and alternative schedules.

Flexible promotion allows students to continue into subsequent grade levels irrespective of whether their achievement qualifies them to pass to the next grade. This not only directly lowers repetition rates but is also designed to decrease age-by-grade distortion, a factor that is highly associated with future school abandonment. Accelerated education permits students who are over-age or who for some other reason need to get through school quickly to condense their education into fewer years. This creates an incentive for students who might otherwise drop out or remain out of school to study and complete basic education. Finally, flexible schedules, such as night shifts, weekend classes, or alternative calendars also target students with special needs such as working students who cannot come to school during typical school hours/days. At the primary level these programs are, in many ways, a “second best” compared with interventions that aim at increasing educational attainment by improving quality of schooling, but they can help increase primary completion, particularly in the short term. At the secondary level, when the pressure for students to drop out is much stronger, alternative schedules are in fact often highly advisable. The following chapter on secondary education will discuss this further.

Unfortunately, there is practically no research/assessment on these compensatory programs for over-age students and therefore we just provide a summary description of a couple of interesting programs on accelerated education and automatic or flexible promotion which have been developed in El Salvador and Nicaragua.

Program descriptions

El Salvador: Pilot Program in Accelerated Education and Flexible Promotion. This recent innovation speeds up grade transition for older, more mature or motivated students. It employs a special curriculum, flexible promotion, and trains and provides materials for teachers in specialized teaching methods. This program is still small. In 2000, 47 sections of accelerated education were serving 1410 students in the second through fourth grades.¹²⁸ Student learning manuals have been developed and distributed to program participants. These manuals promote cooperative learning, problem solving, creative and critical thinking, and a broad range of activities linked to curricula.¹²⁹

El Salvador also uses flexible promotion in its EDUCO (community run) schools. Flexible promotion allows students to reenter school without having to repeat or drop back a grade level if they have been absent for any length of time. Flexible promotion is dependent on curricula and teaching methods that allow the student to continue where he

¹²⁸ PREAL (2002).

¹²⁹ Kraft (2004).

or she left off. This method is particularly important for decreasing repetition and preventing dropout among working students, rural students, or other groups of students who are more likely to miss large segments of the school year.¹³⁰

Nicaragua: Automatic Promotion and Overage Primary. In 1998 Nicaragua began a policy of automatic promotion from the first to the second grade. This was extended to the second to third grade transition the following year. The Ministry of Education has also adopted a policy of placing the best teachers into the earliest grades to attempt to curb the early roots of student failure, repetition, and lack of learning. Oddly, repetition in the first two grades continues at rates similar to those of 1997, indicating that the policy has not yet been implemented as planned (see Chapter I and MECD website).

Over-age Primary in Nicaragua allows children and teens age 9-15 to complete primary education in three years instead of six. In many cases these classes are offered in regular primary schools but during an evening/night shift so that normal-aged students are not present and so that students can work during the day (MECD website).

b) Conditional Cash Transfers

Conditional cash transfer programs, such as those in Mexico and Brazil, have proven effective at increasing attendance in school, educational attainment, and boosting enrollment.¹³¹ These demand-side programs give money to families - usually targeted to poor families only - on certain conditions such as a target attendance rate in school or a minimum number of doctors' visits per child per year. They address both direct and opportunity costs of schooling. Conditional cash transfer programs have limited applicability for the primary level in Central America because they could easily be prohibitively expensive. They may be more appropriate for the secondary level and are discussed further in the chapter on secondary. However, CCT programs have been applied in Honduras and Nicaragua, with varying levels of success (Box 2.3). In general, they had a positive impact on school attendance and early drop-out in both countries, while their effect on enrollment was more ambiguous. There is evidence that the CCT program of Honduras was poorly designed and implemented, while the program in Nicaragua was better developed. Poor quality of the supply can also constrain these programs, requiring coordination with supply-side interventions. Conditional cash transfer programs are not designed to generate quality improvements in schools and there is no evidence that they do so.

¹³⁰ Kraft (2004).

¹³¹ See, for example Skoufias and Parker (2001) on Progresá (Oportunidades) in Mexico, and Bourguignon et al (2002) on Bolsa Escola (Bolsa Família) in Brazil.

Box 2.3: Conditional Cash Transfers Can Help Increase Human Capital

Nicaragua's **Social Protection Network (RPS)** gives poor families cash transfers in exchange for attending health workshops, bringing their young children to regular healthcare appointments, and keeping their 7-13 year-old children enrolled in and attending school. In its target population, RPS has resulted in:

- 18% increase in primary school enrollment;
- 23% increase in school attendance;
- 7% increase in progression through grades;
- 5% decrease in child labor (age 7-13);
- Improved child health and nutrition;
- Greater improvements for the extreme poor and families in areas going through economic downturn.

(Source: Maluccio, 2004)

In Honduras, the **PRAF** (*Programa de Asignaciones Familiares*) implements a program to improve Honduran population's human capital through encouraging poor families to use education, health and nutrition services, as well as improving the quality of such services. The program consists of several interventions, including demand-side interventions which comprise a set of vouchers for nutritional status and school attendance (for children attending school until 4th grade –i.e, 6-12 years of age) [85,000 families covered]. A recent impact evaluation shows that, in its target population, PRAF has resulted in:

- A growth of 4.5% in assistance rates;
- A reduction in early drop-outs;
- No significant impact on enrolment rates

(Source: IPFRI, 2003)

c) Cross-Sectoral Interventions

Many of the student background constraints to learning identified in this chapter are most directly dealt with cross-sectorally. If students are unable to learn and come to class regularly because they are frequently sick and malnourished, then an excellent policy option is to ensure that communities have access to clean water, medical care, safe homes, and other basic requirements for life.

Education ministries in some countries internationally have paired up with ministries of health or other bodies to offer nutritious meals in schools to attending students. This can address problems of hunger and malnutrition and can also create an incentive for children to go to school and for parents to keep their kids in school.

d) Decreasing the Private Direct Costs of Schooling

One straightforward way of relieving barriers to greater demand for schooling among disadvantaged population groups is to decrease the private costs of schooling which, especially for poor and very poor families, can not only be a

discouragement for keeping children in school, but can be prohibitively expensive. Tables 4.5 and 4.6 in Chapter IV estimate private spending for primary and secondary by income quintiles. They show that a family in the lowest income quintile would have to spend over a third of their monthly income to keep two primary level and one secondary level child in school in El Salvador. In Guatemala the same family would have to spend 85 percent of their monthly income. Eliminating school fees, fees for exams, and providing free textbooks could considerably alleviate some of these private direct costs. Nicaragua has recently eliminated mandatory secondary school fees and is attempting to enforce the voluntary-nature of primary and secondary school fees. For comparative

purposes, Kenya also recently abolished school fees at the primary level and the response from families was massive.¹³²

e) Publicity Campaigns

Finally, publicity campaigns of various natures can also increase demand for quality schooling. Radio announcements, billboards, television commercials, and town meetings are a low cost means of increasing awareness about the importance of education. These campaigns can address demand constraints in terms of enrollment but also in terms of learning by encouraging families to enroll their children in school, giving important information about exams, enrollment, or school, or providing tips on how to support children's academic success in school.

C. TEACHER QUALITY POLICY IMPLICATIONS

a) Pre-Service and In-Service Teacher Education Policy Implications

As seen above, there is substantial room for improvement of pre-service teacher education in the region. This improvement could be focused along four main dimensions: (a) reducing the gap between required and *de-facto* academic qualifications for teaching; (b) developing selection criteria and diagnostic tools such as accreditation exams, which can contribute to increase teacher quality while rationalizing teacher supply; (c) improving the quality of teacher preparation; and (d) reducing the gap between demand and supply of teacher specializations. Resolving the first gap will require addressing the lack of teacher incentives to work in rural areas, which ends up leading to the hiring of insufficiently skilled local teachers. The development of selection criteria may also imply moving towards a system of full teacher certification in all countries, as is currently done in El Salvador and Costa Rica (in fact, both Guatemala and Nicaragua have plans to transfer teacher preparation schools to the tertiary level), although this policy may be an expensive one if salary increments are directly related to academic title. To improve the quality of pre-service teacher education involves ensuring talented committed teacher-educators, updated and relevant curriculum and resources, and adequate opportunities for practicum. Finally, addressing the demand and supply gap will require a careful assessment of the relevance of subjects taught to the current socio-economic and cultural context, with particular focus on the most disadvantaged student groups.

In terms of in-service teacher professional development, improvements will require, at a minimum: (a) putting more effort on changing/updating classroom practices and taking into account non-standard education contexts (multi-cultural environments, rural areas, etc); (b) undertaking more formal evaluations of the effectiveness of professional development programs; (c) providing more follow-up with teachers post-training to support the often challenging application of what they learned; and (d) improving even further the programs' flexibility.

¹³² See, for example, The World Bank (2004e).

b) Teacher Effort Policy Implications

Two main policy implications emerge from the findings on teacher effort. These are (a) future salary increases should be more accurately tied to actual improvements in teacher performance and effort such as hours worked, student test score gains, or improvements in teaching skills; (b) second, attention should be paid to avoid a possible income effect in which teacher wage increases result in a diminishment of hours worked. Two sorts of mechanisms that could be explored are merit-pay schemes or salary scales that promote higher effective hours of work. A limitation of merit-pay schemes lies in the “distorted” use that could be made of student achievement scores (to obtain higher students scores, schools may be encouraged to select their students or cheat) and in “moral hazard” issues which are raised by having teacher pay dependent on outcomes not entirely under the control of teachers. Using changes in test scores rather than raw test scores as well as intermediate quality/efficiency outcomes, such as is being done in El Salvador, could help address these issues. A limitation of salary scales promoting higher effective hours of work is that they rely on teachers’ assessments while these are rarely done. Using simple increases in the hourly wage depending on the total number of hours worked may be a simpler mechanism than salary penalties. Additionally, it would also be important to analyze the feasibility of other incentive mechanisms, such as effective teacher monitoring systems. Finally, it also appears important to continue (or introduce in the case of Guatemala) salary incentives for disadvantaged geographic areas as a policy to attract high-quality teachers in these areas.

D. PEDAGOGICAL PRACTICE POLICY IMPLICATIONS

a) Active Participative Teaching Strategies Policy Implications

Education reforms have probably taken the right direction in introducing constructivist curricula but effective implementation of this type of curriculum is fairly demanding both financially and technically. Teachers need to be prepared to teach new materials in new ways and then supported as they make those changes in their practice; a wide range of interactive educational materials needs to be available; classes may need to be smaller; etc. Central American countries do not seem to have fully prepared themselves for this challenge. It is, therefore, essential to ensure that the Ministries of Education be fully aware of limitations in effective implementation and commit themselves to adequate implementation. Without this, it is unlikely that these reforms will succeed.

A particularly important set of measures will refer to teacher capacity in executing the new curricula. Possible measures to improve teacher capacity will have to include greater emphasis on classroom practices in both pre-service and in-service education and innovative ways of organizing in-service teacher support such as the creation of spaces for teachers to share new ideas and methodologies¹³³, following, for instance, the “teacher microcenters” concept being applied in Nicaragua (see Box 2.1), or an effective

¹³³ Teachers Training Teachers (TTT) programs have had effective success around the world in providing support for teaching.

system of school supervisors which ensures that teachers obtain continuous support in the application and ongoing application of new methodologies.¹³⁴

Finally, it is also important to ensure that curricular reform, standards, training and supervision be implemented at the secondary education level as well as at the primary level. Most countries have tended to leave secondary education aside in their education reforms with negative consequences on the quality of the secondary cycle. This shortcoming also ends up jeopardizing the transition from primary to secondary. It is particularly imperative to improve the quality of grades 7 to 9 in all countries. The move towards incorporating lower secondary education into the definition of 'basic education', undertaken in El Salvador and, more recently, Honduras, goes in the right direction by shifting the focus from grades 1 to 6 to grades 1 to 9, and supporting a number of accompanying measures (integrated curriculum for the three cycles, introduction of standardized testing at grade 9, etc). More, however, is needed.

b) Instructional Time Policy Implications

The reasons for low effective class hours vary somewhat across countries. With only 180 class days, the amount of official class hours itself seems to be a constraint in Guatemala and Nicaragua. In Honduras and Guatemala, teachers' absences and school closings seem to be particularly problematic. In all four countries the relative proportion of teacher's time spent on teaching is too low.

What can we suggest to increase effective class time? To start with, Nicaragua and Guatemala would be well advised to follow the example of El Salvador and Honduras and introduce an official 200-day school year. Second, and importantly, more effective and reliable means should be used to record teachers' absences and school closings at the school level, through, say, continuously-updated schools' registers. Duly completing the school register should be made compulsory in all countries. Third, an efficient monitoring system of teachers' absences should be put in place, involving the department and district level.¹³⁵ Fourth, communities themselves should be fully involved in monitoring teachers' absences. As we will see, communities are already involved in community-based schools (Chapter V). They could also have a more responsible role in traditional schools. As a minimum, community associations should record teacher absences and report them to district offices which should then take some form of disciplinary action. El

¹³⁴ These two last measures may, in some ways, appear as an illustration of two different approaches, one more compatible with flexibility and pedagogical decentralization, and the other with result orientation and pedagogical centralization. Countries have indeed followed preferably one or the other approach, with some having introduced very centralized frameworks where the Ministries of Education determine how the curriculum will be taught to the students (this is, for instance, the case in Cuba), and others where teachers are given substantial autonomy on how to teach the curriculum (such as Chile for instance). These approaches do not however need to be incompatible with one another.

¹³⁵ Honduras, for example, is in the process of strengthening its department and district offices and delegate to them the management of databases on human resources. Monitoring teachers' absences should also be part of the functions of the newly strengthened offices. Deconcentration of, say, the teacher payroll can also reduce teachers' absences directly by the introduction of a more efficient payment system which does not oblige teachers to travel to get paid.

Salvador already has had some success in monitoring teachers' absences through school governments. Finally, there should be a reallocation of teachers' time towards more time spent on teaching itself, trying to limit, for instance, time spent on school administrative activities. Improved directors' leadership and higher community involvement should help reduce the time teachers spend on these activities.

IV. Conclusions and Policy Implications

The overarching conclusion that can be extracted from this chapter is that, in spite of on-going improvements, there are still serious barriers to learning in Central America. Five main general constraints to student learning have been identified:

- (i) insufficient culture of evaluation, assessment, and accountability;
- (ii) demand constraints associated with student background characteristics;
- (iii) insufficient and poor teacher preparation and education;
- (iv) low teacher effort and insufficient instructional time;
- (v) weak execution of the new constructivist curricula;

These conclusions disproportionately affect the poor as revealed by the analysis of effective schools.

It is difficult to suggest concrete reform paths to address these constraints without further examination of each of the countries' contexts, but we can at least summarize some of the policy implications developed in the chapter, trying, when possible, to address their application to specific countries.

Some suggested recommendations to address the constraint "insufficient culture of evaluation" include:

- (a) increase the level of institutionalization of the assessment systems, by making sure that academic assessments are carried out routinely and have the necessary financing from the Ministry of Education (an external institution could also work if the two above conditions are fulfilled). It would also be advisable to start some evaluation at grade 1, where grade failure is very frequent;
- (b) develop effective information dissemination mechanisms at all levels. Report cards to disseminate information on school performance to different audiences could be particularly promising;
- (c) improve the timely alignment of the tests with standards and curricula. It would also be worth trying to align national standards to the regionally established ones to provide the basis for a well-functioning regional accreditation system (see below);
- (d) establish a well-functioning Central American accreditation system, which could also lead, if necessary, to the implementation of a regional assessment system. However, the costs and benefits of establishing such a system should be assessed.

Participating in international exams may be sufficient to promote higher levels of quality.

Some suggested recommendations to address demand-side constraints include:

- (a) where appropriate, alleviate the roots of demand constraints. Some of the student background characteristics associated with lower demand for schooling and poorer academic performance are things such as parent illiteracy, malnutrition, and non-Spanish first language. Offering parent literacy classes, ensuring access to health care and sufficient food and clean water, and offering at least the first grades of primary education in the primary language of students can remove many of the root barriers to enrollment and learning.
- (b) improve multi-grade schooling and improve and expand school-based management modalities. Chapter V focuses on SBM. The potential of multi-grade schooling could be more fully realized by making sure that teachers are specifically and adequately trained and experienced in multi-grade teaching techniques and that they obtain the on-going support necessary to successfully apply these methods.
- (c) consider conditional cash transfers as a means of boosting enrollment, attendance, and completion for disadvantaged sectors, particularly at the secondary level.
- (d) reduce the private direct costs of schooling. Central American countries should consider the feasibility of eliminating some of the direct costs of schooling such as enrollment fees, exam fees, and fees for textbooks.
- (e) consider using publicity campaigns to expand awareness and acceptance of practices linked to higher enrollment and learning (such as having reading material available in the house and reading to children).

Some suggested recommendations to address the constraint “insufficient and poor teacher preparation and education” include:

- (a) reduce the gap between required and actual academic qualifications for teaching (which will largely require to address the shortage of skilled teachers in rural areas – see below);
- (b) introduce effective policies to provide incentives for skilled teachers to work in rural and low-income areas. This will be particularly important in Honduras, where some monetary incentives to move to disadvantaged areas have been introduced, but the disparity between levels of qualifications in urban and rural areas remains large and is detrimental to low income schools. An effective policy to attract skilled teachers (more experienced) to rural or low-income areas will also be particularly useful in Nicaragua to increase the number of effective

schools. Overall, existing monetary incentives, while necessary, may not be sufficient in and of themselves or may not be sufficiently large. Other measures, such as the obligation for all teachers to spend a period of time in rural areas (as has been introduced in Honduras) or a teacher monitoring system, which limits unjustified teacher transfers between urban and rural areas, may be useful;

- (c) develop selection criteria (in terms of academic achievement) and accreditation exams (to become a teacher), which may require a move towards a system of full teacher certification in all countries, as is currently done in El Salvador and Costa Rica;
- (d) reduce the gap between demand and supply of teacher specializations, undertaking a careful assessment of the relevance of subjects taught considering the socio-economic and cultural context of schools, with particular focus on the most disadvantaged student groups. This will be particularly important in Guatemala, where gaps are very substantial between rural and urban areas and ethnic groups, and not all these differing needs are still addressed. Teacher education for multigrade teaching should be strengthened in all countries that have multigrade schools.

Some suggested recommendations to address the constraint “low teacher effort” and “insufficient instructional time” include:

- (a) avoid decreasing work hours as a primary result of teacher salary improvements;
- (b) develop mechanisms which explicitly link salary increases to teacher performance and effort, analyzing the feasibility of introducing team-based merit-pay schemes such as in El Salvador (which, however, still needs to be fully assessed) or salary scales which promote higher effective hours of work;
- (c) analyze the feasibility and timeliness on a large scale of other incentive mechanisms such as: (a) strong inspection systems; (b) decentralized systems of teacher monitoring; and (c) fixed-term contracts or local authority to hire and fire teachers. The results of the effective schools analysis suggest that parental participation in school management may have very good potential for improving teacher effort (see Chapter V).
- (d) introduce an official 200-day school year in Nicaragua and Guatemala;
- (e) develop better ways of recording teacher absences and school closings at the school level, through, continuously updated schools’ registers for example;
- (f) implement an efficient monitoring system of teachers’ absences, by involving the department and district level, as well as the communities themselves organized in school governments;

- (g) reallocate teachers' time towards teaching itself, trying to limit, for instance, time spent on school administrative matters (which could be to a large extent decentralized to directors and parents). Teachers should be granted the necessary autonomy and support within the school to perform their pedagogical tasks.

Some suggested recommendations to address the constraint “weak execution of the constructivist curriculum” include:

- (a) put more emphasis on classroom practice in both pre-service and in-service training;
- (b) develop innovative ways of organizing in-service teacher support such as the creation of spaces for teachers to share new ideas and methodologies, following, for instance, the “teacher microcenters” in Nicaragua;
- (c) develop an effective system of school supervisors which ensures that teachers obtain continuous support in the application of new methodologies, while making sure that they continue using these methods (the system of “*asesores pedagógicos*” of El Salvador should be assessed). Principals should be more actively used in a role of academic and pedagogical leadership;
- (d) ensure that curricular reform, standards, training and supervision are implemented at the secondary level as well as at the primary level.

Chapter III: Expanding Secondary Education in Central America

With the dramatic increase in primary school enrollment rates across Central America, countries are turning their attention to secondary schools. This attention is the result of a convergence of factors including increased societal demand for secondary education, growing acknowledgement of the importance of post primary education for personal and national development, serious challenges in secondary coverage and quality, and some fiscal space for investing more resources in secondary now that many of the fixed costs for primary are largely in place. At the same time secondary education faces challenges of access, equity, quality and relevance as was described in Chapter I. Addressing these challenges is one of the most urgent needs in Central American education.

In deciding policies for secondary expansion and improvement countries' first major task is to determine the primary objectives of secondary education in their country. The objectives of secondary education as posited by Ministries of Education in Central America revolve around two major themes: the first is to equip youth with knowledge and skills to support national economic and technological growth and, the second, to prepare students to successfully enter the labor market. This chapter begins by briefly presenting why it is important to expand secondary education in the region. Second, the chapter examines the reasons for low coverage and options to expand it, including why investment of more public monies in the cycle is crucial. A final section offers cost simulations to reach target secondary enrollment rates in El Salvador and Honduras.

I. Why is Expanding Coverage of Secondary in a Broad-based Manner a Regional Priority?

Chapter I showed that there is a severe coverage gap in Central America at the secondary level. Gross enrollment rates in the four countries range from 33 percent in Guatemala to 61 percent in El Salvador. These rates are well below those of comparison regions with similar per-capita income. This coverage gap, paired with quality and equity problems in secondary education in the region, create a major stumbling block to individual opportunity and national development.

Secondary education helps individuals improve their lives and it also helps countries grow and develop. The rate of return analysis in Chapter I affirmed that people who go to secondary school, particularly upper secondary school, earn significantly more than those who do not. These additional earnings allow individuals to improve their health, nutrition, and overall quality of life. But recently, research is showing that secondary education also benefits national growth and development in meaningful ways.

A population with full secondary education is key to boosting national competitiveness and GDP in an increasingly technological world¹³⁶. Secondary enrollment in developing countries has been positively related to GDP levels over the past three decades and mass secondary schooling is critical to the ability of countries to attract and benefit from trade

¹³⁶ See Fuller and Holsinger (1993) and The World Bank (2003).

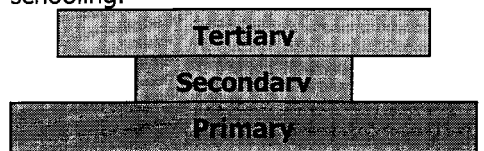
and foreign direct investment. As good jobs increasingly rely on skilled labor, an undereducated population will fail to attract new investment. Employment opportunities in countries with low or highly skewed education levels are likely to only exacerbate existing inequalities and face severe skill bottlenecks. On the other hand, skilled workers are much more productive than unskilled workers in today's technologically advanced firms. Skilled labor generates a beneficial cycle in which higher-skilled workers, by being more productive, generate greater profits for firms, who reinvest a portion of those profits in higher salaries, thereby increasing the assets of workers who, in turn, can invest more in developing more skills. There is, therefore, both a direct link between the relationship of education and wages at the individual level (as captured by private rate of return analysis) and the relationship of education and aggregate income at the country level. What is more, this skill upgrading should have a larger effect on growth rates now than before because of the increasing need for skilled, educated labor. Thus, countries with low levels of education remain in a trap of technological stagnation, low growth and low demand for education.

Looking over time, secondary enrollment in developing countries has been positively related to GDP levels over the past decades.¹³⁷ The high returns in upper secondary education in Central America suggest a combination of high demand for secondary graduates and low supply of secondary graduates. The demand for educated workers is likely to only increase in Central America with the CAFTA (Central American Free Trade Agreement) because reforms to liberalize trade regimes, encourage FDI and facilitate licensing of technologies may further unleash the demand for schooling.

Central American countries have pursued lopsided education development paths.

Figure 3.1: Illustration of Central American Education Distribution

In El Salvador and Costa Rica more people have primary schooling and tertiary schooling than have secondary schooling.



The most successful examples of nations increasing their populations' education level, notably in East Asia in recent years and the United States some decades ago, expanded their education systems one level at a time - first ensuring that there was broad enrollment in primary, then in secondary, and finally in tertiary.¹³⁸ Latin America, on the other hand, has for the most part not followed this approach. Instead, many Latin American countries have expanded and/or invested heavily in the higher levels of education without first ensuring that there was broad access to and completion of lower levels. A balanced transition is necessary because it minimizes inequalities, ensures that the most gifted students go to university, and takes advantage of the

¹³⁷ See The World Bank (2003) and Loayza, Fajnzylber and Calderón (2002) on Central America. This second study, by regressing the change in the average per capita growth rate between the 1980s and the 1990s on a set of structural and cyclical variables, finds that changes in educational attainment, measured by the gross enrollment rate in secondary education, significantly contributed to the differential growth rate in Central America (about 15% of the projected per capita growth rate between the 1980s and 1990s is explained by education).

¹³⁸ See The World Bank (2003).

complementarities between the phases in an educational transition and those in the technological transition of a country.¹³⁹

Central American countries represent no exception to this pattern of limited secondary enrollment and, subsequently, inadequate skills. Costa Rica and El Salvador have education distributions that resemble a “lopsided anvil” where the bulk of the population have only primary schooling, and fewer individuals have secondary schooling only than have tertiary level schooling (see Figure 3.1).¹⁴⁰ In Nicaragua, most people have only reached primary school, very few have reached lower secondary, and more have reached upper secondary and tertiary. Finally, in Honduras and Guatemala, the largest share of the population has only reached primary and similarly fewer people have reached lower secondary, upper secondary and tertiary education. East Asian countries, on the other hand, have a distribution resembling a diamond in which more adults have secondary schooling than primary or tertiary. This diamond shape is more desirable for a developing country in that it represents less educational inequality and indicates that most of the population has, at the least, attended secondary.

II. Constraints to Equitable Secondary Coverage

There is no one single obstacle blocking greater secondary coverage. Rather, there are multiple different causes, ranging from students' need to work and constraints such as high private direct costs of schooling, to students' lack of interest in attending secondary due to low quality and relevance of schooling. To a more limited extent there are also supply shortages, particularly in rural areas. This section combines findings from household surveys, survivor function plots, rate of return analysis, and education production functions to investigate some of the reasons for low secondary enrollment figures in Central America.

Table 3.1 summarizes the primary responses from household surveys in three countries regarding why teenage students do not attend school.¹⁴¹ These responses are a good starting point from which to discuss the main reasons for limited secondary coverage.

¹³⁹ Latin America is the most unequal region in the world and unbalanced transitions between education levels can perpetuate inequality. An unbalanced transition, with low secondary education levels, would relegate the bulk of workers to low-skill, low-wage jobs while a privileged few earn the high wages that come from a university education. Because of a close relationship between schooling and earnings, an unequal distribution of education tends to perpetuate an unequal distribution of earnings.

¹⁴⁰ This figure is adapted from The World Bank (2003).

¹⁴¹ Household surveys provide useful insights on the reasons for low coverage. These surveys ask families why teens are not in school. Care needs to be taken, however, when analyzing this type of information. Firstly, replies are subjective and, as such, are subject to bias, mistakes and miss-interpretations. Secondly, a thorough study of demand relationships can only be done when there is availability of supply (we could then observe the revealed preference of a family that has access to schooling). If supply is not available, it will be more difficult to disentangle the true reasons for non-attendance and the responses obtained may under or, more likely, over-estimate the weight of demand-side factors. Also, information is only available on reasons for non-attendance by age, providing an incomplete explanation of reasons for non-attendance by grade (which the comparison between the survivor plots by grade and age could somewhat illustrate). Finally, this question addresses non-attendance in school rather than non-enrollment. Non-attendance most likely includes both non-enrollment as well as school absences.

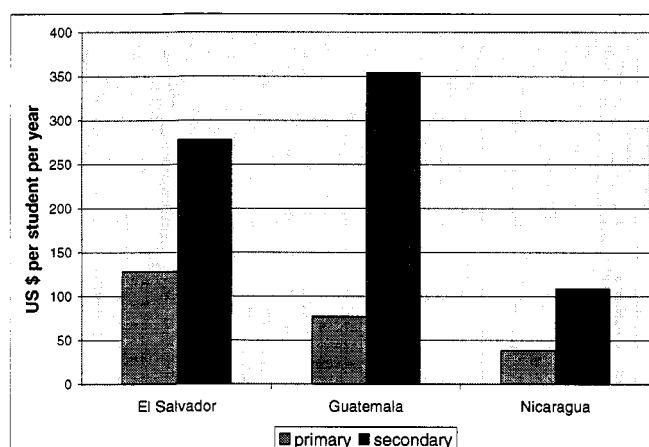
Table 3.1: Reasons for non attendance in the 13-15 and 16-18 age ranges						
	El Salvador		Guatemala		Nicaragua	
	13-15	16-18	13-15	16-18	13-15	16-18
<i>School related reasons</i>	%	%	%	%	%	%
No place available			1.5	0.7	2.4	1.4
No grade			0.1	0.1	6.7	2.4
No school			1.6	1.1		
School too far	2.4 (a)	1.4 (a)	1.5	0.9	1.9	0.4
No teachers					1.1	0.3
Sub-Total	2.4	1.4	4.7	2.8	12.1	4.5
<i>School/family related reasons</i>						
Lack of money, too expensive	25.4	19.7	29.7	23.5	2.1	2.4
<i>School/student related reasons</i>						
Lack of interest	34.7	27.4	22	19	23.5	21.5
Total	62.5	48.5	56.4	45.3	37.7	28.4
<i>Family related reasons</i>						
Household work	5	9.6	11.4	17	20.5	31.7
Need to work	12.5	25.7	22.8	29.2	1.1	0.1
Sub-total	17.5	35.3	34.2	46.2	21.6	31.8
Family problems	5	8.5			24.7	18.2
Parents do not want	3.9	0.9				
Total	26.4	44.7	34.2	46.2	46.3	50
<i>Student related reasons</i>						
Age			1	1.2	0.6	0.6
Completion of studies			0.9	0.6	6.2	7.8
Pregnant			0.5	1	2.4	7.4
Illness			2.2	1.5		
Total			4.6	4.3	9.2	15.8
Other	11.1	6.8	4.8	4.2	6.8	5.8

Source: Household Surveys. (a) Includes no place available.

Economic constraints: private costs of secondary. Household surveys suggest economic constraints are a main determinant of secondary school non-attendance. In El Salvador and Guatemala roughly one in four families report that the cost of schooling prevents youth from attending school. Indeed the private costs of secondary education in Central America are markedly higher than other education levels (see Tables 4.5 and 4.6 in Chapter IV and Figure 3.2). Sending one child to public secondary school in

Guatemala costs, on average, almost 50 percent of the annual income of a poor household and 15 percent of the annual income of a middle-lower income household. However, in all four countries, families with multiple school-age children may face prohibitively high private costs of schooling (in the private but also in the public sector).

Figure 3. 2: Private Costs of Secondary are Significantly Higher than the Private Costs of Primary



Source: Table 4.5.

Disaggregation of the household surveys by urban and rural location (not shown here) reveals that urban families are more likely to cite schools as “too expensive” than are rural families. This may have to do with the large proportion of private secondary schools throughout Central America in urban areas.

Need to work. Relatedly, the declared need for youth to work, whether at home or in the formal or informal labor markets, is one of the most significant factors for non-attendance, both for urban and rural areas. Predictably, its importance increases, as youth get older. Survival plot functions

(Figures 3.3 and 3.4) suggest that dropout rates between education cycles and mid-cycle dropout rates in upper secondary, which are generally quite high, may be related in part to age/work reasons¹⁴². The need to work is much less relevant before age 13 in all countries.

Disaggregation by income quintiles reveals that the need to work at home is more prominent in the poorer quintiles, while the need to work in the labor market is basically equivalent. This surprising last finding may hint at the fact that youth pertaining to the wealthier echelons have an easier time finding employment. Although wealthier students have higher private rates of return from secondary education (see Chapter I), they may also have a higher opportunity cost of attending, in particular in the urban area, if they have access to relatively well-paid jobs. By contrast, youth from the poorest quintiles may have lower private rates of return but face less enticing immediate earning prospects. Certainly, however, the earnings contributions of youth from poor and very poor families is likely to result in a larger proportional contribution to family income and the higher declared need to work in the poorer quintiles (summing both domestic and labor market work) probably reflects this.

¹⁴² The average age of completion of primary is between 13 and 13.5 in all countries, which is precisely when children start dropping-out of school for work reasons. As age increases, drop-outs increase even more.

Figure 3.3: Comparative survivor plots by grade

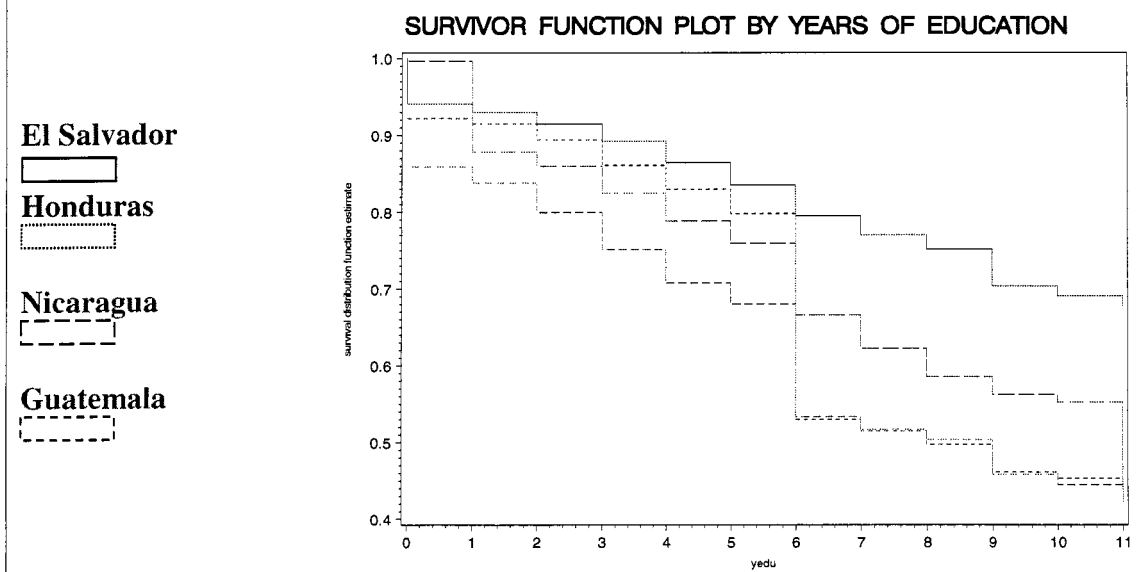
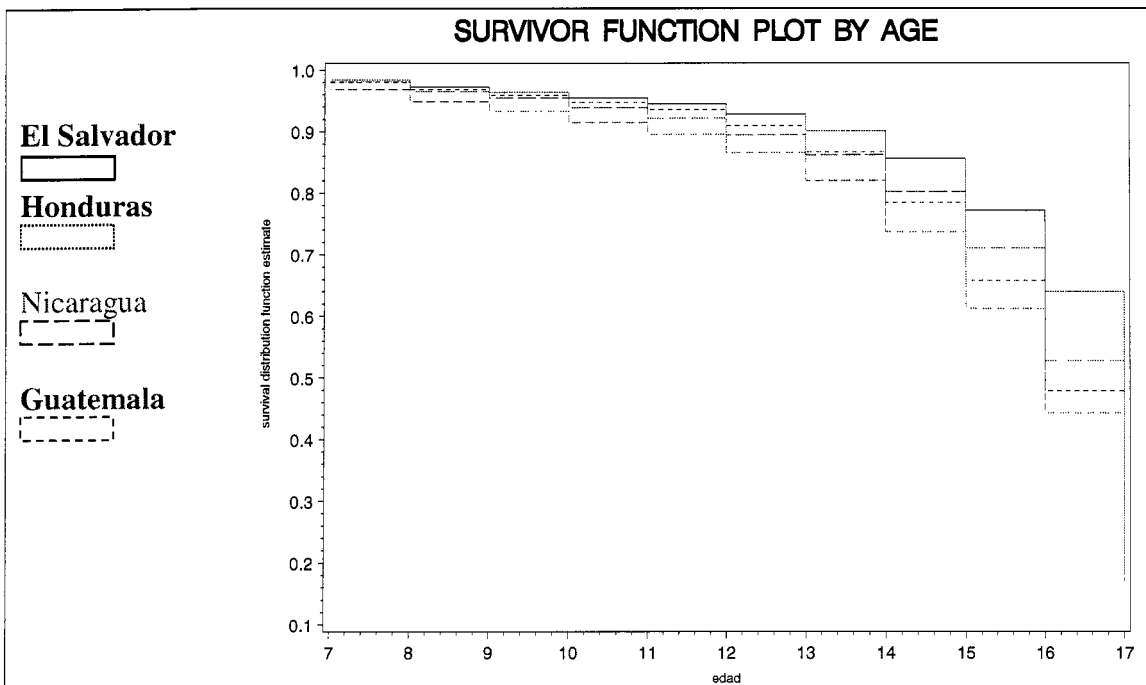


Figure 3.4: Comparative survivor function plots by age



Source: Household Surveys.

Another, more analytical way, of analyzing the determinants of enrollment and completion is through the estimation of demand and completion functions. We undertook this exercise in the case of El Salvador. Without spending time on methodological

caveats, we report the main results of this exercise in Box 3.1 below.¹⁴³ In this analysis socio-economic status is the first determinant of enrollment and completion (proxied by parents' education, dwelling characteristics and household income). Lower socio-economic status, as seen above, is associated with lack of money to attend school, need to work in the household and lower access to quality education. Additionally, we can also see that there is a positive but decreasing impact of age on enrollment and completion: this hints at the fact that while older children are more likely to be enrolled in secondary than younger ones (due to repetition, etc), it is also true that, as they become older, their probability of not being enrolled increases due to increased opportunity cost of staying in school.

A widespread lack of interest in attending school points to major obstacles in terms of the quality and value of attending lower and upper secondary. Another of the most prominent reasons families state prevent school attendance is lack of interest. While this is clearly a subjective opinion whose root cause is impossible to determine, it is likely that much of the lack of interest is due to a belief that schooling is not worth the time, monetary, and energy investment it requires. This is tied into questions of low rates of return to schooling, little relevancy to students' lives, and poor quality of schooling. The education production function on school enrollment and completion in El Salvador (Box 3.1) supports these findings. School quality, as proxied by pupil-teacher ratios, class size and public spending per child is a particularly important determinant of enrollment and completion.

Survival functions show that student dropout is particularly acute at the lower secondary level (Figure 3.3). There are pieces of evidence which point to an acute problem in education at the lower secondary level. First, lack of interest is the most important reason for non attendance in the 13-15 year old range, age of transition between primary and secondary. Secondly, low relevance and quality are also confirmed by rates of return and achievement scores particularly low at that level. As the opportunity cost of attending school increases, for the 13-15 year old range, low quality and relevance constitute another disincentive for attendance. This is true for all countries, and is, in fact, most frequently cited in household surveys in El Salvador, the country that has put significant effort into improving its lower secondary cycle. This indicates that despite efforts and relatively high transition rates from primary to lower secondary, even El Salvador has to pay close attention to ensuring that students enter, and remain in lower secondary.

Lack of interest continues to be a problem in the 16-18 year old range and the survival plot graph (Figure 3.4) shows that as youth get older they are more and more likely to be out of school. The survival plot by years of schooling shows that transition from lower to upper secondary is also problematic. Nicaragua is the only country that does not have a large lower to upper secondary transition gap, perhaps because both cycles are generally offered in the same schools. In the other countries, where lower secondary schools and upper secondary schools are often separate, there appears to be challenge in facilitating student transition to upper secondary. This is true despite mid-cycle dropout in lower secondary being relatively low in all countries (less so in Nicaragua).

¹⁴³ Methodological limitations include biases produced by unobservable factors, measurement error, etc.

Box 3.1: Determinants of enrollment and completion at the secondary level in El Salvador

Enrollment and completion functions, 2002					Completion functions, 2000		
	Net Enrollment Secondary 16-18	Net Enrollment Secondary 2	Net Enrollment Secondary 3	Completion basic >= 15		Completion basic, 15-21	Completion secondary, 18-21
age2	20.3884*** (4.4793)	20.1429*** (4.4849)	20.1864*** (4.4823)	9.8564*** (2.0140)	Household income per capita(log)	0.1929*** (0.0486)	0.4240*** (0.1188)
age2	-0.5946*** (0.1315)	-0.5874*** (0.1317)	-0.5886*** (0.1316)	-0.2693*** (0.0605)	Fees	0.0037*** (0.0008)	0.0015* (0.0008)
Female	0.1950 (0.1294)	0.1815 (0.1294)	0.1929 (0.1294)	0.1244 (0.1171)	Drinking water	0.3459*** (0.0786)	0.5013*** (0.1274)
Birth Order	-0.3392*** (0.0581)	-0.3276*** (0.0577)	-0.3377*** (0.0580)	-0.3301*** (0.0533)	Electricity	0.8075*** (0.1253)	0.6046*** (0.2313)
Father's Education	0.0581*** (0.0203)	0.0591*** (0.0205)	0.0577*** (0.0203)	0.0707*** (0.0185)	Floor	0.5356*** (0.0859)	0.7147*** (0.1482)
Mother's Education	0.1146*** (0.0208)	0.1154*** (0.0210)	0.1147*** (0.0209)	0.1376*** (0.0184)	Sanitation	0.6050*** (0.1902)	0.4541 (0.4133)
Public	1.5750*** (0.5432)	5.1496*** (0.6343)	1.0625 (1.3504)	0.3997 (1.1422)	Age	4.7000*** (0.3879)	6.9929*** (2.0642)
HH Head Female	-0.4127 (0.2664)	-0.4010 (0.2611)	-0.4133 (0.2657)	-0.5103** (0.2460)	Age squared	-0.1200*** (0.0107)	-0.1627*** (0.0527)
Mother Self-employed	0.4491*** (0.1514)	0.4627*** (0.1513)	0.4552*** (0.1516)	0.3645*** (0.1349)	Female	0.3657*** (0.0684)	0.2417** (0.1035)
HH Income pc (log)	0.7470 (0.5184)	0.6951 (0.5011)	0.7432 (0.5172)	0.3948 (0.4803)	Father's Education	0.1280*** (0.0102)	0.1158*** (0.0151)
HH Income pc squared (log)	-0.0731* (0.0438)	-0.0698* (0.0424)	-0.0728* (0.0437)	-0.0357 (0.0413)	Mother's Education	0.0962*** (0.0121)	0.1330*** (0.0182)
Log number children <=21 yr	0.6227*** (0.1776)	0.5976*** (0.1770)	0.6218*** (0.1777)	0.5279*** (0.1605)	HH Head Female	-0.1194 (0.1323)	-0.3886** (0.1924)
Dfloor	0.5878*** (0.1951)	0.5808*** (0.1949)	0.5836*** (0.1961)	0.6202*** (0.1525)	Total number children <=21 yr	-0.1278*** (0.0191)	-0.1729*** (0.0347)
Delect	0.2464 (0.2272)	0.2069 (0.2254)	0.2366 (0.2298)	0.2957 (0.2240)	Birth Order	0.5775* (0.2987)	0.2084 (0.3938)
Dwater	0.4975*** (0.1691)	0.5114*** (0.1677)	0.4937*** (0.1699)	0.4918*** (0.1469)	Single parent	0.0119 (0.1301)	0.2682 (0.1836)
Dsanit	0.4958 (0.3643)	0.5514 (0.3663)	0.4912 (0.3646)	0.6737** (0.3261)	Fostering	-0.6761*** (0.1212)	-0.6875*** (0.1856)
Classrooms per 100 children 4-18	0.8445*** (0.1346)		0.9412*** (0.3190)	0.6923*** (0.2661)	Pupil-teacher ratio, Basic	-0.0271*** (0.0079)	
Students per classroom		-0.1368*** (0.0243)	0.0304 (0.0615)	0.0479 (0.0509)	Subsidy Basic per child 7-15	0.0452*** (0.0154)	
Pupil-teacher ratio	-0.0469 (0.0288)		-0.0721 (0.0501)	-0.0701* (0.0411)	Pupil-teacher ratio, Secondary		-0.1035*** (0.0234)
Ratio children 4-18 to teachers		-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	Subsidy Secondary per child 16-18		0.0366 (0.0364)
Urban	0.2514 (0.1545)	0.1603 (0.1589)	0.2087 (0.1618)	0.2929** (0.1440)	Constant	-49.6571*** (3.5160)	-78.4513*** (20.2462)
Constant	-180.5303*** (38.1210)	-174.1645*** (38.1396)	-179.2265*** (38.1276)	-95.1737*** (16.7252)	Observations	9209	4782
Observations	2715	2602	2602	3571			

Robust standard errors in parentheses

Other (non significant) variables included in the specification but not reported here include: parents' employment status and occupation, regional dummies

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Source: The World Bank (2004b).

School availability is less of a constraint. A fourth constraint to secondary coverage that should be addressed is lack of supply. Pure supply-related factors, such as the lack of presence of a school or grade, account for only a minor share of the explanation for non-attendance in household surveys, with the exception of the 13 to 15 age range in Nicaragua. This may illustrate the fact that school availability is not a major issue anymore in Central American countries. In El Salvador, where lower secondary grades are now part of the basic cycle and are taught on the same campus as primary school grades there is probably very little supply-constraint at the lower secondary level. Meanwhile in Nicaragua, the large number of incomplete primary schools in rural areas may explain the more acute supply constraint finding in the 13 to 15 age range. The survival plots suggest that supply shortage (or lack of cheap public supply) may also be an issue in Honduras, where there are particularly low education cycle transition rates.

On the other hand, supply constraints may be under-estimated by the household surveys. Since these surveys give no actual information on school supply other responses such as lack of interest may camouflage actual access problems and economic constraints may reflect limited availability of low-cost schools. Certainly at the upper secondary level there are enough spaces for only a fraction of the number of age-appropriate youth. The education production function analysis of El Salvador demonstrates that school supply, as proxied by the number of classrooms per children, is an important determinant of school enrollment and completion at the upper secondary level (public spending per child may also proxy for availability of supply). The fact that school availability is hardly cited as a problem in the 16-18 year old range suggests that the household surveys are, indeed, under-estimating supply constraints. As other constraints are relieved the lack of sufficient supply of low-cost lower and upper secondary schools may become an increasingly prominent problem.

Disaggregation by urban and rural location predictably demonstrates that school availability is more of a problem in rural areas than in urban ones.

All of these factors are likely to disproportionately affect the poor. In Chapter I survival plots by income quintile illustrated that transition rates between cycles and mid-cycle dropout rates are worse for lower income groups. Many factors are likely to contribute to this troubling pattern including greater repetition rates and proportions of over-age students, more health related factors such as early pregnancy, more supply constraints in terms of quantity and quality of services, and greater need to contribute to family income. Even worse, the private rate of return analysis in Chapter I further showed that when poor students do stay in school their returns to schooling are lower than students from higher socioeconomic groups.

In sum, there are multiple factors contributing to inadequate and inequitable enrollment in secondary schools in Central America. These factors include high private and opportunity costs of schooling, low education quality, and insufficient supply of schools in certain areas. Because of the diversity of causes of inadequate enrollment policy

responses will also have to be varied and multidimensional. The next section of this chapter explores these options.

III. Alternatives for Increasing Secondary Coverage

This section reviews four different areas of policy responses to the constraints discussed above. We look at (1) secondary financing, (2) demand-side interventions, (3) alternative delivery mechanisms, and (4) quality enhancing interventions.

A. PUBLIC AND PRIVATE FINANCING

Public financing of secondary education should expand in Central America and ensure a favorable environment to equitable secondary coverage. Household surveys suggest that private financing (household expenditure in public and private schools) represents between 50 and 80 percent of total secondary education spending in Central American countries (see Table 3.2). High shares of private financing also translate into high shares in terms of supply. Indeed, between 20 and 55 percent of secondary enrollment is provided by the private sector in Central America (see Table 3.3).¹⁴⁴ Private schools in Central America are attended disproportionately by students in the top income quintile (see Figure 3.6)

Table 3.2: Total Education Expenditure in Secondary Education by Source of Financing (US\$, 000)			
	El Salvador 2002	Guatemala 2001	Nicaragua 2002
Total education expenditure	219,000	215,000	52,200
Estimated public expenditure	108,000	40,400	13,900
Estimated private expenditure	111,000	174,300	38,400
Percent of estimated private exp.	51%	81%	74%

Source: Table 4.2 and Household Surveys.

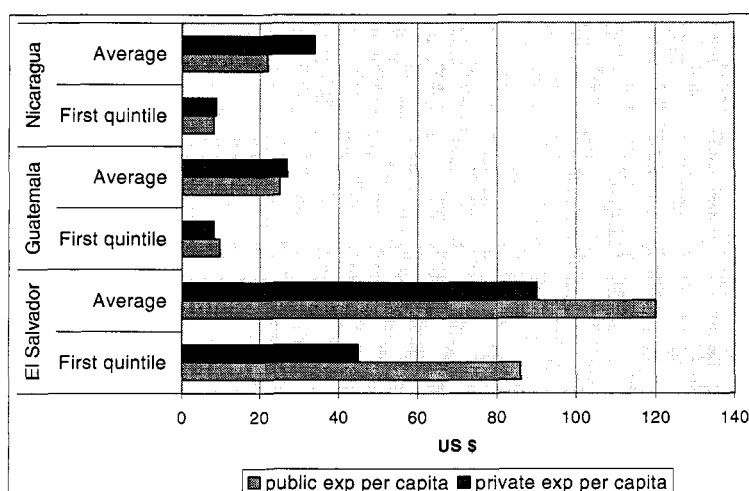
¹⁴⁴ These figures change slightly when considering official data of the MINED in all countries. For instance, the official 2002 figures report a public share of 67% and a private share of 32% in El Salvador in upper secondary. In Honduras, differences are more marked at the lower secondary level. It is likely that the private share be under-estimated in the Honduras household survey due to the lack of precision of the question which was asked for the first time in March 2003.

Table 3.3: Public enrollment share in secondary education (%)												
	El Salvador, 2002			Guatemala, 2000			Honduras, 2003			Nicaragua, 2001		
	7-11	7-9	10-11	7-11	7-9	10-11	7-11	7-9	10-11	7-11	7-9	10-11
Public sector	80 (80)	84 (86)	72 (68)	46	55	24	78 (75)	82 (79)	68 (68)	73	75	66
Private sector	20 (20)	16 (14)	28 (32)	54	45	76	22 (25)	18 (21)	32 (32)	29	25	34

Source: Household Surveys. Notes: Between brackets: Data of the MINED, 2002 for El Salvador and 2003 for Honduras.

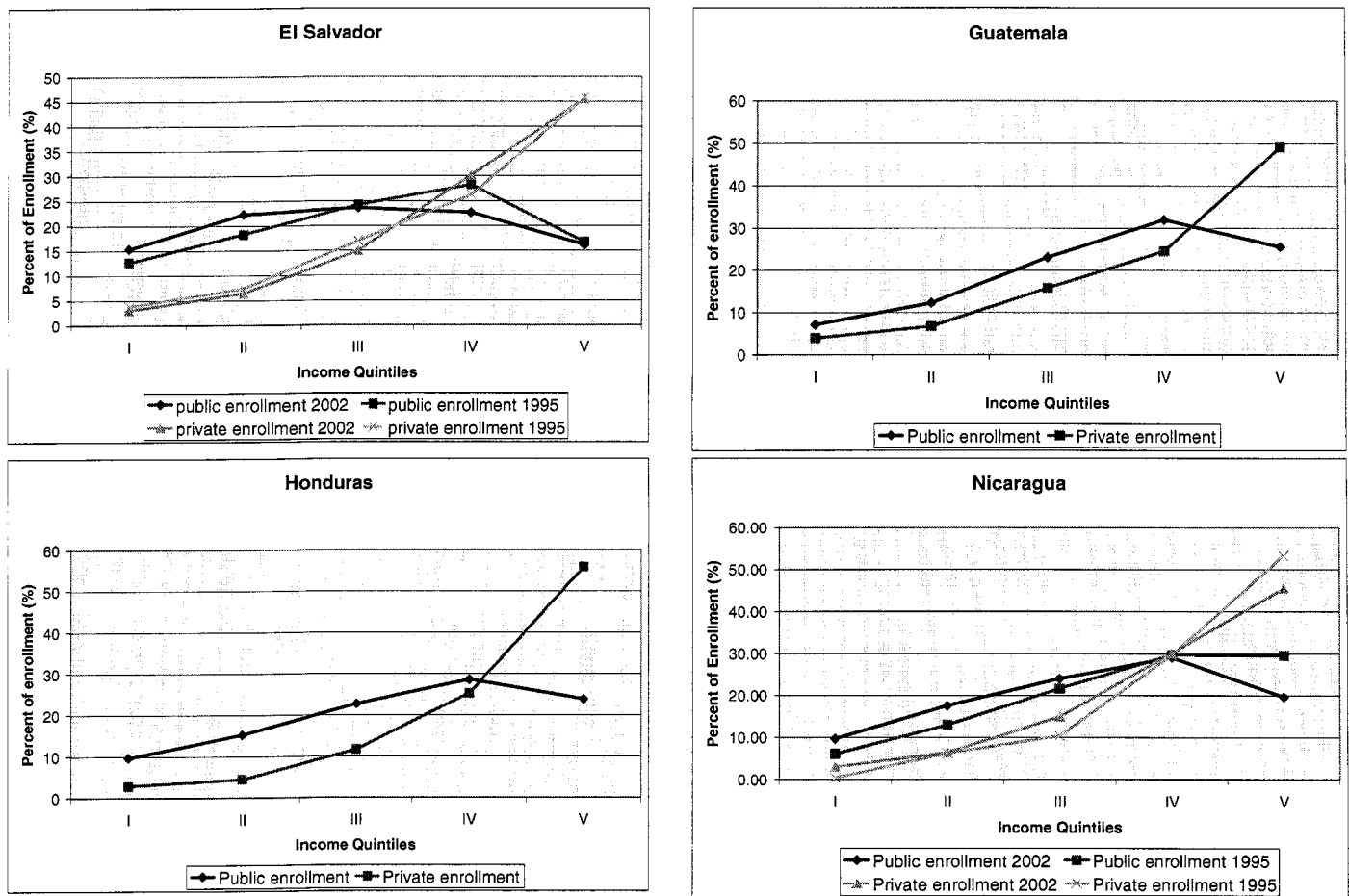
Additionally, within the same public sector, per capita private expenditure on secondary is higher than public expenditure in all countries for which we have data, with the exception of El Salvador (see Figure 3.5), which contributes to explain why public schools are attended predominantly by students from upper middle-income groups. The plots in Figure 3.6, which show what percentage of secondary enrollment is from students in each income quintile, suggest that El Salvador has recently made great strides toward achieving broad-based secondary coverage. Private secondary schools, in recent years, have become even more targeted to the upper two income quintiles but public schools are now largely attended equitably by the three middle-income quintiles. Nicaragua, on the other hand, which has a similar lower secondary enrollment rate to that of El Salvador, is still far from achieving equitable broad-based coverage. Despite progress toward greater equity since 1995, secondary distribution in Nicaragua is still skewed in both public and private schools towards the upper income quintiles. A similar situation is found in Guatemala and Honduras.

Figure 3.5: Public and Private Expenditure per School-Age Population in Public Secondary Education



Source: Household Surveys and Table 4.4.

Figure 3.6: Public and private enrollment by income quintiles



Source: Household Surveys.

The high share of private financing in secondary indicates the need for increased priority of secondary education in the national budget. Increased public financing could be used to expand traditional as well as alternative secondary models (discussed below), balance public-private costs in the public sector (by exempting low-income students from paying fees or by providing scholarships), and promote quality improvements.

The case for public financing and trade-offs among regional priorities. There are two main reasons why we argue increasing public financing of secondary is important. First, as discussed in Chapter I, private rates of return to lower secondary are low in all countries, creating a major disincentive for enrollment, especially when coupled with the increasing opportunity costs of attending school in the 13-18 age range. A public intervention should not be decided on the basis of the private rate of return but on the basis of the difference between the social and private rates of return.¹⁴⁵ Social rates of

¹⁴⁵ On this point, see also Hammer (1996).

return are, however, very difficult to measure.¹⁴⁶ Yet the disconnect between low private rates of return for lower secondary and quantitative evidence that broad-based secondary education has a strong impact on the accumulation of human capital and national growth, suggests that social rates of return are higher than private ones and, therefore, without sufficient public intervention, a socially sub-optimal equilibrium level of lower secondary education will be reached.

A public intervention can act in different ways to ensure the social optimum. First public financing can be used to implement policies that improve the quality and relevance of lower secondary encouraging higher demand from families and the labor market for this cycle.¹⁴⁷ Second, public spending can reduce the opportunity costs of schooling by providing demand-side subsidies and/or developing alternative secondary education modalities that make it possible to combine work with schooling.

Second, as was shown in Chapter I, rates of return to secondary are particularly low for low-income groups, while direct private costs are particularly high for these same groups, creating additional disincentive to attend for low-income people. Therefore, there is justification for additional public intervention on pure equity grounds. Public intervention may encourage higher participation of low-income groups in secondary education by implementing policies that improve the quality of the schools that they attend and/or reducing the burden of private costs through demand-side subsidies or other policy measures (other public policies such as improving the access of the poor to highly paid jobs would also be useful but are beyond the scope of this report).

With low income levels and high debt levels, all four Central American countries face, however, strong budgetary constraints in the funding of government services and spending areas. Because of these fiscal constraints, there will necessarily be some trade-offs among the regional priorities laid out in this report (learning improvements, universal completion and broad-based secondary coverage). The nature of the interrelation of these three education priorities suggests an order of intervention: first, the quality of learning should be improved; next, universal primary completion should be assured; and finally, secondary education should be expanded for all population groups. While education quality should be the first and foremost priority for all four countries, the later two priorities could be addressed simultaneously or even in reverse order in the short or medium term if there is substantial room for improvement in the primary to lower secondary transition rate.

Expanding secondary coverage can not happen overnight. But nor should this priority go ignored. At the very least, countries should expand lower secondary to accommodate all children finishing primary. Nicaragua, Guatemala and Honduras should aim at encouraging broad-based expansion of lower secondary by expanding equitable access to

¹⁴⁶ Social rates of return include private benefits and external effects (or externalities).

¹⁴⁷ This approach is also supported by Glewwe (1996). He takes Ghana as an example and as he finds that there are low returns in middle schools (grade 7 –1) suggests to increase investment, on quality grounds, to raise the rate of return.

secondary education for those children who are now completing primary.¹⁴⁸ Additionally, all countries should make an effort to expand upper secondary education, although, with the exception of El Salvador, these efforts may need to be more selective to save on scarce resources. El Salvador, a country with higher and more equitable lower secondary enrollment, should now aim at expanding upper secondary (while also pushing for full transition of the poor and very poor to lower secondary).

In addition to balancing these trade-offs, it will be essential to envisage strategies which allow increased budgetary priority in all (or at least three) of the four countries to the education sector and promote higher resource mobilization also from other sources (private sector, households). It will be equally important to introduce measures that encourage higher efficiency in the use of resources (more effective teacher management, higher shares of non-salary recurrent costs, re-allocation of spending across education levels within the education budget, cost-efficient delivery systems, effective demand-side interventions, lower repetition rates, etc).

Greater private financing of upper secondary may be an appropriate short-term option in Guatemala, Honduras and Nicaragua. In Guatemala, Honduras, and Nicaragua Ministries of Education are not likely to have enough funds for the expensive tasks of expanding both lower and upper secondary in the short term. Because of this, these countries may wish to explore private financing options for upper secondary (involving civil society as a whole). Increased private financing may also be appropriate in that because few students are making it through lower secondary, limited expansion of upper secondary is a reasonable goal for the short term. In addition, private rates of return are high in upper secondary education, and may therefore make up for the higher opportunity and/or direct costs of schooling at that level. High private rates of return may also suggest that the price elasticity of demand for upper secondary education will be lower than for lower education levels (in other words, higher direct schooling costs - as is generally the case for private schooling - would have less of an impact on the demand for schooling at that level). Increasing private financing does not mean abandoning or cutting public support. Public support remains important for creating an environment that is conducive to private sector participation and expansion, and for mobilizing private resources from companies, NGOs, etc. In addition, it is important to keep in mind that as a larger and more diverse pool of students graduate from lower secondary schools, the government will need to take increasing responsibility to ensure wider access to upper secondary.

In El Salvador, by contrast, greater public financing at the upper secondary level is a more immediate need given current lower secondary indicators. Efforts should, however, be made to minimize crowding-out existing private financing (in other words, upper-income families who are willing to pay for upper secondary should continue to do so).

¹⁴⁸ As the most disadvantaged groups of children begin to complete primary school in higher proportions due to reforms of primary quality and completion rates secondary expansion will become increasingly more equitable.

B. DEMAND-SIDE INTERVENTIONS

We have seen above that the reasons for low coverage go beyond school supply issues. In fact, school capacity may exist but students may still not go to school because schooling is too expensive, they need to work, or they simply do not have any interest in a poor quality schooling system. All these reasons, we have seen, have a role to play. Two main options exist to address lack of money and need to work issues. The first option is to intervene on the demand-side by providing demand subsidies to families and students. The second option is to intervene on the supply-side by improving school quality and relevancy or by providing flexible delivery options that make it possible to combine studying and working. Below we review possible demand-side interventions.

Chapter II discussed some demand-side mechanisms. Traditional scholarships that cover fees and other costs of schooling (uniforms, books, transportation, meals, etc) can be awarded to select (need-based or merit-based) students. Conditional cash transfer programs can provide cash to families or students subject to certain pre-established conditions.¹⁴⁹ Targeted vouchers provide funds for families to select the school of their choice, usually including both public and private schools (see the Colombian case in Box 3.2).¹⁵⁰ These interventions generally impact demand directly but some can have an impact on supply as well, such as the voucher program, which, by generating competition among schools for student enrollment, can create greater school accountability to local communities as well as spur quality improvements.

Box 3.2: “Vouchers” and “quasi-vouchers”: assessment of the Chilean and Colombian cases

Colombia introduced in 1992 a secondary education targeted voucher program that, in 1996, involved more than one-fifth of the municipalities and close to 2,000 private schools with the main objective of increasing the transition from primary to secondary education for poor students. Participation of municipalities and private schools in the voucher program was voluntary. Chile, while decentralizing the management of schools to municipalities, also introduced, in 1981, a system of “quasi-vouchers” directed to all municipal schools and non-fee-charging private schools, to promote competition among schools and lead to higher quality and enrollment.

Colombia: The available empirical evidence suggests that, in the 20% participating municipalities, the program provided an effective way of increasing educational attainment for the poor students benefiting from the vouchers. These positive results seem to have been the result of a variety of factors, among which municipal participation based on sound criteria, such as limited public school capacity and important private sector excess capacity; participation of schools with educational quality comparable to public schools; and effective targeting of vouchers to poor communities. Political economy considerations (lack of government’s commitment, teacher union’s opposition) and administrative difficulties (delays in disbursements, burden of program monitoring) led to the discontinuation of the program at the national level in 1997, but this, however, survived at the sub-national level.

¹⁴⁹ “Oportunidades” in Mexico and “Bolsa Escola” in Brazil are probably the most well known examples to date.

¹⁵⁰ A detailed description of demand-side financing mechanisms in Latin America is provided by Patrinos, H (2002): “A Review of Demand-Side Financing Initiatives in Education”, Background Paper for the WDR 2003.

Chile: During the 1980s, following the introduction of the per-student subsidy, enrolment increased considerably in the private voucher schools (from 14% in 1980 to 32% in 1990) and, controlling for socio-economic status, private subsidized schools seem to perform better than municipal schools, pointing to positive effects of competition on private schools' performance. However, it is generally recognized in the studies that are largely centred on the 1980s period that competition among private and municipal schools was hampered by the lack of incentives and capacity of the municipal sector to compete (existence of soft budget constraints at the municipal level, restrictions on municipal decision-making and lack of autonomy and accountability of municipal schools), lack of clear information on relative school performance, and some "cream-skimming" (advantaged and more able students migrate to private schools thanks to informational advantages and private schools select students). In the 1990s, on the one hand, further constraints on municipal autonomy (teacher statute of 1991) and centrally driven interventions in favour of the poorest/weakest municipal schools complicate even more the working of competition between municipal and private schools; on the other hand, dissemination of standardized school scores (SIMCE scores), increased administrative and pedagogical municipal school autonomy, introduction of school co-financing and improved monitoring of student attendance improve the operation of vouchers. The studies centred on the 1990s generally confirm that private subsidized schools perform better than municipal schools and have improved their performance due to strong incentives to compete (decision-making autonomy, reliance on the voucher or parent co-financing, etc), therefore concluding that competition/choice was helpful in improving the quality and efficiency of schools. However, the impact of competition on the performance of municipal schools remains more controversial, with some studies finding that the improved municipal performance was largely due to competition (hampered by compensatory programs but enhanced by other measures-see above), while others that it was due to the central compensatory programs.

Source: Di Gropello (2005).

To date there are few examples of demand-side interventions in Central America in secondary education. The PRAF in Honduras and the RPS in Nicaragua are conditional cash transfer programs applied at the primary level which have been briefly reviewed in Chapter II. Scholarship programs exist in Costa Rica and El Salvador (see Box 3.3).

Box 3.3: Scholarships in El Salvador

In El Salvador there are scholarships for higher education (President of the Republic, Rodrigo Porth, and FANTEL) and for secondary education. The objective of the secondary education scholarship program which is supported by the World Bank and executed by FEPADE is to provide support to low-income students to enroll in secondary education. It also seeks to mobilize private sector participation in the scholarship program. The program initiated in 1999 and provided 4,192 scholarships (2,290 for general studies and 1,896 for technical/vocational studies) in the last four years. The students in the academic track receive support during two years and those in the technical/vocational studies during three years. At the end of 2002, there were 1,725 graduates from the program, including 209 students from the technical/vocational stream that initiated the studies in 1999 and 791 students from the academic stream that initiated in 1999, and 725 of the same stream that initiated in 2000. Through the end of 2003, the program is expected to support 2,900 graduates.

The World Bank mid-term evaluation of this component of the Secondary Education Project concludes that FEPADE has established clear pre-selection, selection, awarding, and monitoring processes. The program has been promoted throughout the country and is considered a success. The key problem facing the program, however, is its sustainability given the lack of funds to continue financing the scholarships. Hopes for generating private sector participation in order to increase program financing have not materialized.

Source: the World Bank (2004b)

C. ALTERNATIVE DELIVERY MODELS

Increasingly, Central American countries are using innovative delivery mechanisms to increase the supply, quality, and cost-effectiveness of secondary schooling. This subsection looks at basic education centers, public-private partnerships, flexible delivery programs, and school-based management.

Mandatory basic education cycles can improve the transition from primary to secondary. Mandatory basic education cycles can improve the transition to lower secondary by incorporating primary and lower secondary schools on the same campuses, smoothing curricular and pedagogical transitions between the cycles, and generating public acceptance of lower secondary as a compulsory part of basic education. In Central America, this innovation has been piloted in El Salvador and Honduras where both countries have incorporated the full three years of lower secondary (grades 6-9) into the basic education cycle (see Figure 1.1 in Chapter I). Results remain mixed, with more favorable results in El Salvador than in Honduras. These reforms address lower-education supply constraints by bringing lower secondary to primary school campuses as well as quality constraints created by disconnects between primary and secondary curricula. They also have the potential of decreasing unit costs by combining schools although there may be significant initial costs.¹⁵¹

There may be opportunities for public financing-private delivery schemes. Public-private partnerships are another policy option for increasing secondary enrollment capacity as Central American countries push to expand secondary coverage. Key factors to be considered in the decision whether to support public or private secondary expansion include the current existence of private secondary supply, the quality differential across public and private schools, the different capacity utilization of the two sectors, and the priority given to social heterogeneity and integration.

If private schools in a particular country tend to be higher quality than public schools and have idle capacity, then public subsidization of these schools may make sense. In the cost simulation for El Salvador later in this chapter we see that it would be less costly to expand secondary coverage by increasing or at least maintaining its current private sector share than by increasing public schools disproportionately. Many examples exist of public-private partnerships in which public funds support private education delivery. Charter schools in the United States, voucher-funded private schools in Chile, and schools run by private institutions and organizations on public school campuses in Colombia (Concessionary Schools) are a few examples. These methods can support private delivery of education to students regardless of their socioeconomic background. Publicly subsidized, privately run schools in Central America could increase secondary enrollment while improving the equitable distribution of youth in secondary if, for example, private schools were granted public funds to enroll low-income students without charging them tuition fees. This option could also foster more mixed socioeconomic distribution of students across schools and could potentially generate

¹⁵¹ Lewin and Caillods (2001).

improved educational outcomes.¹⁵² Alternatively, public subsidies could be provided to private schools to enroll middle class students at a subsidized rate. This could create new spaces in public schools for poorer students as middle class students shifted from public to private institutions. Both of these scenarios would increase secondary coverage though the first would have a greater per-pupil cost and better equity implications.

In Central America, there are a couple of examples of public-private partnerships in Costa Rica and El Salvador, but these have limited coverage. The partnership approach developed in El Salvador consists of providing public resources to private organizations, mostly education non-governmental organizations or religious groups, to help establish and administer schools. In some cases, the Ministry of Education pays teachers' salaries and the counterpart institution provides the remaining funds (infrastructure, materials, administration, etc). In other cases, this partnership involves contracting out the administration of the school, with MINED providing most of the teachers and some material resources and parents providing the rest. Specific examples of these partnerships include the *Fé y Alegría* schools, the *Dominicas de la Anunciata* Congregation, and the *Maristas* schools. In instances where these schools are located in poor neighborhoods and admit poor students public investment in these schools is socially progressive. In other instances middle and upper income students enroll in the schools making public financing of these schools socially regressive.

Public-private partnerships can also support the expansion of flexible and alternative secondary delivery models, particularly if civil society or the private sector has some value-added in establishing these types of distance or non-traditional programs.

Alternative delivery mechanisms can expand secondary accessibility in rural and low-income areas and can provide specific and relevant skills and knowledge. There have been few interventions in Central America that have aimed to overcome the inequitable enrollment distribution in the public sector by reducing the opportunity costs or private direct costs of schooling. An exception is the recent development of alternative or flexible secondary modalities in rural and low-income areas, which can reduce the opportunity costs of schooling, address supply-side constraints and provide a more relevant education to non-traditional students.

Common alternative delivery mechanisms are distance education programs and programs offered at worksites. These programs are increasingly common in Central America. The Honduran program, *Educatodos*, for example, served more than 85,000 people in 2003. Alternative delivery mechanisms use new pedagogical approaches designed to better serve rural and low-income communities as well as working individuals. They meet the needs of low-income communities by offering a free or low-cost alternative to traditional secondary. Many expand access to rural communities that have not had access to secondary school, and they avoid the high costs of building and staffing a traditional school. Flexible delivery programs are frequently designed to allow students to continue

¹⁵² Although evidence is mixed, private schools, at times have been found to be more cost-effective in terms of student learning outcomes.

working or raising a family while also studying and earning their secondary degree.¹⁵³ Flexible delivery mechanisms would be particularly advisable in Honduras (due to existing fiscal constraints), as well as in Nicaragua and Guatemala, where they would constitute a valuable tool to improve coverage with equity.

That said, it is also important to ensure that such models are subjected to the same rigorous quality requirements that should be applied throughout the system. If these delivery mechanisms do not ensure quality, they can, in effect, set up a parallel and inferior education system for the poor. This should be vigorously avoided. One way to measure this would be to analyze the relative rates of return to traditional and alternative secondary programs. Developing a strong testing and accreditation system will help ensure more uniform quality standards across secondary education options. A key challenge will also be ensuring steady quality of programs and outcomes as programs go to scale. This may require additional per pupil expenditure. Additionally, it will be important to assess and expand flexible programs for marginal urban areas where the opportunity costs of schooling are particularly high due to more dynamic labor markets. To date, although these programs have had some success in improving secondary enrollment, particularly in marginalized areas (see Box 3.4), they have not received sufficient assessment.

Box 3.4: Flexible Delivery of Secondary Education in Central America

Distance Education in El Salvador. Distance Education is part of the Ministry of Education's adult education programs. Adult education is offered to students over 15 years old that cannot attend daily school. It includes four programs that cover 150,071 persons in 2002. Here we only focus on the Distance Education program, which covers 23,291 upper basic and secondary students. The objective of the Distance Education program, which is also supported by the World Bank's Secondary Education Project, is to expand the coverage of upper basic and secondary education targeting the working population mostly in rural areas. The program includes curricular improvements and the provision of material and training to the teachers. It is executed in basic and secondary centers and offered for the third cycle and the academic track of secondary education. The third cycle consists of 5 teaching modules while the secondary education module consists of six modules. Students pay about US\$ 4 to buy each module book. Classes are held in the morning of Saturday or Sunday. Teachers usually are those that teach in the daily school and have been trained in distance education. They receive an additional salary of US\$ 70 per month. The directors of schools that offer distance education also receive an additional salary of US\$ 80 per month to compensate for their administrative duties related to this modality. The distance education program is growing rapidly. From the 19,500 students attended in 2001, it grew to 23,300 students in 2002. Two-thirds of those enrolled are below 25 years old. MINED plans to continue to expand the program, as resources permit. The program still needs to be fully evaluated.

Distance Education in Honduras. The *Educadores* program started in 1995 with the support of USAID, as an alternative scheme for supplying basic education to young people and adults outside the traditional study system. By 2000, *Educadores* had 88,000 students enrolled, mainly in the first six grades of primary education. However, recently, *Educadores* has been expanding

¹⁵³ A discussion of the benefits of alternative models for secondary education is also provided in Figueredo and Anzalone (2003).

into the secondary range. In 2001 it had 7,510 participants from 7 to 8 grades, and was in the process of establishing new groups for 7 to 9. *Educatodos* graduates from the third cycle receive the SEP certificate for the *Ciclo Comun*. The *Educatodos* scheme is delivered by trained facilitators (some paid, some volunteers) who work with study groups outside normal work hours, using approved texts and taped programs. The program has developed an integrated curriculum for 7 to 9 grades that conforms to the SEP guidelines and has been officially approved. The cost per student of this scheme is estimated by USAID at US\$68 a year, plus the capital and operating expenses of a motorcycle for the promoter. The scheme is relatively cheap because it does not hire professional teachers, and many of the facilitators are not paid. This reduced teacher assignment may, however, impact negatively on the quality of the educational outcomes.

The ***Tutorial Learning System*** - TLS (*Sistema de Aprendizaje Tutorial* - SAT) is an alternative model for high school education, oriented toward the rural sector. It has been implemented in communities in the Honduran Mosquitia region by the Bayan – Indigenous Socio-Economic Development Association (*Asociación de Desarrollo Socio Económico Indígena* – Bayan) since 1996. Once again, the SEP recognizes the degrees granted to the graduates of these programs as a valid high-school qualification. TLS is still a small-scale operation. In 2003, it was operating in indigenous communities in the Atlantic Coast departments of Atlántida, Gracias a Dios and Colón, with 70 student groups with an average of 22 students per group. However, during 2004 - 2006 the TLS program plans to expand in other depressed indigenous regions such as the Lenca area (Lempira, Santa Barbara and Copan) reaching a student population of 5,000 in 220 groups.

Although the initial evidence on the quality of outcomes of these two programs in Honduras is heartening, and provides a shameful comparator for the much more expensive main programs of the Ministries of Education, a full evaluation of these two programs is still needed.

Source: The World Bank (2004b,c).

School-based management models can also improve cost-effective secondary coverage, particularly in rural areas. Chapter V focuses exclusively on the school-based management education models currently functioning in Central America. These models give management authority to school staff and community members and are shown to be a cost-effective means of expanding coverage in rural areas although to date, most countries use the school-based management model principally at the primary school level (Nicaragua being an exception).

D. QUALITY AND RELEVANCE

Finally, it is clear from the previous discussion on the causes of low secondary coverage that quality improvements will be key to the expansion of secondary education, in particular in lower secondary. Raising the private rates of return would make investing in education today more attractive, for the same forgone income and discount rate. We will not go in any detail on quality issues here since Chapter II already reviewed quality constraints and areas for reform and intervention. Here, we should just add that there are challenges specific to secondary education that need to be further analyzed, but are beyond the scope of our analysis. A key issue is a curricular one, which refers to the offering of different modalities of secondary for academic and vocational preparation. This is a hotly debated issue. Different modalities enable schools to become centers of excellence in particular areas, allow schools to meet the unique needs of different types of students, and can result in graduates with specific and appropriate skills. However,

academic and vocational streams often end up segregating students of upper and lower classes and, frequently, academic secondary schools are considered superior to vocational schools.¹⁵⁴

E. WHAT POLICY COMBINATION SHOULD BE ADVANCED IN EACH COUNTRY ?

There is no one appropriate policy combination to achieve broad-based lower secondary coverage in Nicaragua, Honduras and Guatemala and broad-based upper secondary in El Salvador. Each country's decisions should ultimately depend on the relative importance of the different causes of low enrollment, which will determine the relative impact of each intervention on coverage, and on the relative costs of each of the interventions. In other words, a cost-benefit or cost-effectiveness analysis is important in order to design the most cost-effective policy package for each country. In all countries there seems to be scope for a combination of policies. El Salvador was reasonably successful in expanding lower secondary education in a relatively equitable way by putting emphasis on public financing and delivery (including basic education centers and autonomous schools) and introducing demand-side subsidies and flexible delivery mechanisms. Nicaragua was also successful in expanding secondary education, albeit substantially less equitably (see Chapter I). Nicaragua used less public financing and delivery, made little use of distance education or demand-side subsidies, and focused on public delivery in urban areas (autonomous schools). Because of the inferior progress in terms of equity in Nicaragua, Guatemala and Honduras would be well advised to follow El Salvador's example when expanding secondary education.

In Honduras, Guatemala and Nicaragua there should be more emphasis on public financing and supply in lower secondary education. Basic education centers should be further encouraged or developed, as should flexible delivery mechanisms. Quality improvements should be promoted everywhere. Demand-side subsidies may be particularly important in Guatemala. In El Salvador, there is justification for larger public intervention in upper secondary, especially in terms of cost-effective modalities, demand-side subsidies and mixed public-private schemes. As in the other three countries, quality improvements need to be encouraged at all levels. Below, we present cost simulations for El Salvador and Honduras that explore these different options.

IV. How much would it Cost to Increase Secondary Coverage? Simulations for El Salvador and Honduras

In this section we run cost simulations for El Salvador and Honduras. In El Salvador we simulate how much it would cost to achieve universal coverage (Gross Enrollment Rate - GER - of 100%) in lower secondary and wide coverage in upper secondary (70% GER). In Honduras we simulate costs to achieve broad-based coverage in lower secondary (70% GER) and, although not considered an urgent objective, a substantial expansion of upper secondary (50% GER). For each country we run multiple models representing the various

¹⁵⁴ Several studies have found rates of return to academic secondary are higher than those to vocational secondary, and the quality of learning outcomes is better in academic streams (Castro, Carnoy and Wolff, 2000; Heuser, Jacobs and Umansky, 2003).

policy options discussed above. This allows for comparison of cost-effectiveness between various policy combinations. It is important to note, however, that the simulations do not take into account possible quality differentials among options.

A. TARGETS AND MAIN ASSUMPTIONS OF SIMULATIONS

Table 3.4, below, summarizes the target indicators set for the simulations in the two countries. For both countries, targets are set below national goals (Education for All Plan in El Salvador and the Poverty Reduction Strategy in Honduras) in that our indicator is Gross Enrollment Rate (adjusted by the repetition rate) rather than the Net Enrollment Rate (NER) targets set by the countries. That said, as GER increases so, too, will NER provided that efficiency levels do not get worse at the primary level. We chose GER because it is an easier indicator to monitor - and is, therefore, more reliable - since it is unaffected by the cumulative impact of delays in completing primary education. While these goals are below national targets they would bring both countries up to par with other countries with similar per capita incomes.

Table 3.4: Current and Target Secondary GER (repetition adjusted) for Cost Simulations				
	El Salvador		Honduras	
	Current (2001)	Target (2015)	Current (2001)	Target (2015)
Lower Secondary Cycle (7 to 9)	69% (a)	100%	41% (c)	70%
Upper Secondary Cycle (10 to 12)	38% (b)	70%	22% (d)	50%

Source: The World Bank (2004 b, c, d). Notes (a) This results from an adjusted gross enrolment rate of 86% in the urban area (88.8/1.032, where 3.2% is the repetition rate) and 50% in the rural area (51.4/1.029); (b) this results from an adjusted enrollment rate of about 65% in the urban area (65.9/1.021) and 5% in the rural area (5.4/1.018); (c) this adjusted enrollment rate is obtained by dividing a GER of 48% in 2001 by 1.16 (16% being the repetition rate); (d) this adjusted enrollment rate is obtained by dividing a GER of 26% in 2001 by 1.18 (18% being the repetition rate).

Estimates of the fiscal impact of meeting the education coverage goals for both countries are based on the average current cost of providing service under each type of program. These costs include teacher salaries, other administrative costs incurred by the Ministries of Education, non-salary recurrent expenditures, plus an estimation of capital costs, when applicable.¹⁵⁵ For El Salvador, a scholarship and private sector subsidy were also estimated based, respectively, on the direct costs of schooling (fairly high in secondary), and on average teacher salary per student in the private sector (assuming the public subsidy covers teachers' costs). Since the emphasis of this analysis is on the fiscal impact of the different scenarios, the cost of privately funded and provided services is not estimated (only the public subsidy is). As stated earlier, there is no weight given in the

¹⁵⁵ The models suppose that for each incremental student in the traditional public education system, the government will have to build 2m² of school construction. This is based on parameters used in Honduras, which should also be valid for El Salvador. It is assumed here that this is not necessary under the alternative non-traditional programs, which usually work in local community facilities. For EDUCO schools, infrastructure costs are already included in the unit costs. It is clear that new infrastructure will not always be needed and using more intensively the existing one will also be an option in all types of education centers. The current infrastructure constraints in public upper basic and secondary education in Honduras and over-crowding in the public urban sector in El Salvador will, however, probably make this necessary as the school-age population increases.

modeling to possible differences in teaching quality or learning outcomes between the different programs included in the model.

Table 3.5 summarizes unit costs per education level by provider/financing mechanism:

Table 3.5: Unit Costs per Different Type of Public Provider and Financing Mechanism, US\$ (2002)		
Provider/Financing Mechanism:	Lower Secondary	Upper Secondary
El Salvador		
Traditional Urban/Rural	218	262 (a)
EDUCO rural	202 (b)	-
Distance Education Rural	168	168
Scholarships	206 (c)	237 (c)
Honduras		
Traditional Urban/Rural	280	280 (d)
CEB	196	-
Educadores/SAT	150	-
Telebasica	328	-

Source: The World Bank (2004 b, c, d); Notes: (a) This is a simplifying assumptions, should be slightly higher for rural schools; (b) Includes some infrastructure costs, admittedly small, which we could not disentangle since they are included in the MINED transfers to EDUCO with teacher costs. (c) For lower secondary, we proxy the value of the scholarship by the subsidy amount calculated by FUSADES; for upper secondary, the scholarship amount comes from FEPADE; (d) This is a simplifying assumption as costs should be higher in upper secondary and for rural schools.

B. SCENARIOS AND COST PROJECTIONS

This sub-section presents service expansion projections and cost estimates for achieving the 2015 target coverage goals in both countries. It is supposed that both countries advance at a steady rate from the present situation to reach these goals by 2015. The GER needed in each year is estimated from the total population projections and the relevant population group for each cycle. This enrollment quota also takes into account repetition, adding the projected number of repeaters to the total number of places necessary to achieve the “net” coverage rate desired for each year.

a) Scenarios

El Salvador

The policy options section above revealed several logical policy options for upper secondary expansion in El Salvador. These include private subsidized schools in urban areas, further expansion of school-based management in rural areas (EDUCO schools), quality-enhancing interventions, and expansion of the targeted scholarship program. The rationale for promoting both public and private delivery through public financing is based on the fact that private enrollment has been decreasing at a continuous trend since the

early 1990s creating unutilized capacity in the private sector in urban areas.¹⁵⁶ Additionally, teachers' salaries are slightly lower in the private sector while student performance in private schools is still higher than in public schools. While the expansion of public delivery has contributed positively to broad-based lower secondary expansion, further expansion could probably be undertaken in a less costly way by also making use of this unutilized private sector capacity. This rationale for public-private partnerships is not currently valid in Honduras, where there is no evidence of under-utilized capacity in the private sector.¹⁵⁷

Based on these arguments, four main costing scenarios are modeled for El Salvador (also summarized in Table 3.6). All scenarios assume that coverage expands simultaneously with advances in quality and equity. On the quality side, we assume that spending per student in lower and upper secondary increases in relation to per capita GDP such that El Salvador 'catches up' with the Latin American average (see Chapter IV). On the equity side, we assume an increasing share of low-income students is covered by scholarships. We do not model different scenarios based on different repetition rates, since repetition is already quite low at the secondary level in El Salvador. The four scenarios include:

1. A "status quo" scenario in the public sector delivery structure, with a decrease in the share of the private sector enrollment in the urban area. In this case, in future years, private provision is assumed to continue its decline (which has been going on since 1993) at a –1 percent yearly rate in grades 7 to 9 and –3 percent in grades 10 to 12. As a result of this assumption, since the total number of places must grow, the projections show a steady decline in the share of private places by 2015;
2. A "status quo" scenario in the public sector, with a constant share of the private sector, obtained through the subsidization of private schooling by the public sector;
3. A scenario where the relative importance of traditional and non-traditional provision (EDUCO, distance education) changes in the rural areas, with a decreasing share of the private sector; and
4. A scenario where the relative importance of traditional and non-traditional provision changes in the rural areas and the share of the private sector is maintained constant through public subsidization.

¹⁵⁶ While private schools represent about 45% of upper secondary institutes they only represent about 33% of the enrollment in 2002, versus about 45% in the early 1990s (the percent of private institutes remained similar). Small class size (about 13 students per classroom vs. 44 in the public sector in 2000) and low pupil-teacher ratios (about 20:1 vs. 26: 1 in the public sector in 2000) are indications of the excess-capacity that there is now in the private sector (see The World Bank (2004b)).

¹⁵⁷ Although the quality of the information is poor in the country and, therefore, trends in enrollment shares are difficult to monitor, it seems that private sector enrollment has kept on increasing, at least in absolute terms, representing a somewhat stable 30/25% proportion of total enrollment in secondary. The proportion of private institutes, about 50% of total institutes, has also been quite stable. Essentially we have a fairly stable share of small private schools.

Honduras

The discussion in the previous section on policy alternatives to expand secondary coverage suggests that in Honduras it makes sense to expand public secondary delivery while attempting to maintain the historic growth rate of the private sector as well as develop more alternative or cost-efficient delivery mechanisms. Because of this, the simulated models assume an increase in non-traditional delivery in rural areas and further development of basic education centers - two key strategic policy options for Honduras. Internal efficiency improvements, through lower repetition, are also simulated since there is sufficient space for efficiency improvements in the country. Quality improvements are also necessary in Honduras. These are modeled, in part, with the expansion of the *Telebasica* program in lower secondary.¹⁵⁸

Three main scenarios are envisaged in Honduras (also summarized in Table 3.8). In all of the scenarios for Honduras the growth rate of private provision is held constant at its historic rate of 3.6 percent a year, and all other necessary growth is assigned to the public sector.¹⁵⁹ As a result of this assumption the projections show a decline in the share of private secondary enrollment, to 19 percent of the total by 2015. The three scenarios are:

1. A “status quo” scenario in the public sector (no efficiency gains, same delivery structure);
2. A scenario with efficiency improvements (this scenario allows for a gradual increase in the levels of efficiency, decreasing the repetition rates from the initial level of, respectively, 16 percent in grades 7 to 9, and 18 percent, in grades 10 to 12, to half these levels by 2015); and
3. A scenario like scenario 2, except with changing delivery structure in lower secondary that allows for greater participation of alternative or more cost-efficient programs (Basic Education Centers (CEB), *Educadores/SAT*) and quality improvements (through *Telebasica*).¹⁶⁰

b) Cost Simulations

The results of the cost projections are summarized in Tables 3.6 and 3.7 for each of the scenarios.¹⁶¹

¹⁵⁸ TV Education is often used to strengthen lower secondary education in Central America.

¹⁵⁹ This might be considered over-optimistic: an increased effort to provide more public places and improve quality in the public sector could be expected to crowd out some of the private sector growth in the future. To the extent that this were to happen, the resulting fiscal cost estimates would be under-estimated. To be noted that the simulations were done on the basis of 2000 official data on relative public and private shares which were indicating a share of 30% for the private sector. It is very unlikely that this share was reduced from 30% to 25% in only three years, indicating deficient data either in 2000 or in 2003. If the rate of growth of the private sector was somewhat lower than 3.6%, then there was some crowding-out, which could lead Honduras to face similar issues than El Salvador in a longer run.

¹⁶⁰ Given that there are no alternative service provision programs for the diversified (upper secondary) cycle in the country, there are no sub-scenarios for that cycle (although the introduction of some form of distance education may have been simulated).

¹⁶¹ Complete analyses of the simulations can be found in The World Bank (2004 b, c, d).

El Salvador

A substantial increase in public financing is necessary to reach target enrollment rates in El Salvador. As a percentage of GDP, the combined cost of both lower and upper secondary cycles will need to go from 0.60 percent in 2002 to between 1.45 percent and 1.61 percent, depending on the scenario, in 2015. Overall, the upper secondary share of the education budget will need to increase to three or four times its current level, and the share for lower secondary (termed Upper Basic in El Salvador due to the basic education reform that included grades 1 through 9 in basic education) will need to double or more than double, depending on the scenario. It is also clear, however, that substantial savings are possible through the use of public subsidies to finance some urban private schools (scenarios 2 and 4).¹⁶² Scenarios 3 and 4, finally, also lead to savings in lower secondary by enrolling students in EDUCO schools where the unit costs and infrastructure costs of these schools are lower than those of traditional schools.

The share of distance education, however, does not need to grow in El Salvador, in fact in upper secondary it should decline, as there are currently more than enough spaces to cover all the appropriate target population groups.¹⁶³ The number of scholarships in traditional secondary, however, should expand to support more low-income students. Both of these changes increase the per pupil cost of upper secondary.

¹⁶² This is because if the public sector subsidizes private schools to keep their enrollment share it only covers the salaries of private teachers, while if the public sector has to absorb an increasing share of private sector enrollment (scenario 1) it needs to be paying for both the salaries of public teachers (higher than private teachers' salaries) and new infrastructure.

¹⁶³ The share is assumed to be constant at a 15% of public rural enrollment, as "needing to work" is a reason for non attendance for only 13% of the out-of-school children in rural areas and a share of the children non attending for "cost reasons" (too expensive) would be dealt with through scholarships. In the scenarios the share of distance education in upper secondary decreases to 30% and the share of traditional education increases to 70%, resulting in higher costs. To generate equity improvements the proportion of low-income students receiving a scholarship would be increased from 20 to 25%. The cost of the sub-cycle would increase because of the replacement of distance education by more expensive traditional one and the increased use of scholarships.

Table 3.6: El Salvador- Secondary Targets Simulation Results					
(US\$ 2002 millions)					
	2002	2005	2008	2011	2015
Target Indicators: Gross Enrollment Rate (minus repeaters) in 2015: 100% (lower secondary), 70% (upper secondary); Gross Enrollment Rate: 103% (lower secondary), 72% (upper secondary); Net Enrollment Rate (assuming unchanged repetition in all grades and same late entrant rate in primary): 71% (lower secondary), 46% (upper secondary)					
Assumptions: GDP real growth rate: 2002-2015: 3% School-age children growth: varying in time (upper basic: average yearly rate: 1.2%; secondary: average yearly rate: 1.3%) Inflation growth rate: 2002-2015: 3% Share of the Secretariat of Education's budget/GDP: 3.3% constant over the time-period Unit Costs: increase in time (at the GDP per-capita growth rate *2 for lower secondary; GDP per-capita growth rate *3 for upper secondary)					
Scenario 1: With same delivery structure in public sector, declining share of private sector in urban area and increased scholarship coverage <ul style="list-style-type: none"> Share of urban private/public sector in 2015: (lower secondary) 88% public; 12% private; (upper secondary) 88% public; 12% private Share of public sector enrollment covered by scholarship in 2015: 20% lower secondary; 20% upper secondary (base year: 0% lower secondary, 4% upper secondary) 					
GDP	14,283	15,608	17,056	16,637	20,976
Education Budget	471	515	563	615	692
Total Costs Lower Secondary (upper basic)	57.3	74.1	93.1	117.1	181.4
Total Costs Upper Secondary	28.3	40.7	60.3	89.9	157.4
Lower Secondary Costs/Education Budget	12.2	14.3	16.5	19.0	26.0
Upper Secondary Costs/Education Budget	6.0	8.0	10.1	14.6	22.6
Lower and Upper Secondary Costs/GDP	0.60	0.73	0.89	1.20	1.61
Scenario 2: Same as scenario 1 but with public subsidy to private urban schools to keep current enrollment share (80% public, 20% private in urban lower secondary; 66% public, 34% private in urban upper secondary)					
Total Costs Lower Secondary (upper basic)	57.3	73.3	91.6	114.5	175.2
Total Costs Upper Secondary	28.3	39.0	56.1	80.8	134.2
Lower Secondary Costs/Education Budget	12.6	14.2	16.2	18.6	25.0
Upper Secondary Costs/Education Budget	6.0	7.5	9.9	13.1	19.3
Lower and Upper Secondary Costs/GDP	0.60	0.71	0.86	1.17	1.47

	2002	2005	2008	2011	2015
Scenario 3: With different delivery structure in public sector, declining share of private sector in urban areas and increased scholarship coverage <ul style="list-style-type: none"> • Lower secondary: target public delivery structure: EDUCO: 85% (vs. 37% in 2002); distance education: 15% (vs. 15% in 2002). • Upper secondary: target public delivery structure: Traditional schools: 70% (vs. 54% in 2002); Distance education: 30% (vs. 46% in 2002). • Share of public sector enrollment covered by scholarship in 2015: 20% upper basic; 25% secondary • Share of urban private/public sector in 2015: 88% public; 12% private 					
Total Costs Lower Secondary (upper basic)	57.3	72.5	90.2	112.2	172.3
Total Costs Upper Secondary	28.3	40.9	61.0	92.1	165.6
Lower Secondary Costs/Education Budget	12.6	14.0	16.0	18.2	24.9
Upper Secondary Costs/Education Budget	6.0	7.9	10.8	14.9	23.9
Lower and Upper Secondary Costs/GDP	0.60	0.72	0.90	1.22	1.61
Scenario 4: Same as scenario above but with public subsidy to private urban schools to keep enrollment share (80% public, 20% private in urban lower secondary; 66% public, 34% private in urban upper secondary)					
Total Costs Lower Secondary (upper basic)	57.3	71.5	88.1	108.4	163.7
Total Costs Upper Secondary	28.3	39.2	56.7	82.7	141.6
Lower Secondary Costs/Education Budget	12.6	13.8	15.6	17.6	23.6
Upper Secondary Costs/Education Budget	6.0	7.6	10.0	13.4	20.4
Lower and Upper Secondary Costs/GDP	0.60	0.70	0.84	1.14	1.45

Source: The World Bank (2004b).

Honduras

The budget simulation analysis for Honduras suggests that this country will need to spend between 0.3 and 0.5 percent more of GDP on secondary education by 2015 to achieve broad-based coverage in lower secondary. A substantial expansion in upper secondary would require another 0.5% of GDP. As a percentage of GDP, the combined cost of both cycles will need to go from 1.05 percent in 2002 to between 1.78 and 2.11 percent, depending on the scenario, in 2015.¹⁶⁴ Overall, the secondary share of the education budget would be between 70 percent and 100 percent higher, depending on the scenario. Efficiency improvements (scenario 2) at the secondary level bring some savings. The expansion of alternative delivery programs (scenario 3) is the most cost-effective of the three scenarios. It also may respond best to the unique needs of Honduras' large rural and poor populations.

¹⁶⁴ It is interesting to note here that the cost simulations for Honduras and El Salvador are roughly equivalent despite the fact that the policy combinations simulated in the El Salvador scenarios are more ambitious and far-reaching. The main reason for this is that the growth rate of the school-age population in El Salvador is significantly lower than that of Honduras.

Table 3.7: Honduras- Secondary Targets Simulation Results (US\$ millions)

	2002	Aver. 2003-2005	Aver. 2006-2008	Aver. 2009-2011	Aver. 2012-2015	2015
Scenario 1: without efficiency gains and same delivery structure in lower secondary <ul style="list-style-type: none"> • Net Coverage Rate target in 2015: 70% (base: 41%) in grades 7-9 and 50% (base: 22%) in grades 10-12 • School-Age Population growth rate: 2.64% over the time-period • GDP real growth rate: 2003: 3.5%; 2004-2015: 4% • Inflation growth rate: 2003: 7%; 2004: 6%; 2005-2015: 5% • Share of SE education budget/GDP: 6.1% constant over the time-period 						
GDP	6473	7929	10355	13484	18390	20885
Public Education Budget	396	485	633	825	1125	1278
Total Costs Lower Secondary	42	57	87	128	187	240
Total Costs Upper Secondary	26	37	60	95	150	201
Total Costs Secondary	68	94	147	223	337	441
Total Costs Secondary /Education Budget	17.2 %	19.3%	23.2%	27.0%	29.9%	34.5%
Total Costs Secondary /GDP	1.05 %	1.18%	1.42%	1.65%	1.83%	2.11 %
Scenario 2: Same as scenario but with efficiency gains in both levels <ul style="list-style-type: none"> • Repetition rate decreases from 16% in 2002 to 8% in 2015 (lower) • Repetition rate decreases from 18% in 2002 to 9% in 2015 (upper) 						
Total Costs Lower Secondary	42	57	84	121	176	223
Total Costs Upper Secondary	26	36	58	90	139	185
Total Costs Secondary	68	93	142	211	315	408
Total Costs Secondary /Education Budget	17.2%	19.2%	22.4%	25.5%	28.0%	31.59%
/GDP						
Scenario 3: Same as scenario 2 but with changing delivery structure in lower secondary <ul style="list-style-type: none"> • Proportion of different public providers in 2015: <i>plan básico</i>: 26%; CEB: 39%; <i>Educadores</i>: 30%; <i>Telebasica</i>: 5% (from a base of: <i>plan básico</i>: 56%; CEB: 32%; <i>Educadores/SAT</i>: 10%; <i>Telebasica</i>: 1%) 						
Total Costs Lower Secondary	42	51	71	100	144	187
Total Costs Secondary	68	87	129	190	283	372
Total Costs Secondary /Education Budget	17.2%	17.9%	20.4%	23.0%	25.1%	29.1%
Total Costs Secondary /GDP	1.05%	1.10%	1.24%	1.40%	1.53%	1.78%

In conclusion, most of the enrollment growth in both countries will need to be funded by the public sector (national and/or international), through direct provision in traditional public centers, the set up of alternative service delivery mechanisms, and quality improvements. Additionally, the increase in public financing will need to be substantial. In El Salvador, supporting public/private partnerships appears to be a useful policy as

does expanding demand-side subsidies.¹⁶⁵ In Honduras, in contrast, the primary focus of the country should remain on providing infrastructure and expanding alternative delivery mechanisms. Efficiency improvements will also be particularly important in Honduras.

V. Conclusions

Expanding equitable coverage of quality secondary education is a critical priority for Central America. Secondary education is integral to both individual and national development and opportunities. The high rates of return to upper secondary suggest that this level of skilled labor is highly demanded on the labor market. While expanding the supply of educated citizens can have the effect of decreasing the rate of return there is significant reason to believe that skilled labor would attract foreign investment and promote growth in Central America enough to compensate or even outstrip any downward effect of additional supply.

Secondary education should expand in the most broad-based way possible to minimize adverse effects on educational and socioeconomic inequality and maximize growth. Because of fiscal constraints there will be some degree of trade-off between improvements in primary and secondary. Efficiency improvements in primary can reduce the extent of this trade-off but the necessary quality improvements at all levels will place additional burden on education budgets. At the very least, Nicaragua, Guatemala and Honduras should aim at encouraging broad-based expansion of lower secondary by expanding equitable access to secondary education for those children who are now completing primary. El Salvador, a country with higher and more equitable lower secondary enrollment, should now aim at expanding upper secondary (while also pushing for full transition of the poor and very poor to lower secondary).

In order to expand secondary, countries will have to address the unique combination of constraints that currently limit enrollment. In this chapter we found the key constraints in Central America to include high private and opportunity costs to schooling, lack of motivation due primarily to low relevance and quality of lower secondary, and supply shortages. Low test scores and low rates of return to lower secondary are testament to the low quality and relevance of this level, creating another barrier to enrollment. Supply of secondary schools has expanded in recent decades but remains a challenge in rural areas.

¹⁶⁵ This partnership could take the form of a public subsidy to some private schools to help them cover recurrent costs, such as teacher salaries, or to help them attend low-income students. In the first case, which is the one depicted in our scenarios, teachers' salaries of some private schools would be entirely financed by public funds which would allow them to keep on functioning and, hopefully, provide good quality education, retaining the existing upper-income students and attracting new middle-income students as coverage increases. The double advantage of this intervention would be that, on the one hand, the public sector would still be saving because of lower delivery costs in the private sector, on the other one, public sector delivery could be better targeted to lower income students, decreasing its middle-income bias. In the second case, closer to a voucher system, private schools would receive a subsidy that would cover the schooling life of a low-income student, and, as such, cover tuition fees and other private costs, as well as a portion of schools' salaries: less students, overall, would be covered, but this system would still make it possible to reduce the burden on the public sector (although to a lesser extent) and, above all, foster more socio-economic diversity in schools rather than the socio-economic segmentation that the first model would produce.

It is particularly acute at the upper secondary level. In all cases these constraints disproportionately affect lower income people. Lower income groups attend poorer quality schools, have lower rates of return, higher age by grade distortion, and face more acute economic and work-related barriers.

Because of the diverse range of barriers to equitable high-quality secondary coverage, countries need to address this regional priority with policy packages that respond to the unique needs of their specific country. In the policy options section and cost simulations section of this chapter we saw that the most effective and efficient policy combination differs by country. The main components of these policy combinations include:

- (a) An increase in public financing for secondary education. This is a key condition for broad-based secondary coverage in all countries. Simulations undertaken for El Salvador and Honduras show that reaching satisfactory coverage targets in both countries will require an increase by about 1 percent of the secondary education share in terms of GDP over the 2002-2015 time period.
- (b) An increase in traditional public supply. The bulk of secondary expansion should be provided by public sphere in Central America although innovations in public service delivery are a promising form of public supply. Promoting basic education centers, with all three sub-cycles of basic education, is a promising intervention that has been relatively successful in El Salvador. In rural areas, promoting school networks up to grade 9 or even grade 11 or 12 and/or community-based schools could also be a viable cost-efficient option.
- (c) An increase in public-private sector partnerships. In countries where private schools are more cost-effective than public schools there may be scope for encouraging public financing/private delivery systems. In practice, this may mean covering part of the recurrent costs of private schools to have them accept middle or low-income students. The presence of idle capacity in the private sector, as in El Salvador, makes these partnerships more promising financially, since little new investment is necessary. The El Salvador simulation suggests that this is a good policy option for that country.
- (d) An increase in non-traditional public supply, such as distance education, in rural areas, can ensure coverage with flexibility. A program like *Educadores* seems to be particularly relevant in this context, but others alternative education programs, in urban areas, for example, should be further explored. An accreditation system, ensuring comparable quality between traditional and non-traditional delivery models, needs to be put in place. Non-traditional supply appears to be a valid option for all four countries.
- (e) An increase in the quality and relevance of secondary education. Improving the relevance of lower secondary is particularly urgent in all countries. All the measures suggested in the previous chapter on education quality apply to this sub-cycle. Upper secondary quality and its relevance to labor market needs should

also be improved. Countries need to think carefully about the structure and main objectives of secondary, particularly in terms of the age-old debate on technical-vocational versus academic secondary. This subject, however, has not been discussed in this report.

- (f) An increase in demand-side subsidies, including targeted scholarship programs and conditional and targeted cash transfers. These programs would be particularly useful in countries with relatively high tuition levels or other private costs of schooling.

Chapter IV: A Review of Education Expenditure in Central America

How much money countries devote to their education systems, how that money is distributed between different education levels and programs, and the efficiency with which it is used to promote the final objectives of education are critical areas to understand and assess. The amount, distribution, and efficiency of education expenditure affect educational coverage, quality, and equity.

In this chapter we look at some of the different aspects of educational expenditure. The first section looks at the overall level of public education funding in the four Central American countries, comparing them with the Latin American average and Costa Rica. The second section examines how public education funding is distributed across education levels. The third section looks at equity challenges in the region that arise from per student expenditure and enrollment distributions at the various education levels. The fourth section deals with household education expenditure. The fifth section investigates the efficiency of education spending, focusing in on cost-effectiveness in the four countries and on the effectiveness of the distribution of expenditures across spending-type. Finally, the sixth explores the issue of external education funding. The conclusion of the chapter reviews main findings and presents several areas of intervention.

I. Public Education Spending: Levels and Evolution

While government spending on public education has been growing over the past decade in Central America it is still low both as a proportion of GDP as well as on a per-child basis.

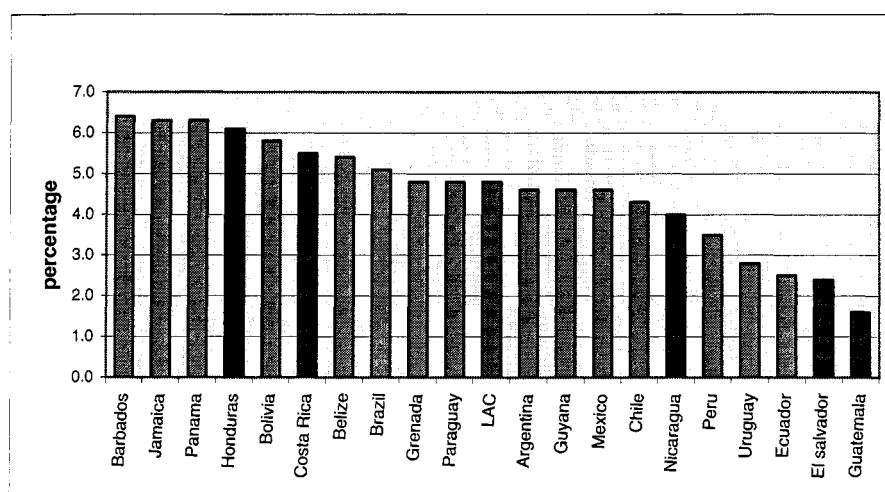
Table 4.1: Public Education Expenditure in Proportion of GDP (%) (a)									
	1995	1996	1997	1998	1999	2000	2001	2002	2003
El Salvador		2.3	2.5	2.6	2.7	2.9	3.1	3.3	3.2
Guatemala ((b))	1.7	1.6	1.8	2.2 (1.5)	2.5 (1.6)	2.6 (2)	2.6 (2.3)	2.5 (2.2)	2.6 (2.5)
Honduras	4.3	4	4.2	4	5.4	6.1	7.2	7.2	
Nicaragua (c) ((d))	4.9 (2.8)	4.9 (2.7)	5.6 (3)	5.4 (2.9)	6.8 (3.8)	6.7 (3.7)	6.4 (3.5)	6.5 (3.8)	6.9 (4)
Costa Rica (e)	3.5	3.9	3.8	3.8	3.7	4.1	4.5	4.8	

Notes:(a) Public expenditure on education includes all public funds channelled to the educational system through public institutions, therefore including both national and external public funds. (b) New classification (only education expenditure, and excludes social security and public debt). (c) with official GDP data: (d) with "unofficial" GDP data. There is some agreement that GDP figures may be underestimated by as much as 70%, this second data series reflects this underestimation (e) Public expenditure includes public funds channelled only through the Ministry of Education (including both national and external public funds). Sources: El Salvador: WB WDI and LAC Database; *Ministerio de Hacienda*; CEPAL population estimates Guatemala: Banguat, Ministry of Finance, and Planning Unit, Ministry of Education; 2001-2003: CIEN. New classification: MFP and Bank of Guatemala. Honduras: 1990-1996: "*Estudio Sectorial Plan Decenal*"; 1997-1998: UNAT 2001; 1999-2002: SIAFI; IMF Financial Statistic different volumes Nicaragua: 1995-2000: MCHP and Central Bank, as reported in Arcia (2003); 2001-2002: Directorate of Finance, MECD. Costa Rica: Central Bank, Ministry of Finance and ICEC (National Statistical Office).

Table 4.1 above presents data on public education expenditure as a ratio of Gross Domestic Product (GDP) for the four countries under analysis as well as for Costa Rica from 1995 through 2003.¹⁶⁶

Education expenditure is growing, but it is still too low in Central America. The proportion of GDP devoted to education has been growing throughout Central American since the mid-1990s. This reflects growing prioritisation of education. Education spending does vary considerably, however, across countries, being particularly high in Honduras (7 percent) and substantially lower in El Salvador, Nicaragua, and Guatemala (between 2.5 and 4 percent). Honduras is also the country where education spending has increased the most in the last decade. El Salvador, Nicaragua, and Guatemala all spend significantly less than the Latin American average (see Figure 4.1) - close to 5 percent of GDP - and less than comparison countries with similar per capita GDP.¹⁶⁷

Figure 4.1: Education Spending as a Proportion of GNP, 1999/2000



Source: WB, WDI database, 2003

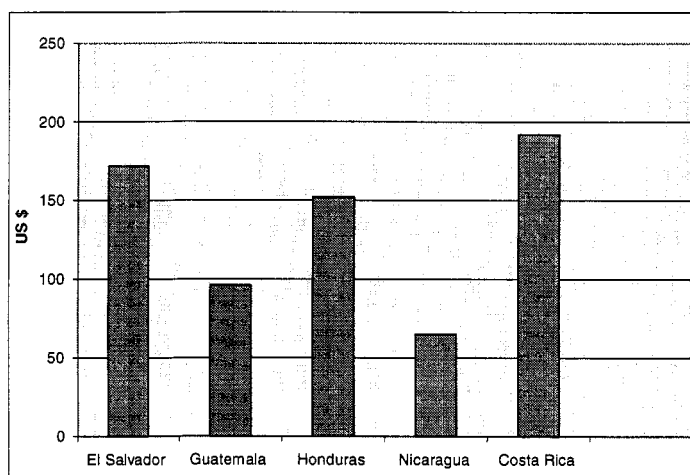
On average, Latin American countries spend roughly US\$300 on public education each year for every age-appropriate child. Central American countries spend much less (see Figure 4.2). The equivalent figure in Nicaragua, for example, is less than US\$70. Much of the difference is due to lower per capita income in Central America (Honduras spends more than the Latin American average in terms of education spending as a percentage of

¹⁶⁶ Public education spending includes all education spending from any public institution (except for Costa Rica where only Ministry of Education spending is reported). In Central America, non-Ministry of Education spending on education is not insubstantial (15 to 30 percent). Most public primary and secondary education is provided by Ministries of Education, but other educational levels such as tertiary, adult or special education are frequently co-financed and co-provided with other institutions. Primary and secondary is also, at times, financed and executed by institutions outside of the Ministries of Education such as by social funds.

¹⁶⁷ An average expenditure ratio of about 4.2 percent was reported for a sample including Philippines, Jordan, Bolivia, Algeria, Peru, Colombia, Paraguay and Ecuador (based on UIS 2000 data).

GDP, but their yearly spending per child is far below the Latin American average due to lower per capita income), but lower priority ratios can also explain it.

Figure 4.2: Education Expenditure per School Age Population, 2001/2002



Source: Table 4.1 and Household Surveys.

Because of the sharp difference in per capita income between Central American countries and some of the more affluent countries in Latin America, Central America should aim towards spending an equivalent proportion of GDP rather than equivalent per student expenditure. In this way Central American countries would spend as much per child as other Latin American countries with similar per capita GDP. Of course, the effectiveness and efficiency of education spending is, in

the end, more important than the dollar amount of per child spending but the lack of investment in education in Central America is problematic on its own.

In sum, in spite of a positive evolution since the mid-1990s in terms of education expenditure vis-à-vis GDP, Central American countries still tend to spend relatively little on public education in terms of GDP or income per-capita. An exception is Honduras, where, however, there are major efficiency issues. Expenditure per child is lower than US\$ 200 in all countries and is below US\$ 100 in Guatemala and Nicaragua.

II. Disaggregation of Educational Expenditures by Education Level and per-Student and Child Unit Costs

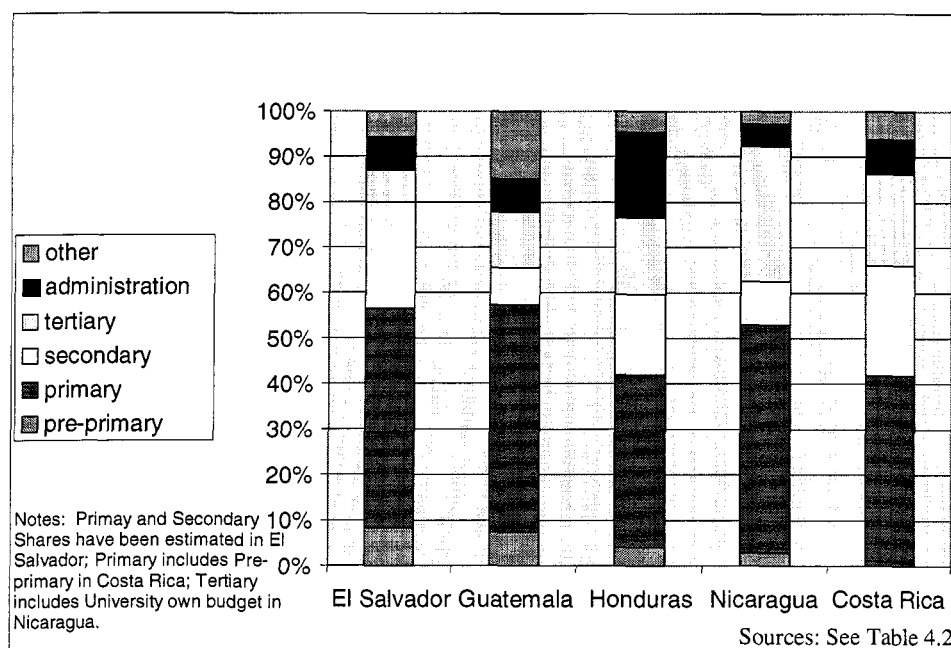
This section disaggregates public educational investment by level (primary, secondary and tertiary) and then examines per-child and per-student expenditure at each of these levels. The analysis reveals that while primary education logically occupies the bulk of Ministries of Educations' budgets, spending on secondary appears to be low while spending on tertiary is high in most Central American countries. Inadequate per-student and per-child spending is particularly apparent in Nicaragua.

Table 4.2 and Figure 4.3 show estimates of public education expenditure in 2002 by education level. Several factors make precise figures difficult to identify. Non-Ministry of Education spending is often impossible to divide by level, as are capital expenditures. Again, Costa Rica is offered as a point of comparison.

Table 4.2: Functional Disaggregation of Expenditure (in 2002 US \$ millions, unless otherwise specified)								
	Pre-primary	Primary	Basic	Secondary	Tertiary	Admin.	Other	Total
El Salvador (a)	31.6		247.6	27.9 (b)	27.1	27.8	22.0 (c)	384
El Salvador (d)	37.5		284.5	49.2		37.7 (e)	62.0 (f)	471
Guatemala (g)	36.8	250		40.4	61.5	36.5	74.5 (i)	500
Guatemala, 2001(g)	37.0	259.9		40.4	74.5	36.9	71.1 (i)	520
Honduras (h)	16.0	150.1		70.1	67.1	74.5	18.2 (i)	396
Honduras, 2001 (h)	15.1	156.2		69.2	72.0	55.1	12.3 (i)	380
Nicaragua (l)	4.1	72.0		13.6	43.0 (m)	7.1	3.9 (n)	144
Nicaragua (o)	6.0	83.0		13.9	43.0 (m)	7.1	5.0 (n)	158
Costa Rica (%) (p)		41.8 (q)		24.2	20.2	7.6	6.2	100

(a) All recurrent public expenditure channeled through public institutions is included; (b) Includes grades 10-12; (c) Includes the portion of recurrent costs financed through external funds, which could not be allocated to any of the levels; (d) Includes all public expenditure channeled through public institutions; (e) Includes amount directed to Education Development; (f) Includes investment expenditure that cannot be allocated across levels, as well as the Teacher Welfare and Strengthening of Access to Education programs; (g) Includes all recurrent public expenditure channeled through public institutions + unallocated capital expenditure; (h) Includes all recurrent public expenditure channeled through the Ministry of Education + unallocated capital expenditure. 2002 is budget; (i) Includes all investment and recurrent expenditures that cannot be allocated across levels; (l) Includes all recurrent public expenditure channeled through the Ministry of Education; (m) Includes all university expenditure (transfers and non transfers); (n) Includes adult education, special education and teacher training; (o) Includes all public expenditure channeled through the Ministry of Education; (p) Only MINED public expenditures; (q) Includes pre-primary. Sources: see Table 4.1.

Figure 4.3: Functional Expenditure Disaggregation, 2002



Primary education is the bulk of education budgets in all countries. All four countries spend between 40 and 50 percent of the public education budget on primary education. This high share is logical in that primary education is clearly the first priority of all countries and it has by far the largest enrollment.

Low shares spent on secondary. In contrast, the share directed to secondary education is much lower, fluctuating between roughly 8 and roughly 25 percent of the total public education budget. Secondary shares are higher in El Salvador and Costa Rica where secondary is more prioritized and has higher enrollment rates. All Central American countries spend a smaller proportion on secondary than the Latin American average, which is about 30 percent.¹⁶⁸ This fact is probably both a contributing factor toward and a result of low enrollment in secondary in Central America (see Chapter III).

Relatively high shares are spent on tertiary in Central America. The tertiary share fluctuates substantially across countries, ranging from 7 percent in El Salvador to 30 percent in Nicaragua.¹⁶⁹ It is interesting to note that the three poorest countries spend as much or even more on tertiary as they do on secondary.¹⁷⁰

Administration costs are likely to be under-estimated in all countries in that some administrative costs are covered by institutions outside the Ministries of Education and are, therefore, not easy to track. From the limited data we have, however, it appears that administration costs are relatively contained in all countries, except in Honduras where more is spent on educational administration than is spent on secondary education.

Per-child and per-student spending. Missing from the previous information on how education expenditure is divided by level is an understanding of what this means for per child and per-pupil public expenditure. As we've seen throughout this paper enrollment rates are very different in primary, secondary and tertiary institutions. By comparing recurrent public expenditure for each of the levels to the number of school-age children and students enrolled in the public system for each of these levels we obtain expenditure per school-age population and per student by education level, two indicators that provide a more insightful picture of the actual level of resources available for each level. Figure 4.4 (and Table 10.1 in Annex X) compare expenditure per child and student across levels and countries.

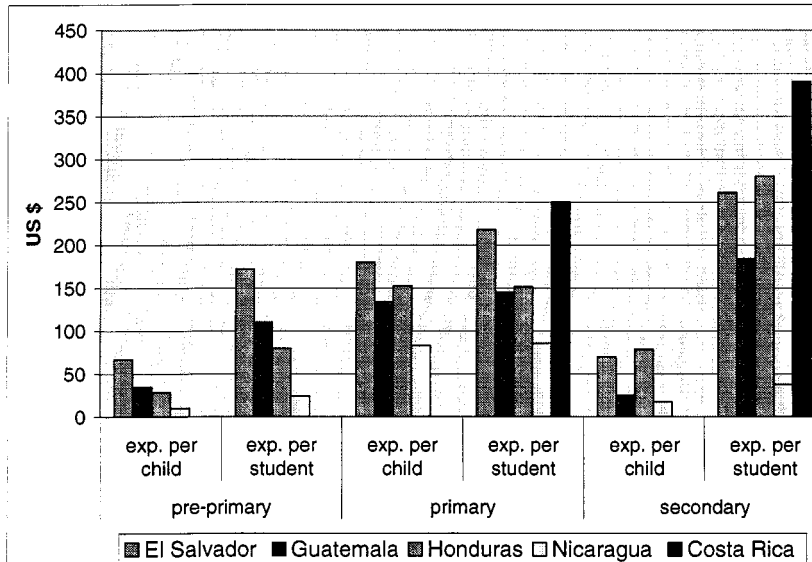
¹⁶⁸ See ECLAC (1994, 1996).

¹⁶⁹ In Nicaragua, education level budget disaggregation defined tertiary education considered quite broadly, contributing, in part, to the high percentage of spending identified as going to this level.

¹⁷⁰ Argentina, Chile, Uruguay and Colombia spent approximately 20% of their education budget on tertiary education in the time-period 1994-2000 (see various World Bank Country Public Expenditure Reviews). This is in the range of what these three, much poorer countries, spend.

Figure 4.4: Expenditure per Child and Student, 2001/02

(Source: Table 10.1 Annex X and Household Surveys)



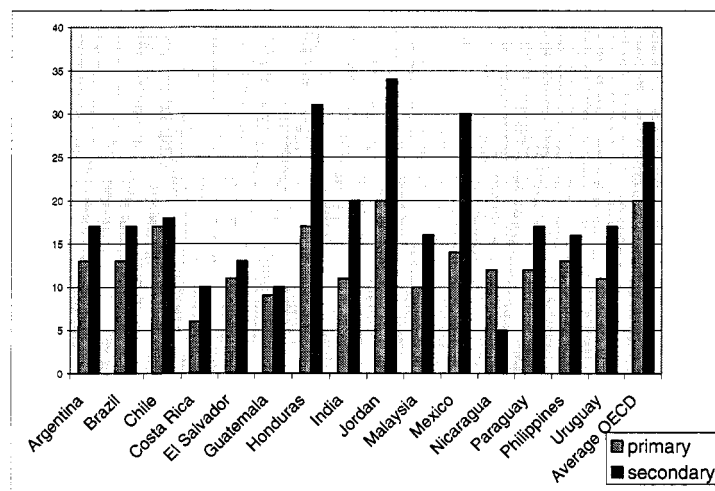
child. As repetition rates increase expenditure per-student will drop relative to expenditure per-child. Similar expenditure per child and student in Honduras and Nicaragua suggests high repetition rates. Reducing repetition would increase per student expenditure, funds that could be invested in improving the quality of education and ensuring that all students complete the cycle. The higher per-student expenditure in Guatemala, in spite of high repetition rates, reinforces the continuing unmet challenge of universal primary enrollment in the country¹⁷¹.

Per-student expenditure at the primary level has increased in most countries over the last several years.¹⁷² Significant rises in teachers' salaries explains, to a large extent, this increase in per-pupil primary expenditure. In spite of this increase, however, an international comparison suggests that all Central American countries, except Honduras, spend below average on primary given their per-capita income (Figure 4.5).

¹⁷¹ For El Salvador, expenditure per student is higher because we are considering basic education, where there are drop-outs, instead of primary.

¹⁷² Per-pupil public primary expenditure rose roughly 20 percent in Guatemala in the 1996 to 2001 time period (CIEN, 2003), 40 percent in Costa Rica between 1998 and 2002 (Sanigest, 2003) and 35 percent (in basic education) in El Salvador in the 1996 to 2002 time period (The World Bank, 2004b).

Figure 4.5: Public Education Expenditure per Student in % of GDP per capita, 2000



Source: OECD (2002) and Table 10.1 – Notes: Central America 2002 or 2001 data

Secondary. As expected, per-pupil expenditure is higher for the secondary level than for the primary level reflecting lower coverage and the greater expense of educating people at this level. Secondary typically requires teachers with greater subject knowledge, more complex learning materials and other inputs of significant cost. Nicaragua is, however, an exception.

Figure 4.4 shows that per-student spending in Nicaragua is higher in primary than in secondary. One explanation for the low per-pupil unit costs of secondary in Nicaragua is simply that the country has invested insufficiently at this level. A second explanation relates to the relative priority given to coverage versus quality in secondary education: although expenditure per-child in secondary is also lower in Nicaragua than in the other countries, the gap is much greater for expenditure per-student, suggesting that the limited resources devoted to secondary have been focused at expanding enrollment rather than spending more on each child who is enrolled. The low per-pupil spending is sure to have clear implications on secondary education quality.

In all countries expenditure per child is dramatically lower than expenditure per pupil at the secondary level. This reflects the severe secondary coverage gap discussed in the previous chapter and underscores again the importance of the priority of increasing secondary enrollment in a broad-based manner.

Notably, there has been little or no gain in per student expenditure at the secondary level over the last several years in most of Central America.¹⁷³ Expanding secondary coverage, although still limited, contributes to explain this stagnation.

Tertiary. Finally, although not shown in the graph, per-student expenditure is particularly high at the tertiary level (see Table 10.1 in Annex X). In Honduras, for example per-student public recurrent expenditure is US\$ 933 at the tertiary level whereas the equivalent figure for per-child expenditure is US\$ 140. Certainly, unit costs at the tertiary level are bound to be higher than at the secondary or primary level but this huge public investment in tertiary education is socially regressive as will be discussed further below.

¹⁷³ Secondary spending has stagnated in Nicaragua, Guatemala and El Salvador since 1998.

III. Equity Challenges in Terms of Per-Capita Education Expenditure

The distribution of public expenditure across socio-economic strata, geographic areas, and other divisions has important implications on the equity of education delivery. This section looks at how per child spending at the various educational levels compares with how enrollment is distributed across income groups at those same levels. This analysis reveals that much of educational provision in Central America is socially regressive in that it invests disproportionately in children of wealthier backgrounds. This is particularly true at the secondary and tertiary levels, whereas public primary provision is relatively progressive. This fact raises serious equity concerns since public education is financed with general tax revenues.

The section first looks at the distribution of public enrollment according to income quintiles in order to determine the levels of participation of the different income quintiles in the sector. This analysis is followed by a calculation of levels and distribution of spending across income groups, based on unit costs per educational level.

A. THE DISTRIBUTION OF PUBLIC ENROLLMENT AND SCHOOL-AGE POPULATION ACROSS INCOME QUINTILES

There are many fewer poor children in public secondary and tertiary schools than in public primary schools. The lines in Figure 4.6 represent the proportion of public enrollment that serves children from each income quintile (see also Tables 10.2-10.5 in Annex X). In primary schools and pre-primary schools the poorer income quintiles tend to have the highest proportion of enrollment.¹⁷⁴ This is because children from wealthier families are more likely to enroll their children in private schools. At the secondary and tertiary levels, however, enrollment is concentrated in the top income quintiles. Confirming the results presented in Chapter III, the distribution of secondary enrollment appears to be concentrated in the middle-upper class in all countries (quintile 4), with El Salvador having a somewhat more balanced distribution favoring the three middle quintiles. At the tertiary level the highest proportion of students come from the wealthiest quintile. These patterns are true for all four Central American countries.

Public delivery is well targeted in primary, but poorly targeted in secondary and tertiary. Public education, which should provide access to schooling for all children, particularly those whose families can not afford to send them to private schools, is fulfilling its role fairly well at the primary level but much less satisfactorily in secondary and tertiary education. The situation is aggravated when we compare the distribution of public enrollment with the distribution of school age population by income quintiles.

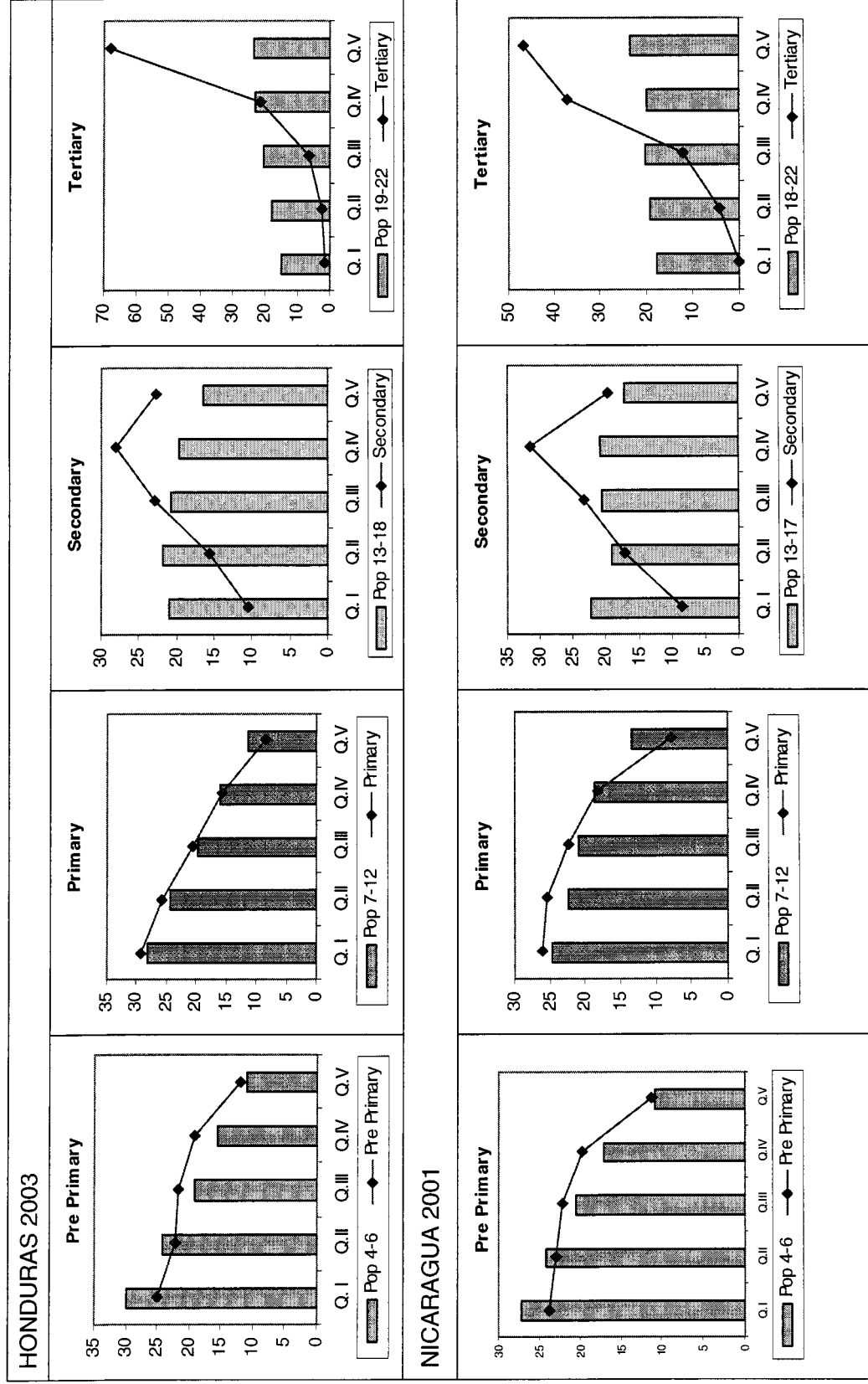
¹⁷⁴ Each of the enrollment levels, which were produced on the basis of the household surveys for distinct years, are not the ones that were used for the calculation of the expenditure per student, where MINED official data were used for sometimes also different years. Discrepancies can then occur when recalculating unit costs on the basis of these enrollment data (in particular in Honduras). Note that the 2003 household survey was used in Honduras instead of the 2002 one because it is the only survey which differentiates between private and public enrollment.

It is usually the case that school-age population, in particular in the younger age range, is not distributed evenly across quintiles, but has a higher incidence in the lowest income quintiles. This is largely because poorer families tend to have more children. By comparing the relative public enrollment shares of each quintile with its school-age population share, we capture with more precision how well or badly targeted is public delivery.

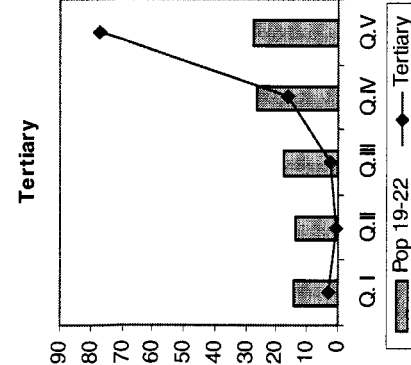
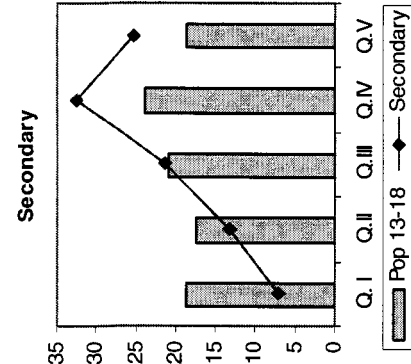
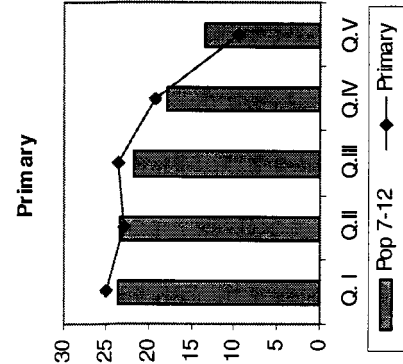
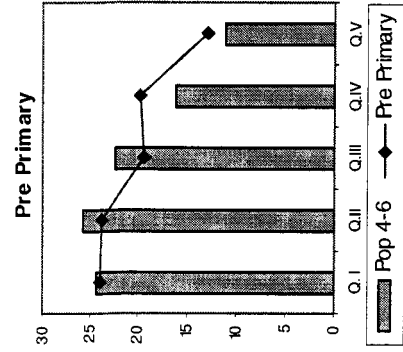
The bars in Figure 4.6 represent the proportion of the age-appropriate population that belong to each income quintile. This Figure illustrates that at the primary level the two lowest income quintiles tend to make a more than proportional use of public delivery, compared to their school-age population share (although this is less true for Guatemala); while the highest quintile makes a less than proportional use of public delivery, compared to its school-age population share (and, by converse, it makes a much more proportional use of private delivery in all countries – although these figures are not shown here). As a result, we are not surprised to find a gross enrollment rate roughly equitably distributed across quintiles in all countries (with the exception of Guatemala), as indicated in Chapter I.

In contrast, at the secondary level, the two lowest income quintiles make a less than proportional use of public delivery, compared to their school-age population share (although this is less true for El Salvador); while the fourth quintile makes a much more than proportional use of public delivery, compared to its school-age population share (also less so in El Salvador). The highest quintile also tends to make a more than proportional use of public delivery although less so because of its much more than proportional access to the private sector (see Chapter III). As a result, the secondary gross enrollment rate is fairly inequitably distributed across quintiles, as shown in Chapter I (again, less so in El Salvador). Finally, the highest quintile makes a much more than proportional use of public delivery at the tertiary level.

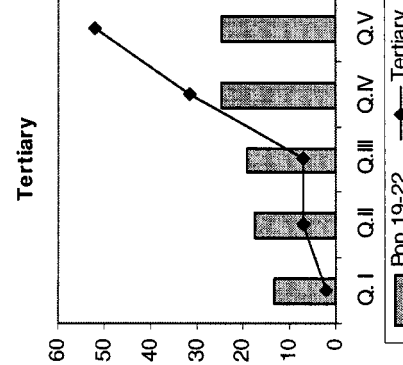
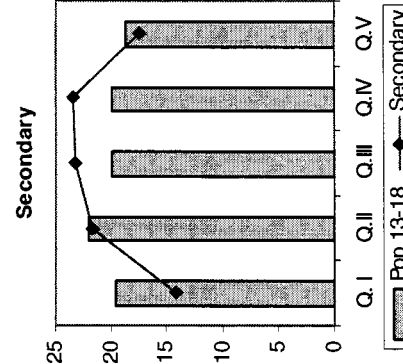
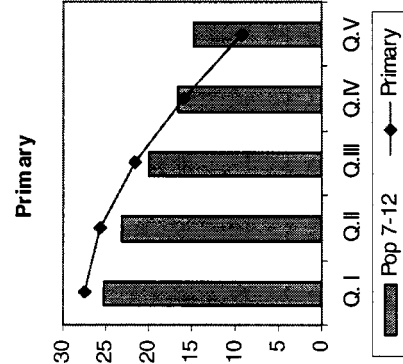
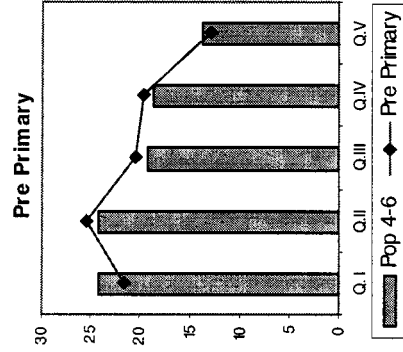
Figure 4.6: Distribution of public enrollment and population shares by income quintile and levels of education



GUATEMALA 2000



EL SALVADOR 2002



Source: Household Surveys.

B. PUBLIC SUBSIDY PER SCHOOL-AGE POPULATION BY QUINTILE

In Tables 4.3 and 4.4 we calculate the public subsidy per school-age population by quintile for each country and for primary and secondary (where we have the most reliable unit costs). We find that while the public education subsidy at the primary level is slightly progressive (i.e. invests more heavily in the poor), the public education subsidy at the secondary level is tremendously regressive, awarding three to four times the amount of public dollars to wealthy children as it does to poor children.

To calculate the public education subsidy for different income quintiles at different education levels we make the imperfect assumption that per-student expenditure per student across quintiles is uniform.¹⁷⁵ We then divide total education expenditure across income quintiles according to their relative public enrollment share. Finally, we obtain per-capita expenditure by dividing the amount per quintile by the school-age population of each of the quintiles. The tables show the distribution of public spending for primary and secondary education, the percentage of the spending that is captured by each quintile and the resulting per capita subsidies.¹⁷⁶

The primary education public subsidy is progressive but the secondary education subsidy is regressive. The per-capita public subsidy at the primary level is fairly similar across the first four quintiles (this is because the enrollment share generally parallels the population share by income quintile as seen above at the primary level). This is somewhat less so in Guatemala. In general across countries, the public primary subsidy is lower for the richest quintile because of their lower enrollment proportion. Therefore, in per capita terms, public primary spending continues to be progressively distributed, although not highly so. The situation changes quite dramatically at the secondary level, where, in all countries except El Salvador, the per capita public subsidy is three or even four times higher for the fourth than for the first quintile (and about 3 times higher for the fifth quintile) due to the disconnection between enrollment and population shares. In El Salvador, the public subsidy is relatively more evenly distributed, although it is still regressive.

Fair access to primary schooling does not mean fair access to quality schooling. Although the public subsidy seems to be relatively progressively distributed at the primary level, and the gross enrollment rate is quite homogenous across quintiles, there are still reasons to believe that even at the primary level public education expenditure is not distributed progressively enough. Unit costs are higher for poor students than they are

¹⁷⁵ In fact, the different quality of the schools attended by the poor and the possible targeted interventions to the poor should both be considered and would alter unit costs per quintile.

¹⁷⁶ Care should be given when comparing the total amounts per level with the ones of Table 4.2. These total amounts have been obtained by multiplying expenditure per student by the total public enrollment as reported in the household surveys. Additionally, the year of the per student expenditure and of the enrollment do not always coincide exactly. Discrepancies occur in particular at the secondary level and for both Honduras (whose enrollment figures were particularly high in 2003) and El Salvador (where the unit cost in upper secondary is multiplied by the enrollment of the whole secondary cycle). In any case, the distribution of the public subsidy across quintiles is what really matters here.

for wealthy students as poor children do not have the cultural and economic capital provided to wealthy students in their homes and communities. Concretely, poor children need more learning materials and better teachers than wealthy students in order to make up for disadvantages they bring with them to the classroom. Recent analysis showing that poor students are much more affected by educational inputs (teacher quality, educational infrastructure, etc) confirms this.

In contrast, available evidence suggests that the public schools poor children attend tend to be of lower quality than those that wealthy children attend. High dropout and repetition rates in poor students signal that education systems are frequently failing these children. Lower rates of return for the poor further indicate that their schools may be of inferior quality. It is likely, in fact, that the assumption we made to calculate the public subsidy estimates is problematic and that per-student education expenditure is lower, on average, for poorer students.

If this is the case, our analysis is over-estimating the progressiveness of public expenditure. If we assumed that public expenditure was about 20 percent lower in the first quintile (and 5 percent higher in the remaining four quintiles to ensure a similar average expenditure per student), we would find that there is only a marginal difference between the first and fifth quintile and that the public subsidy per capita is higher for the middle-class than for the poor in all countries.

Poor students need more public investment at the primary level. Public delivery, therefore, provides fair access to the poor in primary as judged by equal proportionally correct enrollment in primary according to the age-appropriate population (although this is somewhat less true in Guatemala). But, judging from educational outcomes of the poor (in particular in terms of completion), public education delivery is not necessarily providing fair quality schooling. Although expenditure may not be the first determinant of quality (many improvements, in particular related to management, do not require more funds), there is ground for ensuring higher expenditure per poor student (in terms of teaching materials, teacher education, etc). Furthermore, in Guatemala, fair access to primary schooling, in particular for the second quintile, has still not been achieved.

Broad-based expansion of coverage is needed in secondary education in order to correct the current regressive public subsidy. At the secondary level, the public subsidy per capita is already very inequitably distributed, as are gross enrollment and completion rates. If our calculations over-estimate the public subsidy to the poor than this inequality is even greater. The key issue for the secondary level is how to provide wider access to schooling for the middle-lower and lower classes. This topic has already been dealt with in Chapter III. Essentially, in all Central American countries, greater public spending at the secondary level should be funneled into expanding access to quality secondary to, at least, the three middle quintiles - as is currently the case in El Salvador.

Table 4.3: Per-Capita Public Subsidy in Primary						
	Q. I	Q.II	Q.III	Q.IV	Q.V	Total
HONDURAS 2003						
Public Subsidy	47,780,247	42,138,533	33,808,373	25,535,896	13,623,937	162,886,986
% of Public Subsidy	29.3	25.9	20.8	15.7	8.4	100.0
Per Capita Public Subsidy	144.6	146.6	145.5	136.2	101.6	139.0
NICARAGUA 2001						
Public Subsidy	19,811,143	19,287,171	16,952,143	13,823,743	5,962,286	75,836,486
% of Public Subsidy	26.1	25.4	22.4	18.2	7.9	100.0
Per Capita Public Subsidy	92.1	99.2	93.1	84.9	50.9	87.0
GUATEMALA 2000						
Public Subsidy	63,667,050	58,416,600	60,087,750	49,142,100	24,629,100	255,942,600
% of Public Subsidy	24.9	22.8	23.5	19.2	9.6	100.0
Per Capita Public Subsidy	139.5	128.8	142.5	141.2	94.0	131.8
EL SALVADOR 2002						
Public Subsidy	50,190,937	46,810,119	39,300,239	29,204,823	16,871,860	182,377,979
% of Public Subsidy	27.5	25.7	21.5	16.0	9.3	100.0
Per Capita Public Subsidy	213.0	215.8	209.9	187.9	121.7	195.3

Table 4.4: Per Capita Public Subsidy in Secondary						
	Q. I	Q.II	Q.III	Q.IV	Q.V	Total
HONDURAS 2003						
Public Subsidy	10,142,564	15,260,341	22,320,651	27,306,573	22,158,753	97,188,881
% of Public Subsidy	10.4	15.7	23.0	28.1	22.8	100.0
Per Capita Public Subsidy	47.9	68.9	106.0	136.5	132.0	96.1
NICARAGUA 2001						
Public Subsidy	1,203,676	2,435,933	3,320,749	4,515,087	2,814,707	14,290,152
% of Public Subsidy	8.4	17.0	23.2	31.6	19.7	100.0
Per Capita Public Subsidy	8.1	19.2	24.5	32.7	25.0	21.6
GUATEMALA 2000						
Public Subsidy	2,993,312	5,536,744	8,838,992	13,437,704	10,481,560	41,288,312
% of Public Subsidy	7.2	13.4	21.4	32.5	25.4	100.0
Per Capita Public Subsidy	9.8	19.5	26.0	34.7	34.3	25.4
EL SALVADOR 2002						
Public Subsidy	14,255,336	21,916,623	23,524,654	23,786,184	17,712,328	101,195,125
% of Public Subsidy	14.1	21.7	23.2	23.5	17.5	100.0
Per Capita Public Subsidy	86.2	117.8	140.2	141.6	112.2	119.8

Source: Table 4.2 and Household Surveys.

Reduction in the public subsidy for tertiary education. Finally, due to the highly regressive nature of the public subsidy in tertiary education it would make sense in countries such as Honduras, Nicaragua and Guatemala, which spend as much or more in tertiary as they do in secondary education, to decrease the amount of public expenditure at that level. This is, however, a very sensitive and political subject in Central America and will be difficult to modify in the short or medium term. Ideally, an effective system would be implemented in which students who could afford to do so would contribute more co-financing at public universities and the share of quality private universities would expand. This is easier said than done given the pressures that exist in all countries for the financing of the public university system. This measure seems, however, unavoidable if countries wish to significantly improve the equity of public education subsidies.

IV. Private Household Education Expenditures Also Demonstrate Inequitable Education Financing

An important factor that contributes to low enrollment of the lower income quintiles - particularly at the secondary level - both in the public and private sector, is the magnitude of both direct and indirect private costs of schooling. This section looks at the magnitude and composition of household costs of education. Included in private household costs are such things as school fees, learning materials and books, exam fees, and uniforms.

Tables 4.5 and 4.6 show annual private household expenditures on education by income quintile in real terms and as a proportion of annual household income.¹⁷⁷ They show that, while contained at the primary level, private costs to schooling are more substantial at the secondary level.

Private household education costs can be prohibitive to the poor, particularly in Guatemala and El Salvador. In Guatemala, the financial burden of secondary education is heavy for the first (poorest) quintile and substantial for the second one. In El Salvador, the burden is substantial for the poorest quintile. Compounding this difficulty is the fact that most families throughout Central America, particularly poor families, tend to have multiple school-age children. In Guatemala, an average household has more than three children between ages 1 and 15. A poor family with three children of respectively 8, 13 and 16 would have to spend 145 percent of its household income to send their children to school!¹⁷⁸ In El Salvador, a similar family would have to spend about 40 percent of its income. In Nicaragua, private costs appear significantly lower.¹⁷⁹ There, a family with three children would only spend about 10 percent of household income to keep their children in school. The removal of all compulsory fees in Nicaragua in 2002 probably contributes to explain these findings. Recall, however, from Chapter III, that household expenditure for

¹⁷⁷ No data was available for Honduras, unfortunately.

¹⁷⁸ Such an analysis for Guatemala is confirmed by Edwards (2004), who concludes that a key reason for low coverage at the secondary level is undoubtedly related to the high direct, out-of-pocket cost of schooling. Edwards also highlights the sudden discontinuity in direct costs as key factor crucial in the decision of poorer students to not continue their studies. Using our data to illustrate this concept, a poor student having attended public primary schooling and wanting to continue onto secondary schooling in the public sector would have to go from private costs of about US\$ 22 per year to US\$ 155 per year. If he were to continue in the private sector for lack of room in the public sector, he would go from US\$ 22 per year to US\$ 300 per year!

¹⁷⁹ The figures obtained for Nicaragua are broadly confirmed by Arcia (2003), who finds that private costs represent less than 3% of the poor non-food consumption in primary and about 6% of the poor non-food consumption in secondary.

secondary in Nicaragua is higher than public expenditure highlighting a serious problem in the overall secondary financing structure in that country.

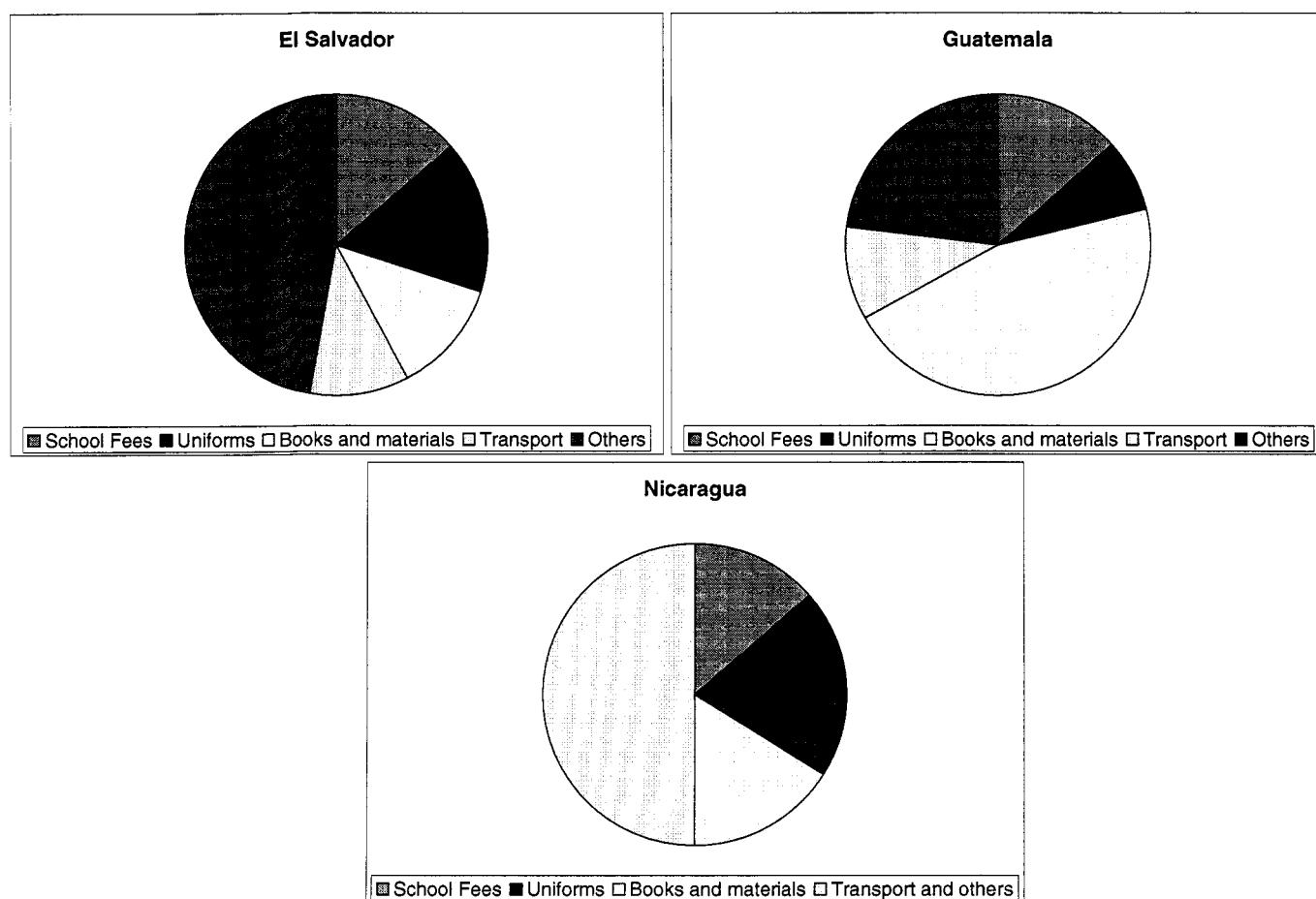
Table 4.5: Annual Private Spending per Student by Income Quintile (in US\$)						
	Nicaragua		Guatemala		El Salvador	
	Total	Public	Total	Public	Total	Public
Primary						
Q.I	11.9	11.8	24.8	22.4	61.4	57.6
Q.II	21.6	19.8	33.7	28.8	85.9	78.7
Q.III	29.1	26.9	47.4	40.9	118.1	102.0
Q.IV	51.5	38.5	75.5	58.5	161.9	125.6
Q.V	126.0	57.0	259.1	73.4	314.6	167.9
Total	37.6	25.0	76.7	40.2	128.4	92.8
Secondary						
Q.I	53.8	51.5	225.2	155.1	148.6	135.5
Q.II	57.9	55.5	224.7	187.9	184.4	166.7
Q.III	75.5	62.3	253.8	180.7	217.5	188.1
Q.IV	101.7	80.9	280.2	185.1	291.6	222.2
Q.V	184.3	105.1	508.4	227.7	481.8	284.1
Total	108.4	73.9	354.3	193.2	278.0	198.5

Table 4.6: Private Spending per Student by Income Quintile as a Proportion of Annual Household Income						
	Nicaragua		Guatemala		El Salvador	
	Total	Public	Total	Public	Total	Public
Primary						
Q.I	0.8	0.8	7.6	6.9	6.5	6.1
Q.II	1.0	0.9	2.7	2.3	3.4	3.1
Q.III	1.2	1.1	2.0	1.8	3.1	2.7
Q.IV	1.7	1.2	1.9	1.5	2.8	2.2
Q.V	2.2	1.0	2.0	0.6	2.5	1.3
Total	1.4	0.9	1.9	1.0	2.5	1.8
Secondary						
Q.I	3.5	3.3	69.1	47.5	15.7	14.3
Q.II	2.6	2.5	17.8	14.9	7.4	6.6
Q.III	3.2	2.6	10.9	7.7	5.7	4.9
Q.IV	3.3	2.6	7.1	4.7	5.1	3.9
Q.V	3.2	1.8	4.0	1.8	3.8	2.3
Total	4.1	2.8	8.6	4.7	5.4	3.9

Total

Composition of private household costs. Uniforms, books and materials and school fees are the most important sources of expenditure in secondary education although the relative weight of each cost differs by country (Figure 4.7). The cost of books and materials is particularly important in Guatemala, where it is by far the major source of private spending. Developing scholarship programs, subsidizing textbooks for the poor, or other private cost-cutting measures should be considered in Guatemala. In El Salvador, private costs do not come predominantly from one area. El Salvador has already been quite innovative in introducing scholarships, but other options to address private costs may include strengthening exemptions from the payment of fees for low-income students or introducing conditional cash transfers.

Figure 4.7: Composition of Private Expenditure in the Public Sector for Secondary Education (%)



Source: Household surveys

V. Efficiency of Public Expenditure

Clearly, overall public expenditure levels have important implications on issues such as education quality and equity. But perhaps more important than the mere level or distribution of public investment is how effectively that money is used to support learning for all children at all levels.

This section looks at two main subjects, first, the cost-effectiveness of education spending in terms of educational outcomes per dollar spent, and second, the distribution of public education expenditure across spending-area such as salary, non-salary, and capital costs. A final section highlights Honduras as a case example. Overall we argue that the efficiency of public education expenditure is low: Central American countries tend to perform poorly considering their education investment level and they divert too few resources to key inputs such as teaching and learning materials while spending the bulk of their resources on teacher remuneration without linking remuneration to teacher performance or effectiveness.

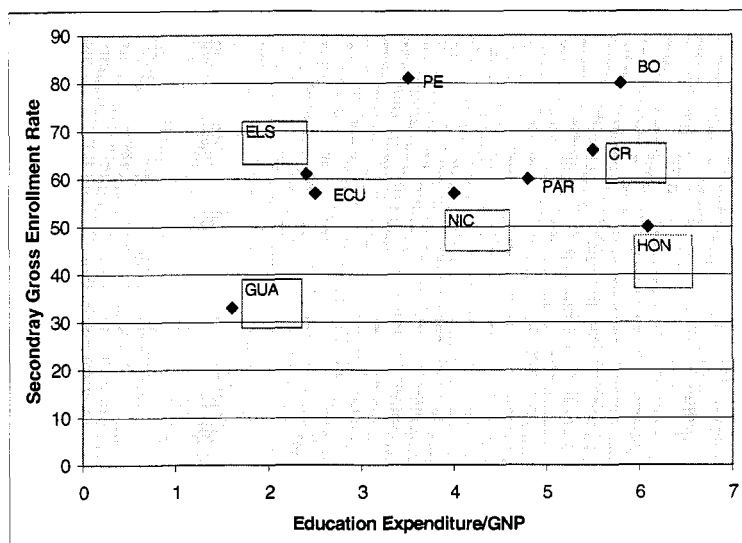
A. COST-EFFECTIVENESS

A simple way of gauging the cost-effectiveness of public expenditure can be undertaken by comparing expenditure indicators with educational outcomes. In Figures 4.8 and 4.9 we plot secondary gross enrollment rates and primary gross completion rates by education expenditure as a proportion of GNP for a group of Latin American countries with similar per-capita income levels to those of this study (Costa Rica, with higher per-capita income is also plotted).¹⁸⁰ These figures do not give any definitive evidence but they do show that given similar income levels the Central American countries compare poorly to other Latin American countries such as Peru, Ecuador and Bolivia, which, on average, tend to get have better coverage indicators considering their education investment levels.

¹⁸⁰ Unfortunately, there was not comparable data on per capita expenditure to do the same exercise with this indicator of expenditure.

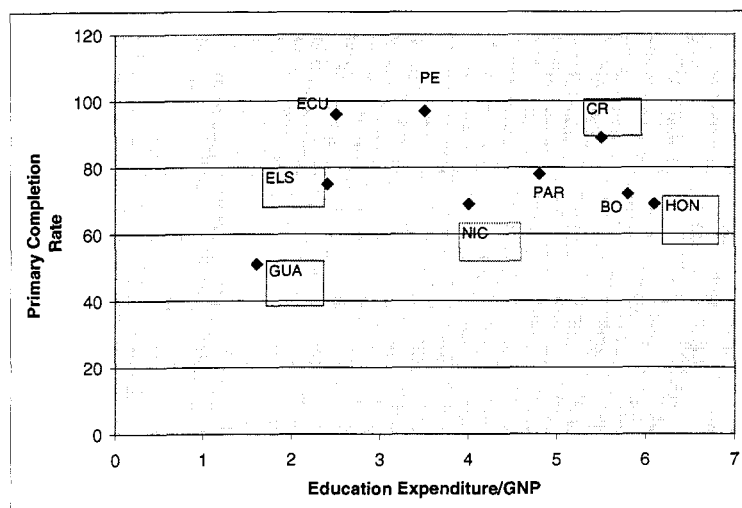
It is also interesting to compare the Central American countries themselves. With similar investment levels Costa Rica has higher educational outcomes than Honduras and El Salvador has

Figure 4.8: Education Expenditure/GNP and Secondary Gross Enrollment Rate, 2001/2002



Source: Education ministries for CA, WB/WDI for other countries and expenditure.

Figure 4.9: Education Expenditure/GNP and Primary Completion Rate, 2001/2002



Source: Education ministries for Central America, WB/WDI for other countries and expenditures.

higher outcomes than Guatemala. Nicaragua also fares somewhat poorly although as we saw earlier per-child and per-student expenditure in that country is particularly low (Figures 4.10 and 4.11 will clarify this point).

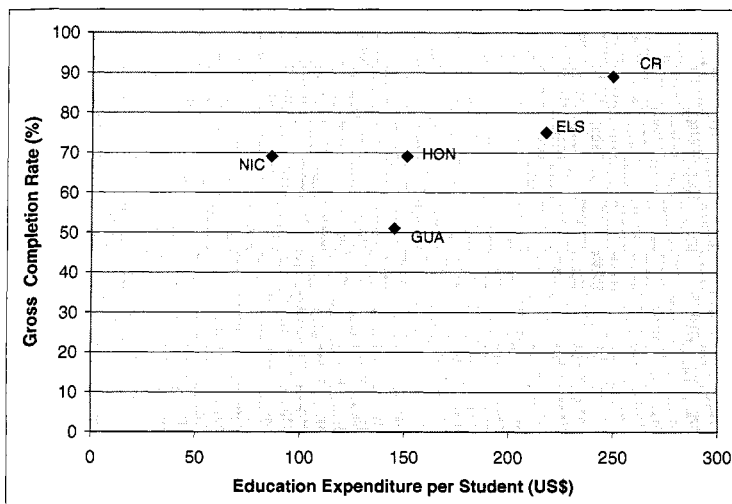
Figures 4.10 and 4.11 expand the comparison between Central American countries by comparing the primary and secondary completion with measures of per-student public education expenditure. In these graphs Nicaragua does especially well while Guatemala does especially poorly.¹⁸¹ Plots of secondary net enrollment rate and secondary survival rates (not shown here) point to a similar scenario.

Overall, this analysis can offer some insights on the relative efficiency of expenditure but it is still very simplistic. In particular, educational achievement, as measured by exam results, and equity outcomes should also be considered. If it is true that Nicaragua manages to obtain good coverage and completion given what it spends in secondary, it is also true, for instance, that these outcomes are particularly inequitably distributed in that country (see

¹⁸¹ Assuming that we expect to find, as illustrated by Honduras, El Salvador and Costa Rica, a somewhat increasing but convex relationship between expenditure and completion in primary, which indicates that after a certain level increasing completion may be more difficult.

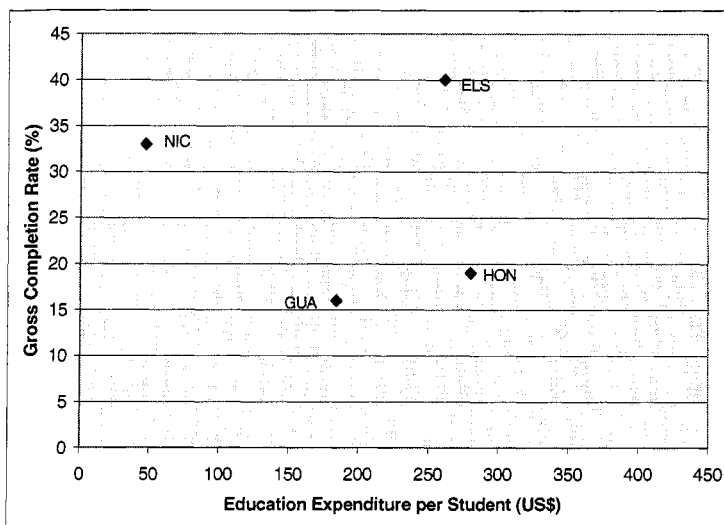
Chapter I and expenditure incidence analysis below).

Figure 4.10: Primary Completion Rate and Education Expenditure, 2001/2002



Source: MINED Data and Table 10.1 Annex X

Figure 4.11: Secondary Completion Rate and Education Expenditure, 2001/2002



Source: MINED Data and Table 10.1 Annex X

B. EXPENDITURE DISTRIBUTION BY AREA

In Table 4.7 and Figures 4.12 and 4.13 we report public education expenditure disaggregated by spending categories.¹⁸² On average, roughly 87 percent of education expenditure goes to recurrent costs. This is a similar pattern to that of much of Latin American and OECD countries.¹⁸³

¹⁸² Unfortunately, we could not undertake this disaggregation by education level due lack of data but we assume that the picture looks somewhat similar in primary and secondary. Another limitation concerns the fact that for some of the

Table 4.7: Economic Disaggregation of Expenditure (in 2002 US \$ millions, unless otherwise specified)				
	recurrent (salaries)	recurrent (non-salaries)	capital	total
El Salvador (a)	320	63	88	471
Guatemala (b)	467 (c)		33	500
Guatemala (d)	327	46	0	373
Honduras(e)	403 (c)		62	465
Honduras (f)	370	15	11	396
Nicaragua (g)	60	30	14	104
Nicaragua (h)	101 (c)		14	115
Costa Rica (in percent) (i)	91.6	8.4 (l)		100

(a) Total public expenditure. The relative amounts of salaries is somewhat under-estimated by not accounting for the salary transfers to EDUCO schools, which are allocated under the "goods and services" category and, as such, cannot be disentangled from non-salary recurrent expenditures; (b) Total public expenditure; (c) Total recurrent expenditure; (d) Only MINED expenditures. Assumes 80% of current transfers go to salaries; (e) Total public expenditure; (f) Only MINED expenditures. 92% of transfers go to salaries and 2% to non-salary recurrent costs. Global allocations have been pro-rated. (g) Expenditure of the MINED on pre-primary, primary and secondary; (h) All public expenditures of the MINED, except tertiary education; (i) Only MINED expenditures. Higher education costs allocated assuming 92% go to salaries; (l) Includes investment costs. Sources: see Table 4.1.

Low share of non-salary recurrent costs. Figure 4.13 plots the shares of capital expenditure and recurrent expenditure, sub-divided into salary and non-salary items. In all countries, except Nicaragua, the share of non-salary recurrent costs, which includes teaching materials, teacher training, equipment, etc, represents less than 15 percent of total expenditure and less than 20 percent of total recurrent expenditure. These figures are below OECD averages.^{184 185}

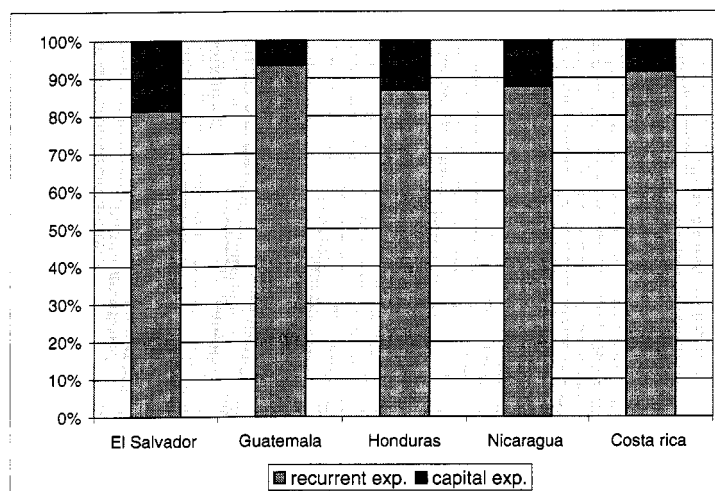
countries we only have information on the MINED, under-estimating capital expenditure. Accounting of recurrent versus capital expenditure is also not always precise in the different countries. In particular, as we will also see in the next sub-section, expenditure financed by external funds often tends to be accounted as investment while it is non-salary (or even salary) recurrent spending. An extreme case occurs in Nicaragua where all external sources are labeled as investment even when they are used for recurrent expenditure. Arcia (2003) made a careful re-classification of expenditure across economic categories in Nicaragua that we are using here (and which we also used in the above functional classification of expenditure). Finally, by being largely financed by external funds, non-salary recurrent and investment expenditures can fluctuate significantly across years making a one time cross-section analysis not as meaningful as a time-series analysis, which it was however difficult to undertake for all our countries. Our analysis shows, however, that beyond a couple of exceptions the share of external funds was fairly stable in our countries over these last three years making this issue somewhat less serious.

¹⁸³ This percent is probably over-estimated in Nicaragua and Costa Rica, where only data on the MINED budget are available, but it may be under-estimated in El Salvador, Honduras and Guatemala due to accounting issues.

¹⁸⁴ The OECD average was about 20% of total education expenditure in 2000 (see OECD, 2002).

¹⁸⁵ It was possible to make this disaggregation only on the funds channeled through Ministries of Education (with the exception of El Salvador). This share is, however, likely to be under-estimated in El Salvador, where capital costs are likely to also include some non-salary recurrent expenditure – see section on external funds.

Figure 4.12: Recurrent and Capital Expenditures, 2002



Source: Table 4.7

job. Unfortunately, the recent salary improvements in Central America do not sufficiently reward good teaching nor avoid corruption or gaming.

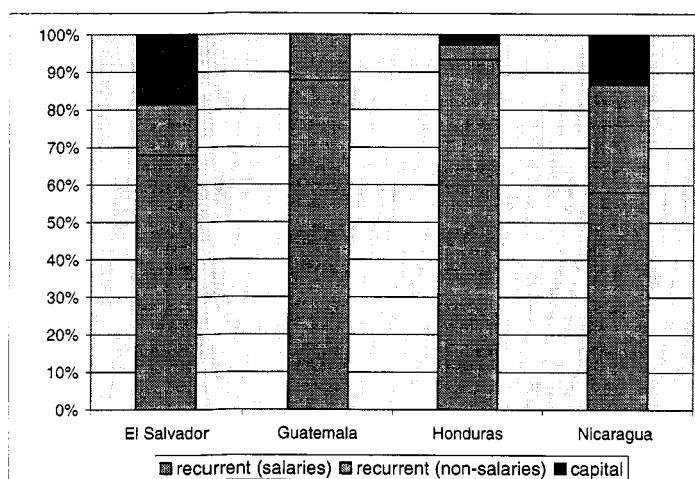
In most cases the recent salary increases in Central America corrected for longstanding low relative wages - and to a lesser extent class sizes have decreased causing the need for more teachers to be hired.¹⁸⁷ These increases in the salary-share of recurrent educational expenditure have been coupled with stable or even decreasing share for non-salary recurrent costs. This is particularly true in Honduras as will be discussed in the case study on Honduras below. In the other countries the increase was less sharp and, at least in the case of El Salvador, salaries were, at least in part, linked to measures of teacher performance. The cases of Costa Rica and Guatemala need to be further analyzed to see if salary increases resulted in education quality improvements.

Much of the recent increase in per-student educational spending at the primary level in Honduras, El Salvador, Costa Rica and Guatemala is due to increases in the teacher wage bill. Teacher salaries have increased in real terms over the last several years. Common knowledge and research have shown that teacher salaries should be competitive with those of other professionals with similar educational backgrounds in order to attract and retain high quality teachers.¹⁸⁶ But teacher pay should also reward good teaching, and as in most other professions, pay and position should be contingent on teachers showing up and doing their

¹⁸⁶ See for example Psacharopoulos, Valenzuela and Arends (1996) or Loeb and Page (2000).

¹⁸⁷ See The World Bank (2004b), Sanigest (2004) and CIEN (2003).

Figure 4.13: Salary, Non-salary Recurrent and Capital Expenditures, 2002



Source: Table 4.7

In sum, although the increase in expenditure can be partially explained by the, still limited, expansion of secondary coverage (through the financing of new investment and teachers - in particular in Nicaragua), and by the trend in capital expenditure (related to both new investment and reconstruction - in particular in El Salvador¹⁸⁸), this analysis shows that salary increases have probably been the most significant driving force behind the increase in public education expenditure. Little focus has generally been put on teaching materials, school supplies and comprehensive teacher training, which are potentially related to educational achievement.¹⁸⁹ We can

therefore conclude that there would be scope for: (a) increasing non-salary recurrent expenditure, both in absolute and relative amounts, in all countries (even in Nicaragua, for secondary); (b) maintaining the wage bill under control by maintaining efficient pupil-teacher ratios (which, in our Central American countries, are generally in line with the Latin American average) and holding stable real salaries (which, as seen in Chapter II, are more than in line with the ones of professionals with similar qualifications); and (c) linking real salary increases to improved teacher performance and real qualifications (this could be particularly advisable in Nicaragua where expenditure per student is still quite low). Finally, as a pre-condition for all these measures, it would be greatly necessary to improve the way recurrent and capital expenditures are accounted for (see below).

The case of Honduras highlights some of these challenges.

C. CASE STUDY: LOW COST-EFFECTIVENESS AND HIGH INEFFICIENCY IN HONDURAS

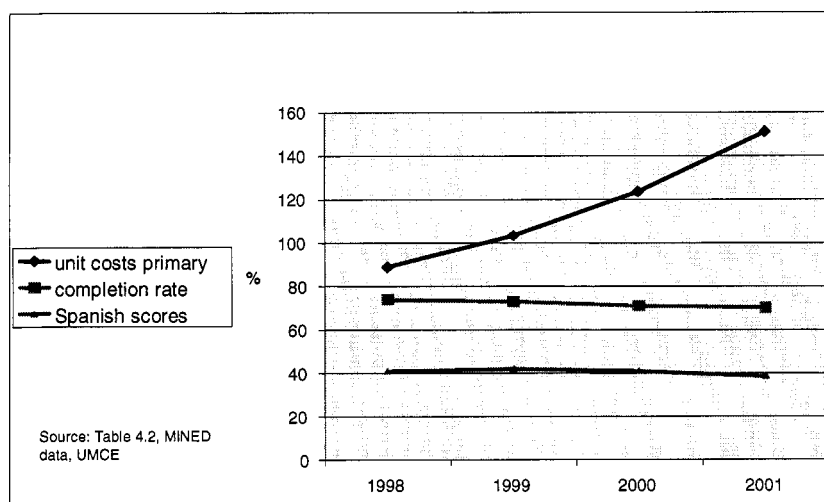
In the international cost-effectiveness comparisons shown earlier (Figures 4.8 and 4.9) Honduras appears quite cost-ineffective. This is further evident comparing the evolution of primary level test scores and completion rates with per student expenditure in recent years (see Figure 4.14). Between 1998 and 2001 per student spending increased significantly in Honduras. Education expenditure increased sharply in relation to GDP and the same happened with the expenditure per student per education level (which, in real terms, in primary, went from US\$ 78 in 1997 to US\$ 151 in 2001; and in secondary, from US\$ 205 in 1997 to US\$ 280 in 2001).

¹⁸⁸ Where substantial external funds were directed to reconstruction after the earthquakes.

¹⁸⁹ The availability or use of textbooks and school supplies is significantly associated with achievement in a few countries (El Salvador, Honduras, Guatemala - see Chapter II) and achievement of the poor, through the multi-grade and bi-lingual education programs, in all countries.

Although we would not necessarily expect a clear improvement in outcomes over this same time period as improvements take time to observe, it is, nonetheless, worrisome that educational indicators got worse over the course of these years. Disaggregating the data to the regional level we further find that the generalized increase in real spending across regions was accompanied by a decrease in average test scores in all but three regions (see Figure 10.1 in Annex X).

Figure 4.14: Evolution of Educational Expenditure, Test Scores and Primary Completion Rate in Honduras (1998-2001)



Honduras has had a substantial wage bill increase due to increasing teacher wages and inflated payrolls. Of the four countries under analysis, Honduras is the one where the distribution between salary and non-salary recurrent costs is by far the most dramatic. An analysis of the evolution of personnel recurrent costs in real terms, illustrated in Figure 4.15 below, clearly shows that these costs were the driving force behind the recent increase in education spending in Honduras. Meanwhile, the share of non-salary recurrent costs has decreased.

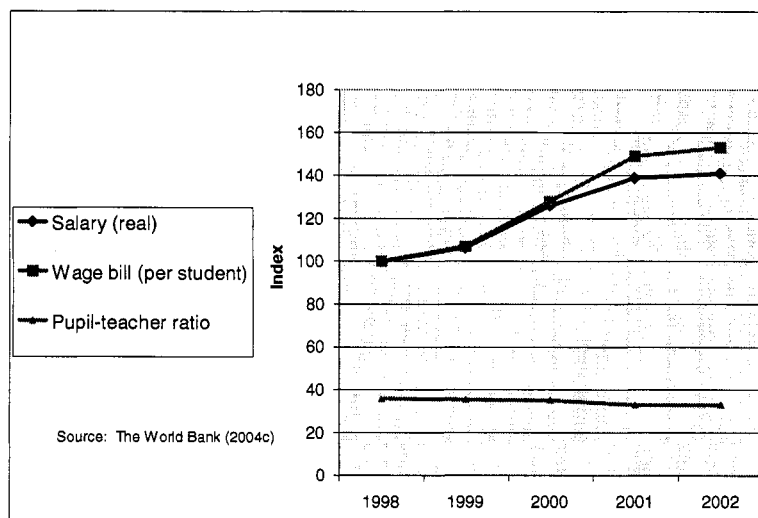
What was behind the wage bill increase? An analysis of teacher management and remuneration in Honduras makes it clear that the driving force behind the spending increase was a combination of increased teachers or class hours on the payroll and increased wage rate, for both primary and secondary.¹⁹⁰ While official figures show stable or even increasing pupil-teacher ratios, the payroll figures show substantial increases in the number of teachers (at the primary level) and class hours (at the secondary level) which suggest the presence of “ghost” teachers and an over-estimation of class hours.

It is highly advisable for Honduras to “clean up” the payroll records and establish an effective supervisory and monitoring system to eliminate ghost teachers and over-estimated class hours. This could be done by involving regional and/or local Ministry of Education offices and schools themselves.

¹⁹⁰ See The World Bank (2004c).

On the salary side, the approval and implementation of the Teacher Statute in 1997 led to an increase in the wage rate through three main channels: (a) the indexation, in 1998, of the base salary to the minimum wage; (b) the introduction of new salary allowances in 1998 and in 2000; and (c) from 1998 to 2002, an increase of the base salary, and, therefore, also of the allowances, at a nominal rate higher than the inflation rate. Overall, the combination of these factors resulted in real increases of the yearly gross wage of about 40 percent over the 1998-2002 time period which, at least in primary, were the main driving force behind the wage bill and the unit cost increase over that same time-period.^{191 192}

Figure 4.15: Honduras-Determinants of Wage Bill Increase



The salary increase was largely necessary to make up for the erosion in real salaries that had occurred during the 1990s and to fill the gap between the salaries of teachers and those of other public employees. However, the two last increases have more than filled that gap (Chapter II). The impact on teacher qualifications has been limited by an inadequate application of the academic allowance, and the current salary scale does not seem to have adequate mechanisms for monitoring or evaluating teacher effort and performance (Chapter II). Additionally, the payroll is full of civil servants who do not teach. In this context, it is not surprising that there is no observable improvement in educational outcomes.

VI. The Role of External Funds

External funds - both grants and loans - play an important role in education in Central America, particularly in the four countries under examination in this report. When poorly used, they can worsen the inefficiencies of the sector and increase foreign debt, but when used strategically, they can trigger positive changes in cost-effectiveness, sector priorities, and the magnitude of total

¹⁹¹ Depending on the source (official data or survey data), deflator used and salary concept (gross or net), real increases fluctuate between 30 and 42 percent over the 1998-2002 time period, which explains the small discrepancy with Chapter II.

¹⁹² The trend in the salary increase has recently been reversed. The realignment of the base salary increase on the inflation rate has been just negotiated with the IMF as well as a freezing of the salary allowances to their current nominal level.

financing for the sector. We start below by reviewing some basic facts about external funds (magnitude and composition), to then reach a few conclusions and recommendations regarding the changing characteristics and role of external aid.

A. MAGNITUDE AND COMPOSITION OF EXTERNAL FUNDS

Table 4.8 reports the relative share of external funds in all countries, focusing, when possible, on the time period 2000-2002.¹⁹³ A limitation of this information is that, with the exception of El Salvador, it only covers public expenditure channeled through Ministries of Education, whereas significant support for the education sector, in particular for investment expenditure, is also provided through public sector actors (such as social funds) or non-governmental organizations.

Table 4.8: Proportion of National and External Funds in Public Education Expenditure, 2002 US\$ millions (unless otherwise specified)											
	El Salvador (a)				Honduras (c)			Nica. (c)	Guatemala (c)		
	2000	2001	2001 (b)	2002	2000	2001	2002	2002	2000	2001	2002
National funds	356	388	393	412	279	342	358	75	338	380	302
External funds	30	40	126	59	36	34	38	40	11	10	71
Total	386	428	519	471	315	376	396	115	349	390	373
% of external funds	8	9	24	13	11	9	10	35	3	3	19

Source: Own elaboration on the basis of the sources of Table 4.1; Notes: (a) In current US\$ million; (b) Includes loans for rehabilitation after earthquake; (c) only MINED expenditure.

Central American countries have different degrees of dependence on foreign education funding. Central American countries differ substantially in terms of their use of foreign funds. Nicaragua gets the highest proportion of its education budget from external funds, accounting for one-third of all the expenditure channeled through the Ministry of Education. External funds representing about 10-15 percent of the public education expenditure over the time period 2000-2002 in Honduras and El Salvador.¹⁹⁴ Guatemala has the lowest dependence on foreign funds.

Substantial shares allocated to capital and non-salary recurrent expenditure and to primary. Table 4.9 and Figure 4.15 report a disaggregation of external funds by economic categories for three countries, also reporting how much of each category of expenditure is financed through these funds.¹⁹⁵ It should be kept in mind, however, that it is difficult to establish how external funds are allocated due to poor accounting procedures in the region. In Nicaragua all external funds are considered capital expenditure, for example. This happens to some extent in El Salvador as well. In Honduras, a substantial fraction of the external funds are classified as transfers with no further disaggregation. Given these limitations, any analysis of the use of external funds needs to be taken with a grain of salt.¹⁹⁶

¹⁹³ There was no recent data with which to compare Costa Rica.

¹⁹⁴ 2001 was an exceptional year for El Salvador if we add rehabilitation loans that also benefited the education sector.

¹⁹⁵ Unfortunately we could not obtain detailed information on Guatemala and Costa Rica.

¹⁹⁶ In some cases we had to make estimations to be able to get closer to the true allocation.

Table 4.9 and Figure 4.15 reveal that external funds are primarily allocated to capital and non-salary recurrent costs and finance a substantial extent of the capital and non-salary recurrent expenditure of Nicaragua and Honduras. Evidence from Honduras and Nicaragua further suggests that external funds are largely invested in primary or at most basic education. In El Salvador, where there was a large World Bank project for secondary education, we expect the allocation to be less concentrated in basic education.

Table 4.9: Allocation of External Funds across Economic Categories - 2002 US\$ million (unless otherwise indicated)

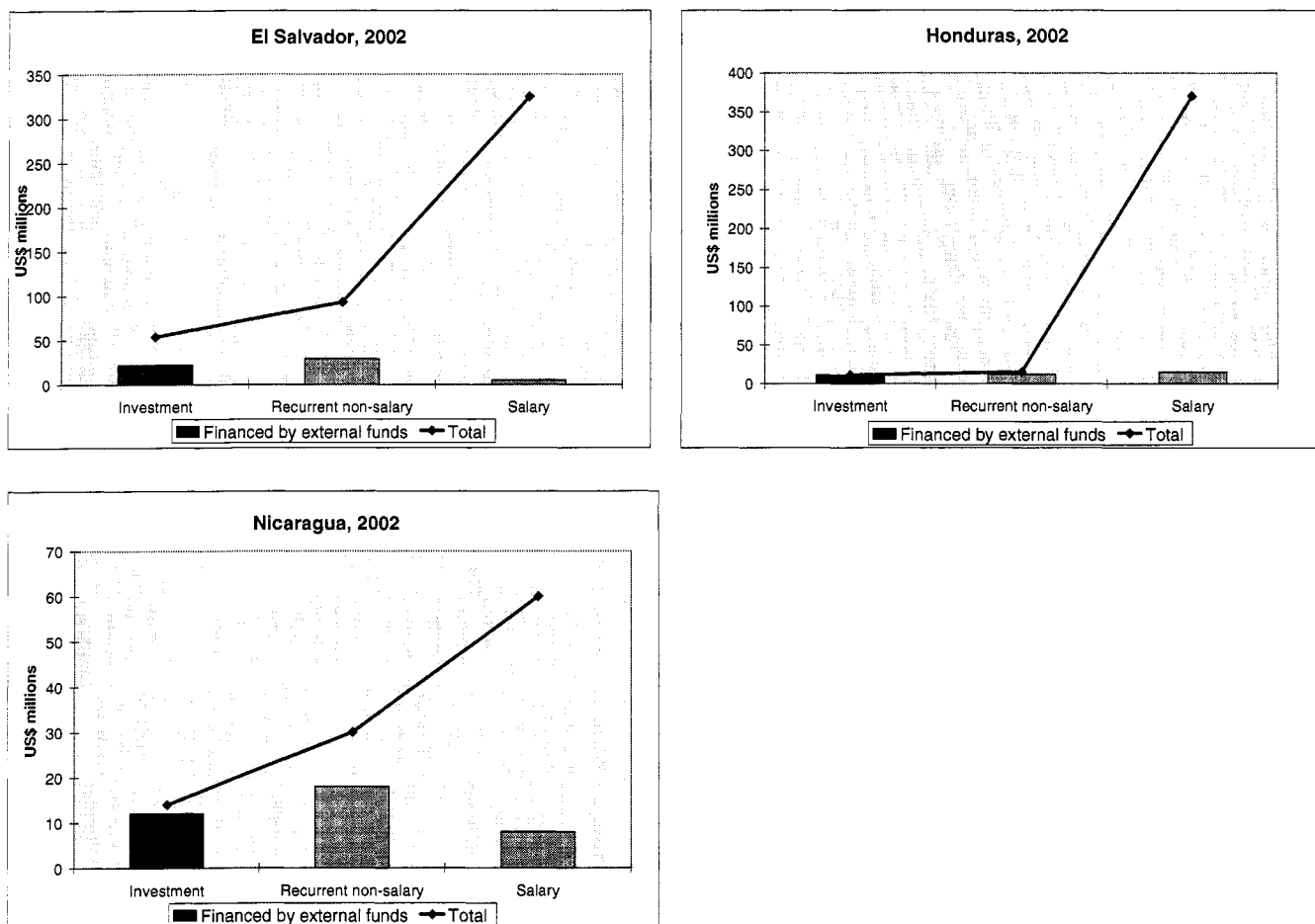
	El Salvador (a)				Honduras (c)		Nicaragua (d)
	2000	2001	2001 (b)	2002	2001	2002	2002
Investment	30 (22)	40 (18)	126 (104)	56 (22)	15	11	12
<i>In % of total investment</i>	73 (67)	71 (51)	81 (78)	64 (41)	79	100	86
Recurrent non-salary	(7)	(19)	(19)	(29)	7	12	18
<i>In % of total recurrent non-salary</i>	(13)	(24)	(23)	(31)	100	80	60
Salary	(1)	(3)	(3)	(5)	12	15	8
<i>In % of total salary</i>	(0)	(1)	(1)	(2)	3	4	13
Total	30	40	126	56	34	38	38

Source: Own elaboration on the basis of the sources of Table 4.1 (Nicaragua: elaborations of Arcia (2003) on the basis of the sources of table 4.1); (a) In current US\$ million. Between brackets are the figures we obtain when we assume that the expenditure classified under human capital finances for 85% non salary recurrent expenditures and for 15% salaries; (b) Includes loans for rehabilitation after earthquake; (c) Only MINED expenditure. In 2001 assumes 15% of transfers go for salaries, 75% to capital and 10% to recurrent non salary; in 2002 assumes 15% of transfers go to salaries, 50% to capital and 35% to recurrent non salary; (d) Only MINED expenditure (pre-primary, primary, and secondary).

Additional evidence is provided by a recent effort undertaken by the OEI (*Organización de Estados Iberoamericanos*) to map out the areas where the different donors intervene in Central America.¹⁹⁷ The OEI map shows a strong concentration of donors in the sector “quality and equity of basic education.” Within this sector, some areas, such as national quality assessment systems, pedagogical and curricular innovation, teacher training, infrastructure, equipment and teaching materials, multicultural-bilingual education and multi-grade schooling, are particularly invested in, with several cases of duplication between activities and projects of the different donors. Other areas, such as specific compensatory programs, educational statistics systems, institutional strengthening and decentralization, including school based management, are relatively less covered. There is much less concentration in the sector “youth, secondary education and preparation for the labor market”, and, within that sector, the most dynamic area is youth at risk. Little emphasis, finally, is being put on tertiary education, or science and technology.

¹⁹⁷ OEI (2004a).

Figure 4.16: Investment, non salary recurrent and salary expenditure financed by external and total funds



Source: Table 4.9

Moving beyond traditional aid. This basic evidence suggests a few conclusions and recommendations, but we should be generally careful in interpreting it. International cooperation in education in Central America is driven by a number of key donors that predominantly invest in specific activities of the education sector. Decisions where to allocate the funds are taken jointly with the governments, but with strong influence of the donor. In this donor-driven context the way external funds are reported and accounted for and how donors coordinate are critical. In other words, it will be imperative to improve the reporting and accounting of external funds in all countries to obtain reliable overall expenditure data. It would not be too difficult to agree with the different donors on a few simple guidelines for reporting education expenditure and to work more closely with Ministries of Finance to establish a consistent accounting system which records all expenditures (including donations) under a few clear expenditure categories.¹⁹⁸

Poor coordination of donors, which produces duplications in certain activities and insufficient funds in others, reduces efficiency in the use of external funds. It is important to work toward improved coordination among donors to avoid duplication between activities. The new Education

¹⁹⁸ A reform of the SIAFI in Honduras is, for instance taking this direction.

For All-Fast Track Programs in Honduras and Nicaragua at the primary level represent a shift from traditional project-based approach to a programmatic sector-wide approach, with five main focuses: (a) policy dialogue; (b) results; (c) sustainability; (d) donor harmonization; and (e) in-country dialogue. It is hoped that by helping design and implement a consistent and coordinated framework for intervention in the primary sector these initiatives will maximize the impact of external funds in the sub-sector. Similar initiatives may, however, also be needed for the secondary cycle.

The allocation of external funds across spending categories and education levels is not necessarily critical in that money is to some extent fungible. In other words, higher allocation of external funds on, for instance, non-salary recurrent expenditure, may lead the countries to spend less on these items from their own national funds and free up those funds for other purposes. From the evidence presented above, this may in fact play out negatively if we want countries to be absorbing more of these items in their national funds for sustainability. It may then make more sense to use a greater share of external funds to support salaries.

Overall, what will really count is having countries reach specific targets on their overall financial envelopes, both in terms of magnitude and composition of expenditure; and getting governments and donors to agree on the same targets. The new programmatic sector-wide approaches will ensure that this happens by establishing sector-wide targets on educational outcomes (in terms of completion, quality, etc) and expenditure. As we shift towards multi-sector programmatic approaches, such as those being supported by the World Bank in the poverty-reduction strategy credits and social sector programmatic loans, donors will not even have to come to agreement with governments on specific activities to be financed anymore but just on a set of conditionalities. In Honduras, for instance, the Poverty Reduction Support Credit (PRSC) established strong conditionalities related to expenditure reporting, efficiency and composition across education levels.

Conclusions

The magnitude of public education expenditure is still an issue in Central America. Although all countries have increased public education expenditure since the mid-1990s, the level of education expenditure in terms of GDP and per age-appropriate child is still below the Latin American average (with the exception of Honduras' GDP percentage). A similar picture holds true when comparing per-student education expenditure in primary and secondary with countries with similar per-capita income (an exception is again Honduras, where, however, there are major efficiency issues). Additionally, the secondary education share of the education budget is low in all countries, reflecting the still insufficient priority given to that education level in all countries.

On efficiency grounds, Central American countries do not perform particularly well. El Salvador and Nicaragua are more efficient than Honduras and Guatemala when comparing primary and secondary enrollment and completion rates with education expenditure in terms of GDP or per-student expenditure. To some extent, this difference in cost-effectiveness can be associated with higher shares of non-salary recurrent and capital expenditures in the budgets of these two countries, which ensure higher investment in infrastructure and in learning materials and teacher training. In terms of equity and educational achievement outcomes, however, Nicaragua is clearly

not performing particularly well.¹⁹⁹ Efficiency is low in Honduras where the increase in expenditure per-student was generated by a substantial increase in personnel costs not associated with improved educational outcomes (the share of non-salary recurrent expenditure in Honduras is very low). Honduras and Nicaragua also appear to be particularly dependent on external funds for non-salary recurrent expenditure and investment.²⁰⁰ Donor coordination issues have limited the impact of external funds somewhat, but the new sector-wide programmatic approaches have the potential of addressing this problem while also helping to establish common outcome indicators and expenditure targets for the education sector.

Finally, while the public education subsidy appears to be reasonably progressively distributed in primary, and the gross enrollment rate quite homogeneous across quintiles, a different situation holds for secondary and tertiary where the public subsidy is regressively distributed, reflecting large inequities in access and completion across quintiles. Even at the primary level, the fact that a much higher proportion of children of the lower quintiles still leave school without completing the cycle suggests that the subsidy is probably less progressively distributed than it should be. Additionally, private costs are a considerable burden in Guatemala and a substantial one in El Salvador.

The main (general) policy implications of this chapter can be summarized as follows:

- (a) Central American countries should spend at least the Latin American average in terms of GDP to reach an acceptable public expenditure level per school-age population. This is valid for Nicaragua, El Salvador and Guatemala;
- (b) The share of secondary education should increase in all countries, although this should happen within an increasing overall budget in terms of GDP to ensure more resources also for primary education. It is particularly important that Nicaragua increases its expenditure per student in secondary education to ensure higher quality education at that level;
- (c) The share of non-salary recurrent costs should be increased to at least 20 percent of total education expenditure (also by education level), to ensure the school supplies, teaching materials and teacher training necessary for improving educational achievement;
- (d) The wage bill should be kept under control by maintaining efficient pupil-teacher ratios and either stable real and relative salaries or salary increases effectively linked to teacher performance and quality. It is imperative for Honduras to revise its payroll figures and implement an effective teacher monitoring system. Real salary increases should be accompanied by improved teacher performance or meaningful teachers' qualifications (see Chapter I for more concrete actions);
- (e) In all countries, it is imperative to improve the reporting and accounting of external funds, to obtain reliable overall budget data. Donors and countries should agree to a few simple guidelines for reporting education expenditure and to work more closely with the

¹⁹⁹ As will also be shown in Chapter V analyzing autonomous schools.

²⁰⁰ There are no data on Guatemala.

Ministries of Finances to establish a consistent accounting system which records all expenditures under a few clear expenditure categories;

- (f) External funds should be better coordinated and leveraged. The new Education For All-Fast Track programs (EFA-FTI) are promising, as are the new multi-sector programmatic approaches, to ensure higher donor coordination and establish common outcomes and expenditure targets for the education sector;
- (g) Better access to quality schooling should be provided to the poor (which should be partly reflected in higher unit costs per poor student) to ensure higher completion;
- (h) Broad-based expansion of secondary education should be encouraged;
- (i) Public subsidies to tertiary education should be reduced in Honduras, Nicaragua and Guatemala, by leaving higher co-financing responsibility to public universities and more room for private universities;
- (j) The burdens of private costs should be addressed in Guatemala and El Salvador. Developing targeted scholarship programs and subsidizing textbooks for the poor could be possible options for Guatemala. El Salvador should strengthen exemptions from the payment of fees for low-income students and introduce conditional cash transfers providing full coverage of private costs in public or private schools.

Chapter V: A Comparative Analysis of School-Based Management In Central America

Introduction

This chapter analyzes and compares the impact of education decentralization reforms in El Salvador, Guatemala, Honduras and Nicaragua. Decentralization is the process of re-assigning responsibility and corresponding decision-making authority for specific functions from higher to lower levels of government and organizational units.²⁰¹ In the context of education reforms, decentralized functions frequently include policy-making, revenue generation, curriculum design, school administration, and teacher management. Typically decision-making authority for these types of functions is decentralized either to regional or municipal government offices or to schools themselves.

Decentralization reforms take many forms and correspondingly, have many objectives. In Central America a primary objective of these reforms has been to improve the efficiency and effectiveness of education by increasing school autonomy and community participation and the autonomy and capacity of local and regional education offices and stakeholders. Decentralization through municipalization has also taken place in some moments of time, for instance in Nicaragua, but has never reached the breadth and depth that decentralization to the school level has, with the consequence that municipalities are generally only a minor player in education delivery in Central America²⁰². Internationally, a large amount of research exists that analyzes the impact of decentralization reforms which shift certain decision-making powers to the school level (also called school-based management reforms, or SBM) on education outcomes²⁰³. Of the Central American reforms more research has been conducted on the Nicaraguan and Salvadoran reforms, and less on those of Honduras and Guatemala, as their adoption and implementation is more recent. Research is substantially more limited on how the reforms have expanded community participation and empowerment and on to what extent and in what ways schools exercise meaningful autonomy. Finally, very few studies compare empowerment and education outcomes across these four countries.

This chapter will be organized in five main parts: section I presents, very succinctly, the analytic framework that has guided this chapter; section II discusses and compares the design of the SBM models in the four countries under investigation; section III analyzes the impacts the reforms have had on both empowerment and education results; section IV discusses how variations in reform design, country contexts and actors' assets can explain differences and similarities in result; and section V provides recommendations on how to improve the impact of the SBM on empowerment and quality of education and guarantee the sustainability of the reforms.

²⁰¹ Paqueo and Lammert (2000).

²⁰² In some countries such as Honduras, however, municipalities play a noticeable "informal" role in education delivery by financing some infrastructure and, at times, even teachers.

²⁰³ Although little of this large amount of research is systematic or definitive. Generally speaking, the reader will need to keep in mind, throughout this chapter, that it is often difficult to associate reforms with outcomes, even if the most sophisticated technical tools are available. In this sense, all results need to be interpreted with caution.

I. Conceptual Framework

The conceptual framework draws on the World Bank's recent work on empowerment and accountability as well as on principal-agent literature in order to assess the effects of decentralization reforms on empowerment and education results. In summary, the framework argues that:

1. Decentralization reforms have a positive influence on the efficiency²⁰⁴ and effectiveness²⁰⁵ of education service delivery largely because decentralization: (a) enables the service provider (in this case the school) to make use of information about local preferences (asymmetric information argument), and (b) increases the opportunities for the service receiver (in this case the community) to hold the service provider accountable (accountability argument), which, in turn, can improve teaching and learning;
2. The ability of the school to make use of its knowledge about local preferences and of the community to hold school staff accountable depends on the extent to which the reforms have led to both community²⁰⁶ and school empowerment²⁰⁷;
3. School and community empowerment will not be enough to ensure the fulfillment of some national objectives, such as higher coverage or national targets in learning achievement, due to the "positive externality" argument²⁰⁸. Equity concerns and local institutional weakness may also not be fully addressed, as risks of capture by local elites. In this context, the government will need to find mechanisms which lead the agent (i.e. the school) to pursue its national interests. This will require an effective accountability relationship between the policy maker and the organizational provider – i.e. the school. The recent WDR²⁰⁹, which also highlights the importance of the

²⁰⁴ We can define efficiency in two different ways, as technical (productive) efficiency or social (allocative) efficiency. Technical efficiency is about producing a higher output for similar costs or the same output for lower costs; social efficiency is about choices that reflect more closely consumers' preferences.

²⁰⁵ Effectiveness (although not necessarily a very precise concept) is more about impact on outputs and outcomes, such as the coverage of the services, their quality (measured for instance by learning achievement), their impact on poverty reduction and social development, the equity of delivery, etc.

²⁰⁶ Community empowerment refers to parents' ability to have a stronger voice vis-à-vis school staff, for instance by giving parents the power to hire and fire teachers or to have a say in teaching methods. Strengthening accountability to local communities, through community empowerment, is particularly important because, borrowing from the principal-agent literature, the agent, or school, once given decision-making autonomy will often have the temptation to use it opportunistically. This means that the school might put its own interests before the achievement of the national objective for which decentralization was undertaken in the first place (i.e. improving student learning), thereby taking advantage of the fact that the principal (in this case the ministry of education) will typically not observe the *true* effort and ability of the agent (*moral hazard* issue). In this setting, the community can act as a second principal (or *client*) and help solve the incentive issue. This approach is also shared by the recent World Development Report (The World Bank, 2004f), which highlights the key role of the accountability relationship between the clients (in this case the community) and the providers (in this case the school staff), defined as *client power*, in having decentralization working in practice.

²⁰⁷ School empowerment (also referred to as school *autonomy*) involves strengthening the school's decision-making power (vis-à-vis the education authorities), for example on pedagogical or administrative matters.

²⁰⁸ In other words, education has broad societal benefits (on growth, social development, etc) that are not fully captured by private benefits. As such, without national intervention, education delivery might reach a socially sub-optimal equilibrium level.

²⁰⁹ The World Bank (2004e).

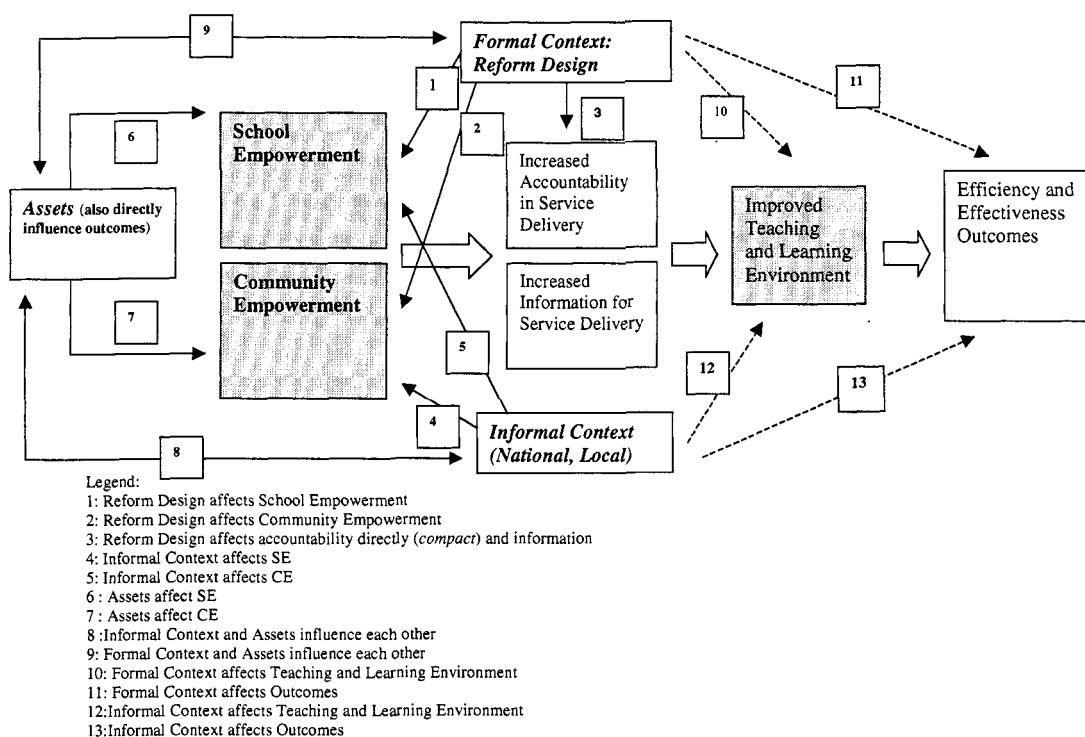
accountability relationships between policymakers and organizational providers, refers to this accountability relationship as the *compact*;

4. Finally, the degree to which schools and communities become empowered and the effectiveness of the accountability relationship between policymakers and education providers is influenced by both the: (a) assets of actors and communities, which include skills, and information as well as organizational, psychological, human, financial and material assets, and (b) the context in which the school and community exist. In fact, as we will see, assets and context also have a direct impact on the teaching and learning environment as well as on students' education outcomes. On the formal side, the context includes the specific reform design (*de jure* provisions regarding the operation of the program, most notably the functions and responsibilities decentralized to the school²¹⁰). On the informal side, the context consists of a range of socio-political factors that determine whether the reform, once adopted, can be sustained, and to what extent it is implemented according to the *de jure* provisions.²¹¹ Context and assets are interrelated. The framework is graphically presented in Figure 5.1. The chapter will have a focus on the impact of assets and reform design on empowerment and education results.

²¹⁰ Reform design is important for community and school empowerment. For instance, the extent to which parents become empowered vis-à-vis school staff is influenced, among other things, by the types of rights and responsibilities that are devolved to them or the degree to which the reform makes provisions for relevant parental capacity building. Similarly, school empowerment vis-à-vis the education authorities will be enhanced by a clear-cut decentralization of administrative functions, including extensive teacher management responsibilities and special training programs for school directors.

²¹¹ How the decentralization reform works in practice or *de facto* is influenced by a series of socio-political factors. Factors that have a bearing on school empowerment, for example, may include the relation between the government and the teachers' unions, the efficiency of the administration, and informal spaces for autonomous decision-making. In turn, factors that may influence the extent of community empowerment include a community's tradition of social mobilization, the extent of social division between parents and teachers, and the implementation and operation of policies, such as standardized evaluation and social auditing systems, which ensure the availability of information about educational outcomes at the national and local levels.

Figure 5.1: Conceptual Framework



II. Comparing Education Decentralization Reforms in Central America

A. HISTORY AND OVERVIEW OF DECENTRALIZATION REFORMS IN CENTRAL AMERICA

This sub-section provides an overview of each of the four countries' education decentralization reforms, discussing the historic background and rationale that led to the adoption of the reform, and describing reform features such as institutional arrangements and the criteria communities have to fulfill to participate in the programs. Sub-section B compares specific aspects of the reform designs in more depth. These include the nature and extent of community participation, the frequency and formula for financial transfers, and teacher salaries and benefits.

Overall, the community-based school management programs implemented in Central America have been aimed at increasing enrollment, strengthening community participation, and improving efficiency. A less frequently cited objective has been the improvement of education quality through increased responsiveness to local needs and interests. In three cases—EDUCO (El Salvador), PRONADE (Guatemala), and PROHECO (Honduras)—the main objective has been to increase enrollment in isolated rural areas affected by conflict, poverty or natural disasters. The School Autonomy Program in Nicaragua aims instead to give voice to parents and civil society on educational issues and, in this way, increase operational efficiency.²¹²

²¹² Arcia and Belli (1999).

a) The Case of El Salvador

El Salvador was the first among the four Central American countries under investigation to decentralize when, in 1991, the government officially launched its school-based management program, known by its Spanish acronym EDUCO (*Educación con Participación de la Comunidad* - Education with Community Participation). Prior to the establishment of the program, it was clear that the country's basic education sector faced a number of serious challenges, such as low enrollment, high dropout and repetition rates, inefficient management, and low fiscal allocations for primary education.²¹³ In part this was due to the civil war that had ravaged the country in the preceding decade. At the same time, lack of access to public schools during the civil war had led many rural communities to organize their own schools -- staffed, financed and administered by the community members themselves. The Ministry of Education regarded community participation as key to expanding access, and, under the EDUCO initiative, decided to institutionalize these, already existing, community-run schools and open up similar ones throughout the country.

The EDUCO initiative makes provisions for decentralizing some of the responsibilities of the Ministry of Education (MINED) to the regional and the school level, and for the participation of community members in school management. Both aspects create *de jure* spaces for school autonomy and community empowerment. The organizational structure underlying the EDUCO initiative is as follows:²¹⁴

- **MINED** enters into a contractual partnership with community education associations, known by the acronym ACE (*Asociación Comunal para la Educación*), so that these ACEs become responsible for education delivery to a given community on the ministry's behalf.²¹⁵ The MOE remains responsible for transferring funds to the ACEs, establishing guidelines for the distribution of funds, producing teaching and learning materials, supporting the organization, legalization and training of the ACEs, and supervising schools.
- **EDUCO's coordinating unit**, which reports directly to the MoE, provides the following: policy and technical design; promoting, supervising and evaluating implementation; coordinating with MOE with regards to training for school staff and supervisors; and providing training and technical support to the regional offices.
- **EDUCO regional offices** have recently been phased out²¹⁶. Their original mandate was to provide immediate technical and administrative assistance to the schools, including the provision of supervision, training, curriculum development and programs for school improvement.
- **District supervisors, replaced by Technical Liaisons** (*técnicos de enlace*), serve as the link between the regional and central EDUCO offices and the EDUCO schools. They are responsible for promoting community participation through the following activities: administrative and

²¹³ Edge (2000).

²¹⁴ Since its inception, the organizational and implementation structure of the EDUCO program have changed. The two most important changes are that the system of the supervisors has been replaced with that of the so-called *técnicos de enlace* and that the ACEs have been assigned greater decision-making powers, including the hiring of the *técnicos de enlace* and of administrative assistants who are responsible for organizing and monitoring the school councils. These changes will be discussed in more detail in sub-section II.B.

²¹⁵ This section draws on Edge (2000), and Meza and Guzman (2004).

²¹⁶ To streamline the structure of the Ministry of Education.

technical support to the ACEs, technical assistance to teachers, dissemination of information about EDUCO and MINED, assistance with the creation of schools for parents, and liaison between ACEs and MINED.

- **ACEs** are school-level legal entities whose membership is drawn from the local community. They are responsible for administering the funds transferred to them by MINED, selecting, hiring and monitoring teachers, building and maintaining schools, and mobilizing the rest of the community in support of the school.

EDUCO schools are exclusively established in rural areas and provide for pre-school and basic education (grades 1-9). Communities qualify for the EDUCO initiative if there are at least 28 students per grade in the community and no other education services are available.²¹⁷

b) The Case of Guatemala

Guatemala's school-based management reform is the National Community-Managed Program for Educational Development (*Programa Nacional de Autogestión para el Desarrollo Educativo*, PRONADE). PRONADE, like EDUCO, is a SBM program that seeks to increase access in poor, rural, isolated areas, and foster community participation in school administration. Initially piloted in the early 1990s, the program's expansion was linked to the 1996 Peace Accords, which were signed at the end of almost forty years of civil war. Stipulated in the Peace Accords was the demand that the government decentralize its education system and that all children complete at least the third grade. In an effort to fulfill these objectives, the MINED and the Commission for Education Reform focused on the PRONADE experience as an effective education delivery system. They did so for three reasons: (1) pilot programs, under implementation since 1992, appeared to be successful, though a formal evaluation was lacking; (2) the MINED believed that community involvement was essential to rapidly increase access to education, and (3) PRONADE's objectives – decentralization, community participation, and indigenous and linguistic diversity – were in line with the Peace Accords and the overall strategic direction of the government.²¹⁸

PRONADE decentralizes important functions to community school councils, the COEDUCAs (*Comités Educativos*), *de jure* giving the school a greater degree of decision-making autonomy in its relation with the education authorities and enabling parents to have a stronger voice in their relation with school staff. Functions and responsibilities are divided among the different organizational layers as follows:²¹⁹

- **PRONADE's implementation unit**, headquartered in the capital, is responsible for planning, directing and evaluating the program's administrative and operational activities, including determining the geographical areas the program covers, hiring and supervising the ISEs (see below), and signing the legal covenant with the COEDUCAs.

- **The 21 departmental offices** are in charge of coordinating policy implementation at the departmental level, assisting with the identification of communities that lack schools, processing

²¹⁷ Cuellar Marchelli (2001).

²¹⁸ Valerio and Rojas (2004).

²¹⁹ Information in this section is drawn from MINEDUC (2003a), MINEDUC (2003b), MINEDUC/DP Tecnología (2002), and Valerio and Rojas (2004).

the financial and administrative data gathered by the ISEs, and supervising the school feeding program.

- **Educational Service Institutions (ISEs)** are NGOs hired by the implementation unit to identify communities' educational requirements, organize and assist COEDUCAs in obtaining legal status, provide capacity building opportunities to teachers and school councils, and maintain updated information on the school's administrative and financial matters.

- **COEDUCAs** are legal entities that draw membership from the local community. Their responsibilities include: selecting, hiring, paying and supervising teachers, monitoring student attendance, managing funds transferred from the central authorities, organizing school feeding programs, and defining the school schedule and calendar.

Similar to EDUCO, PRONADE schools are established in remote, rural areas and provide for pre-school and primary education. Communities may qualify to participate in the PRONADE program if they meet the following four criteria: (1) they demonstrate the ability and interest to manage the new school, (2) the nearest public school must be at least three kilometers away, (3) there are at least 20 pre-primary and primary school-age children, and (4) there is presently no official teacher in the community.²²⁰

c) The Case of Honduras

Honduras' community-based education program, PROHECO (*Proyecto Hondureño de Educación Comunitaria*) was launched in March 1999 with the objective of enhancing access to education and fostering community participation in school-related decision-making. Studies the Ministry of Education had carried out in 1997 showed that more than 14 percent of school-age children were not enrolled in schools, 85 percent of these in rural areas. Building on the experiences in El Salvador and Guatemala, the Honduran government decided to use a school-based management model to address these deficiencies and establish new pre-school and primary schools in remote rural villages. By the end of 1999, PROHECO schools existed in more than 500 communities.

Responsibilities for the implementation of PROHECO are divided among stakeholders as follows:²²¹

- **PROHECO's coordinating unit**, located at the central level, as part of the MINED, is responsible for establishing the overall operational policies and strategies, including curriculum design, and for coordinating the program's technical and financial activities, including capacity building, community participation, collection of statistical data, and monitoring and evaluation.
- **MINED departmental offices** are responsible for raising awareness about PROHECO in the communities, and for overseeing the organization and fostering of the AECOs (see below). They should also coordinate and oversee the work of the promoters.
- **MINED district offices** support schools with the application of the national curriculum and the collection of school data, such as enrollment and drop-out rates. They also help identify communities in which PROHECO schools will be established.

²²⁰ The World Bank (2001a).

²²¹ This section draws on Secretaría de Educación Pública (2003).

- **Social Promoters** (*promotores sociales*) are in close contact with the communities and the school councils, helping with the identification of communities, providing training to the AECOs, and advising on questions of community participation and budget oversight.
- The school council, **AECO** (*Asociación Educativa Comunitaria*) is a legal entity that draws its membership from the community and that has the following functions: selecting and paying teachers, monitoring teacher and student attendance and performance, managing funds for school materials and school improvement activities, and building and maintaining the school.

Communities qualify for a PROHECO school if they meet the following criteria: (1) they are located in a rural area, (2) there are at least 25 pre-school and primary-school age children, (3) the nearest school is at least 3 kilometers away, and (4) the village is located in an area that was affected by hurricane Mitch²²².

d) The Case of Nicaragua

Nicaragua's school decentralization reform was introduced under the presidency of Violetta Chamorro and her coalition government that replaced the Sandinista regime in the 1990 election.²²³ The goals of the reform included raising the efficiency and effectiveness of education services. Greater participation and decision-making authority of parents and teachers was regarded as central to this end. First steps towards the "Autonomous School Program" (ASP) were taken in 1991, when so-called consultative councils (*consejos consultivos*) were established in all public schools to ensure the participation of the educational community, particularly parents, in school-related decision-making.²²⁴ The initiative was deepened as a pilot in 1993 with the transformation of the consultative councils into full-fledged governing councils (*consejos directivos*) at the school level in 24 well-functioning secondary schools. The objective of this pilot was to test the feasibility of a program that not only envisioned community participation but also increased autonomous decision-making at the school level.

The autonomous school program divides responsibilities among different actors as follows²²⁵:

- **MINED** is in charge of instituting norms for the operation of schools and the basic content of educational programs, setting standards for the quality of school materials, the qualifications of teachers and schools' physical facilities, determining the national curriculum, and channeling the national budget for the financing of public education.
- The **municipal delegate of the MINED** informs schools about ASP, guides schools through the application process, supports the program in the community while also acting as a liaison with the central ministry, and provides capacity building to the members of the school council.
- **School councils** (*consejos directivos*), both at the school and the municipal level, have legal status and are in charge of conducting the school's business, including hiring teachers and

²²² Secretaría de Educación Pública (2003).

²²³ Gershberg (1999).

²²⁴ MECD (1993).

²²⁵ This is adapted from The World Bank (1995) and Gershberg (1999).

administrative staff, maintaining the school building, making and overseeing budget allocations, generating additional financial resources (student fees), overseeing teacher performance and making pedagogical choices.

Unlike the cases in El Salvador, Guatemala and Honduras, the Nicaraguan reform initially targeted secondary schools in urban areas. It was not so much concerned about the establishment of new schools but rather the transformation of the governing structures of already existing schools. Since 1995 the autonomous school program has also targeted primary schools, using two different models: (1) one for urban schools which is similar to the secondary school model, and (2) one for rural schools which are organized into municipal nuclei and where a centrally located school performs the management functions and operates the bank accounts for the school cluster²²⁶. This means that in urban primary and secondary schools councils operate at the school level, whereas in rural areas they operate at the municipal level.

B. COMPARING THE DIFFERENT REFORM DESIGNS

This sub-section explores specific features of the different reform designs, comparing a series of aspects that relate to institutional arrangements, the organization, membership characteristics and functions of the school councils, financial transfers, and teacher salaries and benefits. It should be noted here that programs like El Salvador's EDUCO and Nicaragua's *Centros Autónomos* have evolved over time: EDUCO more in its organizational arrangements, Nicaragua in its target schools and financial arrangements. When necessary, we will attempt to capture this evolution.

The information on the characteristics and responsibilities of the councils is particularly important for understanding and comparing the *de jure* provisions for community empowerment and school autonomy. Overall, however, all the aspects of reform design analyzed in this sub-section will be key to understanding the impact of the SBM models on empowerment and educational outcomes, as will become clearer in section IV.

a) Organizational and Implementation Arrangements

SBM models can differ according to the organizational arrangements that are made for project implementation, including contracting and supervision of council trainers, teacher training, the identification of the communities that are to participate in the reform, as well as the organization, training and monitoring of the school councils. Table 5.1 shows how respective responsibilities are divided among different actors, indicating which actors are most closely in contact with the school councils and to what extent representatives or delegations of the MINED are involved with them. El Salvador's EDUCO program, as the one longest under implementation, has undergone a series of organizational rearrangements which are discussed in the subsequent sections and/or Table 5.1.

We will see in section IV that school councils' training and support is a key factor of success of an SBM model, because it is key to the working of the models that parents get adequate training and support in a variety of areas, starting from administrative matters.

²²⁶ King, Ozler and Rawlings (2001) and Fuller and Rivarola (1998).

Contracting of school council trainers. Initially, the El Salvador, Guatemala and Honduras programs did not differ substantially as to the actors responsible for contracting and supervising school council trainers (such as promoters, supervisors or ISEs). In each case, this function was carried out by the program's central coordinating unit, located within the MINED. While this is still the case in Guatemala and Honduras, in El Salvador the respective responsibility has been shifted to the school councils directly. El Salvador's school councils themselves are now in charge for contracting and supervising their trainers and therefore have substantially more powers than their counterparts in the other countries. Nicaragua's ASP was different from the start as, unlike the case in the other three programs, no system separate from the government was established to provide training and supervision to the school councils. In Nicaragua, the capacity building unit of the MINED— rather than an intermediary or non-government actor such as the promoter or supervisor – provides training to the school councils.

In three of the four countries, El Salvador, Honduras, and Guatemala, teacher training is mainly organized at the regional or district level. In contrast, Nicaraguan teacher training is organized at the central level.

Table 5.1: Organizational and Implementation Responsibilities

Organizational/ Implementation Responsibility	El Salvador	Guatemala	Honduras	Nicaragua
Contracting and supervision of school council trainers (e.g. supervisors, promoters, ISEs)	Initially, contracting and supervision were done by the MINED and EDUCO's coordinating unit, respectively. More recently these responsibilities have been shifted to the ACEs.	PRONDADE's implementation unit	PROHECO's coordinating unit	An equivalent non-government system to that of the supervisors, promotores etc. in charge of council training and organization was not established in Nicaragua.
Training of teachers	Initially, this took place in EDUCO's regional offices. More recently, training is provided by MINED's regional training centers.	MINED's departmental offices	PROHECO coordinating unit plus MINED's district offices	MINED
Identification of participating communities	Initially, this was done by the supervisors with the help of the central coordinating unit. These have been replaced by the <i>técnicos de enlace</i> .	ISEs together with MINED's departmental offices	Promoters together with municipalities and MINED's offices operating at the district and departmental level	Teachers vote to enter the program, principal then submits a petition to MINED's municipal delegate
Organization of school councils	Initially, supervisors carried out this function. More recently, these have been replaced by administrative assistants who are hired by the ACEs.	ISEs	Promoters	MINED's municipal delegate
Training for school councils	Originally, MINED's regional training centers provided training. This function has now shifted to the <i>tecnicos de enlace</i> , operating at the department level.	ISEs	Promoters	MOE
Monitoring of school councils	Initially, supervisors carried out this function. They have now been replaced by administrative assistants hired by the ACEs.	ISEs	Promoters	Municipal delegates

Identification of schools. Differences in reform design play a role with regards to the way schools are identified and selected to participate in the SBM reform: while in El Salvador, Guatemala and

Honduras villages have to meet certain requirements to be eligible for a community-managed school, it is at the discretion of Nicaraguan schools themselves whether or not they want to participate in the autonomous school program. The former have to meet such general criteria as location in remote, rural areas and often such specific criteria as a minimum distance to the nearest school or minimum number of school-age children. Communities are identified on the basis of information available to the MINED as a result of relevant assessments and/or information exchanges with lower levels of government. Intermediary figures such as Honduras' promoters or El Salvador's *técnicos de enlace* then visit the communities to inform the community leaders of the SBM reform and agree with them to return to the community on a given date when further information will be shared with the rest of the community and the council will be elected. In Nicaragua, schools do not have to meet any specific criteria to participate in the ASP. In order to become autonomous, teachers, along with the school principal, must vote on the matter. If the vote is in favor of joining the ASP, school staff sign a petition that indicates their inclination to participate in the program and then send the petition to the municipal delegate of the MINED for approval²²⁷.

Organization of school councils. Differences in reform design are also evident with regards to the legal organization of the school councils. Once participating communities are identified and school councils elected, they typically receive support in order to foster their organization and gain their legal status (*persona jurídica*). The underlying idea for continued organizational support is that relevant procedures will be new to the communities and that they require support in legal and administrative matters. Without the legal status, school councils cannot open bank accounts, receive financial transfers, and perform functions on the government's behalf. In the case of Guatemala and Honduras, organizational support is provided by the ISEs and promoters, the intermediary figures most directly in touch with the school councils. In El Salvador, the district supervisors initially carried out this function. In the context of the program's rearrangements, however, responsibility for school council organization has shifted to the so-called administrative assistants who are hired by the ACEs. The Nicaraguan model also differs from the Honduran and Guatemalan ones as organizational support is provided by a government body, namely the municipal delegate of the MINED.

Training and monitoring of school councils. Following their election and legal recognition, school councils in all four countries are also provided training on budgetary and administrative matters. Differences exist with regards to whether the training is provided by intermediary figures or directly by the MINED. The latter is the case in Nicaragua. In addition to source of training provision, there also are some variations regarding the extent and duration of the training. In Nicaragua, content and amount of training provided vary on an annual basis but typically cover such topics as budgeting, accounting, planning and evaluation, and pedagogical matters. In El Salvador, the ACEs receive a total of 5 days of training on such issues as community development, budgeting, accounting, and personnel management.²²⁸ Guatemala's COEDUCAs receive three days of training upon their legalization, plus an additional nine days as part of a 12-month follow-up service. The least amount of training is provided to Honduras' AECOs: training amounts to three days and covers a series of legal and administrative matters related to the school councils' functions. In all countries the same entities that are responsible for assisting school

²²⁷ Fuller and Rivarola (1998).

²²⁸ Meza (1997).

councils with their legalization are also in charge for monitoring their performance. Tasks that are subject to monitoring may include: book and record keeping, and procedural matters such as making announcements to the community at large and holding regular council elections.

To sum up, in terms of organizational and implementation arrangements, the School Based Management reforms of Honduras, El Salvador, and Guatemala are all quite similar while Nicaragua's ASP differs substantially from the others. Most notably, the Nicaraguan reform does not use intermediary actors, such as NGOs, to support local autonomy but rather schools interact directly with the MOE.

b) Characteristics of School Councils

School councils themselves vary greatly across countries and, indeed, across schools. They vary in size, constituents, and leadership. Table 5.2 details the basic characteristics of school councils in the four reforms. In El Salvador, Nicaragua and Honduras school councils are roughly the same size, between five and seven people, while in Guatemala they are substantially larger, at around 15 members. In Honduras, El Salvador, and Guatemala school council members are entirely drawn from the local community whereas in Nicaragua the principal as well as one teacher representative also must sit on the council. In all four countries local communities members have the voting majority within the council. We will see that the composition of school councils has an impact on community empowerment with communities being somewhat less empowered in Nicaragua due to a predominant role of the school principal.

Table 5.2: Characteristics of School Councils				
<i>Characteristics</i>	EDUCO, El Salvador	PRONADE, Guatemala	PROHECO, Honduras	ASP, Nicaragua
Size of Council	Five members	Fifteen members	Six members	Five council members in school with less than 500 students. Seven in schools with more than 500 students.
Council Membership	All are members of the community.	All are members of the community.	All are members of the community.	Five member council: principal, one teacher, three parents. Seven member councils: principal, two teachers, four parents.
Key decision-maker within council	Community members	Community members	Community members	Principal and Community members

c) Functions and Responsibilities of School Councils

The nature and extent of the functions relocated to the school level determine – at least in part – how much space the decentralization reform creates for parental participation and school autonomy, in other words for their *de jure* empowerment. Decision-making powers that are devolved typically fall into one of the following categories: personnel management, pedagogy and curriculum, school maintenance and infrastructure, and budget matters. As Table 5.3 indicates, the decentralization reforms in El Salvador, Guatemala and Honduras are fairly similar, granting the school council a certain degree of autonomy in the areas of personnel management, school maintenance and infrastructure, and budget oversight (with some limited power on pedagogy in Guatemala). The SBM reform in Nicaragua reaches further, however, in theory granting the council some decision-making powers over pedagogical matters and budget allocation and size. *De jure* responsibilities will have a clear impact on *de facto* empowerment, although implementation issues can complicate the transition from theory to practice.

Table 5.3: Functions Decentralized to School Councils				
Council Functions	EDUCO, El Salvador	PRONADE, Guatemala	PROHECO, Honduras	ASP, Nicaragua
Personnel Management				
Paying staff salaries	*	*	*	*
Establishing incentives for teaching staff				*
Hiring/firing teaching staff	*	*	*	*
Supervising and evaluating teachers	*	*	*	*
Hiring/ firing administrative staff				*
Pedagogy				
Setting classroom hours by subject				*
Selecting some textbooks				*
School calendar		*		*
Maintenance and Infrastructure				
Building/maintaining school	*	*	*	*
Buying school material	*	*	*	*
Budget				
Budget oversight ²²⁹	*	*	*	*
Budget allocation ²³⁰				*
Establishing school fees				*

²²⁹ Budget oversight refers to the fact that school councils keep track of transfers and expenditures by checking account statements.

²³⁰ Budget allocation refers to the fact that it is at the school council's discretion how the transferred funds are used, i.e. which amount is spent on salaries and which on school materials.

d) Financial Arrangements and Teachers' Benefits and Status

This sub-section is concerned with the nature of the financial transfers made to the school councils and with the salaries, other benefits and contractual arrangements of teachers.

Composition and frequency of financial transfers. As highlighted in Table 5.4, formulas to calculate transfer amounts in El Salvador, Guatemala and Honduras are similar in that they all include a predetermined fixed sum for teachers' salaries and benefits. There is also a fixed sum for school maintenance and supplies, except in Guatemala where funds for school and teacher materials depend on the number of teachers and students. This is not the case in the Nicaraguan SBM model where transfer amounts depend on school-specific factors such as student enrollment and drop-out rates and the location of the school rather than on predetermined sums. The total school transfer in Nicaragua is obtained by multiplying a cost per student by the number of students attending school (calculated by resting drop-outs from initial enrollment). We will see that the incentives inherent in these different types of formulae are very different, making the formula applied in Nicaragua promising from an enrollment and efficiency perspective. The formula has evolved in time, becoming more equitable and efficiency-enhancing in 2002. In addition to the financial transfers, Nicaraguan schools are also allowed to collect school fees to supplement their state allocation.

Table 5.4: Financial Transfers				
Aspect of transfer	El Salvador	Guatemala	Honduras	Nicaragua
Formula used to calculate transfer	The amount includes: (a) teacher salary (USD 418/month), (b) additional funds for benefits (rural bonus of USD 40/month per teacher, 14 percent of each teacher's salary for social security), and (c) USD 35/year for school maintenance and supplies.	The amount includes: (a) teacher salary (USD 240/month), (b) additional funds to cover benefits, (c) USD 28 per teacher/yr to buy teaching supplies, (d) USD 7 per student/yr for school materials, and (e) USD 12 per child/year for school breakfast.	The amount includes: (a) teacher salary (USD 215/month per primary school teacher and USD 72/month per pre-school teacher), (b) contributions for social security (11 percent of each teacher's salary), (c) provisions for school materials (USD 100/yr.) and school maintenance (USD 65/yr).	Since 2002: a per-student amount is calculated, adding up salary costs ²³¹ and operation and maintenance costs per student and an extra amount for smaller and rural schools. This amount per student is multiplied by students attending school (enrollees minus drop-outs).

²³¹ Obtained by dividing the average teacher salary by a standard pupil-teacher ratio.

Frequency of transfers	Monthly	Quarterly	Quarterly	Monthly
Transfer arrangements	Initially, EDUCO's coordinating unit deposited funds into local bank account registered by the ACE. Following a series of organizational rearrangements, it is now the Ministry of Finance, through its departmental offices, who deposits the funds to the ACEs.	The Ministry of Public Finance transfers funds into PRONADE's trust fund account which then deposits payments into local accounts opened up by COEDUCAs.	The Ministry of Finance transfers funds to PROHECO's coordinating unit which then makes transfers to AECO bank accounts.	The Ministry of Finance transfers funds directly into local bank accounts opened up by the <i>consejos</i> .

Financial transfers to the school councils are made on a monthly (El Salvador, Nicaragua) or quarterly basis (Guatemala, Honduras). Transfer arrangements differ as to whether the transfer is made directly from the Ministry of Finance to the school councils' bank account (El Salvador, Nicaragua) or whether the funds pass through the program's central office (Guatemala, Honduras).

Teacher salaries, benefits and contract tenure. Comparing teacher salaries, benefits and contract tenure across countries as well as between SBM and traditional schools is important because it sheds light on the imbedded incentive structures that, among other factors, influences whether it is attractive for teachers to join and remain in their profession as well as their day-to-day work as teachers. Who teaches and teacher performance, in turn, is directly related to educational achievement. Comparing teacher salaries and benefits across SBM and traditional schools, we see that, for a similar levels of qualifications, in El Salvador and Nicaragua salaries are identical across the two systems (the possibility of raising fees would in fact allow salaries to be higher in the autonomous schools of Nicaragua), while in Guatemala and, particularly, Honduras, salaries are higher in the traditional system. All other monetary benefits are generally higher in the traditional system (where, in particular, there are more fringe benefits), with the exception of Nicaragua. Lower average teachers' benefits in the SBM schools will contribute to explain why teacher education is lower in these schools. Finally, contract tenure is fixed-term, yearly renewable, for SBM models, which constitutes one of the most salient features of the models, designed to create an incentive to perform well.

Table 5.5: Teacher Compensation and Tenure in SBM vs. Traditional Schools						
Country	Teacher salary in SBM	Teacher salary in traditional	Benefits in SBM schools	Benefits in traditional schools	Contract tenure in SBM	Contract tenure in traditional
El Salvador	USD 5016/yr	5016/yr	Teachers working in rural areas receive a monthly “rural bonus” of 40 USD. As social security benefit, they also receive 14 per cent of their yearly salary.	Rural bonus, social security benefits, other fringe benefits (medical and life insurance, maternity leave).	One year renewable	Open ended
Guatemala	USD 2880/yr	USD 3084/yr	Teachers receive an annual bonus of USD 720, paid in three installments, plus USD 157 as a contribution to a pension plan (no full social security).	Teachers receive an annual bonus of USD 514, paid in two installments, social security benefits and other fringe benefits.	One year renewable	Open ended
Honduras	USD 2431/yr	USD 3018/yr	Teachers receive two annual bonuses, in June and December. Teachers also receive social security.	Two annual bonuses, in June and December. Teachers also receive social security and a pension, plus other fringe benefits.	One year renewable	Open ended
Nicaragua	USD 1350/yr (primary school teachers), USD 1488/yr (secondary school teachers) plus funds potentially raised by parents.	USD 1350/yr (primary school teacher), USD 1488/yr (secondary school teacher).	As a bonus, teachers receive one additional salary per year. They also have social security benefits, in part paid for by MINED and in part by the teachers.	As a bonus, teachers receive one additional salary per year. They also have social security benefits, in part paid for by MINED and in part by the teachers.	One year renewable	Open ended

III. Impact of Decentralization Reforms

The purpose of this sub-section is to review and to systematize the existing analytical evidence on the progress and impact of the school-autonomy models in Central America. The evidence relies mostly on secondary sources and, for Honduras, Guatemala and Nicaragua, recently collected data on autonomous schools. In all countries the information was complemented by interviews with key actors on specific aspects of the impact of the models and by additional secondary data covering aspects such as coverage, internal efficiency, etc.

Before presenting the results, we should make clear at the outset a few caveats. Firstly, as already mentioned, community-based school management programs implemented in Central America have been aimed at increasing enrollment, community participation, efficiency and, very marginally, on improving the quality of education through more parental and local participation. Raising quality has not necessarily been at the center of these initiatives, and the quality improvement objective has instead been considered as an indirect outcome or simply been added on as the programs have matured. Secondly, three factors complicate the use of outcome measures (learning, years of schooling, etc.) to evaluate the impact of education decentralization: (a) time series of these measures are seldom available; (b) these school outcomes usually change slowly in response to any kind of educational intervention, including decentralization; and (c) it is very difficult to control for external shocks ranging from natural disasters and fiscal crises to teacher strikes and changes in national education leadership—that may also influence school outcomes. Thirdly, selection bias is another major concern when assessing the effectiveness of decentralization.²³² If the kinds of communities who choose to participate in the school based management program are made up of especially motivated individuals then evidence of marginally higher test scores or more frequent student attendance may be incorrectly attributed to the decentralization experience itself. Also, differing rates of student attrition between decentralized and non-decentralized school types may make comparisons of outcomes for enrolled students very difficult to interpret.

We are well aware of the inherent difficulties of decentralization research in developing countries, and we compensate for the lack of perfect data by bringing in multiple sources of information that include secondary evidence from other studies as well as recently collected data from three of the participating countries. Following our conceptual framework, our approach to understanding the effects of decentralization in Central American schools focuses on two kinds of variables. The first group, which we refer to as the “first order” or direct impacts of decentralization, includes improvements in things like community and school empowerment, the provision of supporting inputs and teaching and learning processes. By empowering communities and making teachers and directors more accountable to parent councils the SBM model predicts more effective schooling environments. These are the most immediate goals of the SBM approach. But the story does not end here, since it is hoped that first order effects like improved teacher attendance will translate into second order improvements in things like student learning. The first and second order distinction is necessary from an evaluation standpoint, and it is important to first establish an impact of decentralization in things like learning and teaching environments in order to explain any observed differences in student outcomes.

²³² Jimenez and Sawada (1999).

This is not necessarily a requirement for establishing that decentralization works, since differences in second order outcomes may result from things that are not measured well in the data or, for non learning outcomes such as coverage and equity, from factors related to reform design which do not affect first order results. But a more causal argument in support of decentralization is built if the evidence shows that community participation or autonomous schools are more effective in areas that, in turn, are related to outcomes like test scores. This point has been somewhat neglected in the decentralization literature, at least in empirical analyses where the focus is almost always on student outcomes such as test scores or drop out rates and less attention has been paid to understanding first order differences in school environments.

A. COMPARING SCHOOL ENVIRONMENTS WITH AND WITHOUT DECENTRALIZED EDUCATIONAL PROVISION

a) School Autonomy and Community Empowerment

Community Empowerment

Mixed evidence, although community empowerment is generally greater in SBM schools. There is some encouraging evidence that communities have been empowered in Central American SBM models.

In El Salvador, parents of EDUCO students participate more in school affairs. ACE members (parent councils) in EDUCO schools visit classrooms almost 4-5 times more often than their traditional counterparts. At the parental association meetings, 80% and 79% of ACEs discussed teacher discipline and attendance of school personnel, respectively, while corresponding figures of schools in the traditional system are 62 percent and 38 percent, respectively.²³³ EDUCO parents are also three times more likely to engage in day to-day classroom activities than parents in traditional schools.²³⁴ Another benefit of EDUCO, cited by Lindo (2001), has been the growth of community social capital in communities with EDUCO. By empowering parents, it is expected that other improvements will result in areas such as democratic participation and state relations.

There is also positive evidence of community empowerment in Guatemala where each community is represented by the locally-elected school council, COEDUCA . A positive spillover effect of the program has been the community's more frequent and effective participation in other local and civic affairs.²³⁵ This has also been confirmed by other studies such as Asturias et al (2001) that found that COEDUCAs have used the knowledge acquired in training to lobby for projects to develop their communities such as roads, schools, electricity, running water, credits and others. A prior study by CIEN (1999) also found that COEDUCAs are a key means of increasing social capital.

²³³ Sawada (2003).

²³⁴ Jimenez and Sawada (1999).

²³⁵ Valerio and Rojas (2004).

Table 5.6: Parental Involvement in Community Schools versus “Regular” Schools								
	El Salvador		Guatemala		Nicaragua		Honduras	
	Control	EDUCO	Control	PRONADE	Non-Auto	Autonomous	Public	PROHECO
Parent-Teacher Meetings (Parents)			4.8	5.0*	3.43	3.44		
Parent-Teacher Meetings (Teacher)			4.2	4.7*				
Parent-Teacher Meetings (Director)	1.56	5.65*			5.41	4.92*	2.62	1.71*
Director-Parent Meetings			4.5	4.8*				
Meetings Coverage					0.55	0.58*		
Parental Participation							1.65	1.73

Source: Nicaragua data 2002; UMCE 2003; PRONADE data 2002; Sawada and Ragatz, 2004. Notes: Data are not comparable across countries due to measurement differences. In all countries except Guatemala the data are taken from third/fourth grade questionnaires. For Parent-Teacher Meetings the numbers refer to frequency, whereas Meetings Coverage measures percentage of topics covered during meetings. Parental Participation (Honduras only) is the degree of parental participation in the school activities according to the Director. Asterisk indicates comparison is significantly different at $p < 0.01$, 0.05 or 0.10 level.

Table 5.6 presents more evidence on parental participation in the region. The results are not entirely positive. In Nicaragua and Honduras parents in SBM schools appear to meet less frequently with school personnel than parents in traditional schools while in El Salvador and Guatemala the opposite is true. This inconsistency is somewhat surprising, and we cannot rule out measurement issues since parents at SBM school may not consider all of their trips to the school to be “visits.”

But frequency is only part of the story, and it could be argued that the more important indicator of parental involvement relates to what parents actually do at schools and the amount of control they have, rather than how frequently they come around. On this count there is more evidence of an impact, as parents reported a (slightly) greater coverage of issues in Nicaraguan autonomous schools and PROHECO parents, according to Directors, have a greater degree of participation in school processes. However, neither difference is particularly large and, in the case of PROHECO, it is not significant (measurement error is likely to be particularly relevant in Honduras). In Nicaragua, a study on the ASP²³⁶ concluded “the evidence that parents’ participation in school affairs has improved with the reform is weaker. About one-half of parents and teachers think that it (their participation) has become stronger, but a larger proportion of directors and council members think that it has not changed, at best”. While this is evidence of 1996, these findings are confirmed in more recent studies²³⁷.

²³⁶ King and Ozler (1998).

²³⁷ See King, Ozler and Rawlings (2001); and Florez, Ruiz et al. (2003).

School Decision-Making Autonomy

Mixed evidence, although decision-making has generally increased. The next first order outcome to be considered is decision-making autonomy. The SBM model predicts greater involvement by parents in day-to-day school operations, and the evidence (detailed above) is generally supportive of this contention. The effects on autonomy are less predictable, since decision-making power may shift from directors and teachers to parents without necessarily increasing overall. For instance, the ability to fire teachers may shift from directors to parents under SBM but the locus of control versus the center may remain unchanged. This does not seem likely, however, since with more community participation and control of schools, the overall decision-making autonomy should increase too, especially when parents have financial power. These factors, like those demonstrating parental participation, are also difficult to measure. On the one hand SBM stakeholders may not consider many of their activities as evidence of increased decision-making power and may under-report their real authority. On the other hand there may be significantly more *de jure* autonomy than *de facto* autonomy.

The ability to hire and fire teachers is an important mechanism linking community participation with decision-making autonomy in all of the SBM reforms in the four Central American countries. Parents may feel less inclined to participate in administrative processes or enter classrooms to instigate procedural and/or curriculum changes. They may instead use their ability to replace teachers as a means for improving autonomy and making schools more responsive to communities. In all community school models parent councils have the power to hire and fire teachers. While certainly an important power, it is less clear whether communities members are skilled at choosing high-quality teachers. Additionally, communities are often faced with only a very small pool of applicants considering the common attributes of SBM schools - lower salaries, remote locations and one-year contracts. These supply side constraints in turn make it hard to fire teachers because readily-available replacements are largely absent.

It is also important to consider how well parents and community members can evaluate the work of their teachers. Parents may be limited to evaluating teachers on limited measures, such as absenteeism, and teachers may be resentful of being judged by non-professionals. The PRONADE data from Guatemala reveal that less than 2 percent of the parent councils in PRONADE schools report firing a teacher, which is not significantly different from the non-PRONADE schools (PRONADE data). However, PRONADE schools report nearly three times as many instances of teachers quitting the school. This, again, may be due to the more attractive salaries, job security, and working conditions in traditional schools.

The first evaluation of Nicaragua's autonomous schools²³⁸ found that stakeholders in private schools report making 16 out of the 25 decisions pertaining to school operations and management at the school level (as opposed to a higher level), compared with 10 for traditional state schools and 13 for autonomous schools. At the primary level, respondents in both types of autonomous schools report that the school makes 10 out of the 25 decisions, as compared with seven for traditional public schools. These differences among the types of schools are statistically significant. There is some variation in the responses by school directors, teachers, and council members within each school type, but these differences are not significant; thus, there is general

²³⁸King and Ozler (1998).

agreement among the members of the school community regarding the degree of autonomy their school possesses. The evidence suggests that the reform has indeed successfully expanded the role of the school in its governance. King and Ozler (1998) also found that autonomous schools make significantly more schooling decisions than do traditional schools, especially on personnel matters and in determining the school plan and budget. The Nicaraguan data also demonstrate that the degree of decision-making actually exercised by autonomous schools varies greatly, and depends on implementation.²³⁹ Overall, the evidence for Nicaragua shows that the reform has indeed successfully expanded the role of the school, although, in contrast to the other countries, we will see that this came more from an increasing role of the school director. In El Salvador, Sawada and Ragatz (2004) find that EDUCO parent councils have more power to hire and fire teachers and directors.

Some additional data on autonomy are reported in Table 5.7. The variables are not comparable and questions about measurement and quality abound. So the table is used only to highlight some of the issues that need to be considered in the context of autonomy and implementation of the SBM model. For example, there is some evidence that teachers feel more “incentive-ized” in Nicaraguan autonomous schools, which is a potentially important mechanism of local control and autonomy if school councils and parents control the incentives. In Guatemala, the evidence from PRONADE is that parent councils have more control over aspects of schooling such as the work calendar and schedule, teacher supervision and even teaching methods (suggesting higher *de facto* than *de jure* autonomy). This last point is particularly interesting, since the ability of parents to enter classrooms, observe processes and instigate changes would appear to be limited in these contexts, especially rural Guatemala where many parents have never attended school. Finally, the results in Table 5.7 indicate that PROHECO teachers report less control over various aspects of their work, although the results are not very significant (discussed below). Unfortunately, no evidence was specifically collected on the degree of control of the parents’ councils but *de facto* control is likely to be higher at that level (recent evidence extracted from a comprehensive assessment confirms that parents feel that they have substantial control over teachers in PROHECO schools²⁴⁰).

²³⁹ Parker (2004).

²⁴⁰ See ESA (2004).

Table 5.7: School and Community Autonomy in Community Schools versus “Regular” Schools, Nicaragua, Honduras and Guatemala						
Variable	Nicaragua		Honduras		Guatemala	
	Non-Autonomous	Autonomous	Control	PROHECO	Public	PRONADE
Sum of teacher-reported incentives	1.6	2.6*				
Degree of school control over promotions	0.25	0.38*				
<i>According to Parent Councils:</i>						
Control over Calendar					0.24	0.37*
Control over Work Hours					0.25	0.46*
Control over Teaching Methods					0.18	0.27*
Have Fired Teacher					0.012	0.015
<i>According to Teachers:</i>						
Control over teaching			2.8	2.6		
Control over priorities			2.6	2.2*		
Control over decisions			2.7	2.7		
Control over planning			2.7	2.6		

Source: Nicaragua data, 2002; PRONADE Data 2002, (MINED, 2001); UMCE, 2003.

Notes: Data are not comparable across countries due to measurement differences. In all countries the data are taken from third/fourth grade questionnaires. Asterisk means that comparison is significantly different at $p < 0.01$, $p < 0.05$ or $p < 0.10$ level.

Lack of teacher autonomy. The evidence on PROHECO highlights an important point: teacher autonomy does not appear to increase in community schools. This has also been found in Nicaragua where King, Ozler and Rawlings (2001) find that teachers feel less empowered in Nicaraguan autonomous schools. Increasing autonomy in community schools may involve shifting responsibilities, which can result in empowerment for some and relative disenfranchisement for others. Hannaway (1991) argues that decentralization can diminish, rather than increase, the feeling of autonomy of local agents such as teachers because of the greater control that is wielded by parents and the local community. There is some evidence on community control and autonomy from multivariate analysis. For example, Sawada and Ragatz (2004) present results for the marginal effect of EDUCO participation on perceptions of control among teachers, directors and parents. The results show that parents feel much more empowered, especially regarding teacher and director management, whereas directors generally feel less control over processes. We should highlight that the internal distribution of power is somewhat different in Nicaragua, where the experience shows that school directors dominate school councils in many schools and there are concerns about the low participation level of community members and parents.²⁴¹ In the case of Nicaragua stakeholder participation appears to depend integrally on the leadership style of the school director²⁴² and teacher participation appears to wane when financial incentives are smaller.²⁴³

²⁴¹ Castillo (1998); King and Ozler (1998); Fuller and Rivarola (1998).

²⁴² Florez, Ruiz et al. (2003).

²⁴³ Gershberg and Winkler (2000); Gershberg (2003).

How can the impacts of SBM on community participation and school autonomy be summarized ? With the available data only a few, tentative conclusions can be put forth. First, the fact that hundreds of these schools are operating in the region provides some evidence of community empowerment, at least as measured by participation. There is also some evidence that parents are participating more in day-to-day operations in community schools, although the most certain mechanism appears to be through teacher management (hiring, paying, supervising, firing) and budgeting. What is less clear is the extent to which parents are actively involved in the teaching and learning environment of SBM schools. These are difficult aspects to measure, and in some cases (especially Guatemala) the parents are reporting more involvement in these facets of school life. Final conclusions about school autonomy levels are also difficult. Decentralization may, in some cases, have the effect of switching decision-making power from teachers and directors to parents, rather than increasing overall autonomy *vis-a-vis* the center. However, the fact that parents are participating more in teacher management in community schools is an important finding that may signal greater overall autonomy.

b)Teaching and Learning Environments

In this section we consider the relationship between decentralized control of schooling and teaching and learning environments. With the exception of certain observable and clear-cut school and home factors and teacher characteristics these are difficult variables to measure. It is also not entirely evident whether we would expect SBM schools to have better or worse teaching and learning environments compared with traditional schools. On the one hand the remote and impoverished settings of many SBM schools may lead us to believe they would have inferior teaching and learning environments. On the other hand, increased community participation and school accountability may lead these schools to have superior teaching and learning environments.

Learning Materials and School Infrastructure

The relative state of school resources and infrastructure in SBM schools compared with traditional schools varies across countries due to program design and national priorities. In El Salvador, EDUCO schools and traditional schools are equally likely to have sanitation facilities, but fewer EDUCO schools have access to electricity or piped water. There are no differences in access to textbooks between the two types of schools, but EDUCO classrooms tend to have fewer students and a larger library.²⁴⁴ Despite this advantage EDUCO schools have fewer overall resources than traditional or private schools and teachers use fewer resources in the classroom to improve learning.²⁴⁵

The quasi-experimental study of PRONADE schools in Guatemala attests that PRONADE schools are more likely to lack water and sanitary facilities than a control group of schools.²⁴⁶ Another study carried out by CIEN (1999) reports that people generally believe PRONADE schools to be worse off than traditional counterparts.

²⁴⁴ Sawada (2003).

²⁴⁵ MINED/UES (2003).

²⁴⁶ MINEDUC/DP Tecnologías (2002).

The situation is different in Nicaragua where, largely due to program design, Autonomous Schools tend to have more resources and better infrastructure than traditional schools. Parker (2004) finds that Autonomous Schools are more likely to have curriculum standards and teacher guides and that school conditions and resources tend to be higher.

This is also true for Honduras where PROHECO schools have more resources and better infrastructure, on average, than their traditional school counterparts. In terms of infrastructure, the program has benefited from access to external funds to improve infrastructure, and construction of PROHECO schools has been a priority of the Honduran Social Fund (FHIS). In terms of learning materials, PROHECO schools also tend to have more than traditional schools perhaps because school councils receive money directly to purchase materials.²⁴⁷ PROHECO schools are not altogether more advantaged than traditional schools however, traditional schools tend to have more school services and larger libraries than PROHECO schools.²⁴⁸

Teacher Effort

If community schools have greater autonomy and parental participation it seems likely that they will do a better job of maximizing existing capacity, perhaps by eliciting more effort from teachers.²⁴⁹ Teacher effort is yet another elusive idea to measure but typically researchers use proxies such as teacher attendance, hours worked, and frequency of homework assigned. Eliciting greater or improved teacher effort is one of the key ways in which school-based management may improve student learning and development.

Teacher attendance and work hours

There is some evidence that community school teachers work more days and more hours than traditional school teachers, although this is more the case in El Salvador, and Guatemala than in Honduras or Nicaragua. In the case of El Salvador, Jimenez and Sawada (1999) argue that close community monitoring and greater job insecurity in EDUCO schools result in less teacher absenteeism and fewer school closings than in traditional schools. There is indication that school councils in EDUCO schools are more likely to discuss teacher attendance and disciplinary measures than parent associations in traditional schools.²⁵⁰ EDUCO teachers report that they are also more likely to visit students' homes if students are absent. This may also be at least in part a behavior stimulated by greater accountability to parents in these schools.²⁵¹

Table 5.8 summarizes the evidence from El Salvador, Honduras, Nicaragua and Guatemala. Similar measures of teacher attendance and work hours are considerably more mixed in Nicaragua. While autonomous school teachers and principals tend to report that teachers work more hours and are less absent than traditional school teachers these results are not reflected in parent or student surveys.²⁵²

²⁴⁷ Durston (1999).

²⁴⁸ DiGropello and Marshall (2004).

²⁴⁹ Sawada (2003); DiGropello and Marshall (2004).

²⁵⁰ Jimenez and Sawada (1999).

²⁵¹ Ibid.

²⁵² King and Ozler (1998).

In Honduras, the PROHECO teachers report fewer hours of weekly work, although when decomposed into various categories the results show they spend the same amount of time on teaching activities.²⁵³ PROHECO teachers appear to be absent more often, the difference emerging largely due to more PROHECO teachers receiving more training. Interestingly, students report that PROHECO teachers are less frequently absent than traditional school teachers. Finally, PROHECO schools are more insulated from labor problems as their teachers are not union members. During the last two years, PROHECO schools have remained open when others have been closed due to strikes. School directory also confirms that PROHECO schools are closed less frequently.

Table 5.8: Teacher Attendance and Work Hours

Variable	Nicaragua		El Salvador		Honduras		Guatemala	
	Non-Autonomous	Autonomous	Public	EDUCO	Public	PROHECO	Public	PRONADE
Work Hours	27.3	29.0*	33.7	36.8*	39.7	36.4		
Teacher Absences (a)			1.4	1.2*	13.9	17.4	0.19	0.15*
Teacher Absences (b)	0.34	0.35			1.94	1.54*		
Days Worked in School							111.0	113.0*
School Closings					29.5	20.5*		

Source: Nicaragua Data, 2002; UMCE 2003; PRONADE 2002; Marshall, 2004a, 2003b; Sawada and Ragatz, 2004.

Notes: (a) According to teachers or parents; (b) according to students. Data are not comparable across countries due to measurement differences. In all countries the data are taken from third/fourth grade questionnaires. Asterisk means that comparison is significantly different at $p < 0.01$, $p < 0.05$ or $p < 0.10$ level.

Using the PRONADE evaluation data²⁵⁴ we see that parent committees in PRONADE schools report fewer teacher absences, meanwhile Marshall's (2004a, 2004b) data from three Guatemalan departments show that PRONADE schools report significantly more days worked during the school year. Parents also report that they prefer PRONADE schools because of more effective days of class and because teachers are more responsible to their duties and responsibilities.²⁵⁵ Finally, EDUCO teachers in El Salvador report more weekly hours and fewer absences.

Teaching Pedagogy

In conclusion, while there is mixed evidence it appears that by and large SBM schools are less frequently closed and SBM teachers are less likely to be absent and may work more hours than traditional school teachers. These findings are more consistent in Guatemala and El Salvador and are somewhat less so in Honduras and Nicaragua.

Few school factors are as difficult to measure for quantitative analysis as classroom pedagogy. Furthermore, it is not clear that parent councils actively monitor teaching practices, especially given the targeting of school decentralization in poor areas where parents themselves have low

²⁵³ Di Gropello and Marshall (2004).

²⁵⁴ MINEDUC/DP tecnologías (2002).

²⁵⁵ Asturias et al. (2001).

levels of schooling. Nevertheless, it should not be dismissed that SBM teachers may be more inclined to adapt their teaching methods to better suit local needs and contexts by using more dynamic and interactive pedagogies or assigning more homework for example. As shown in Chapter II there is evidence that more interactive pedagogies may enhance learning although this is contingent on several factors such as teachers' mastery of these methods. Data on teaching methods comes from teacher and students surveys, both of which have their drawbacks. Finally, intervening variables—like class size or the number of grades in the classroom—can also influence the use or success of particular methodologies.

Little evidence that teaching methodologies are different. There is no evidence that SBM schools tend to differ significantly in pedagogical methods in Nicaragua or Honduras²⁵⁶. The best data available on this subject may come from Marshall's (2004b) analysis of student learning and attendance in rural Guatemala. This study involved classroom observations of teaching methods rather than surveys and found that while there were differences between PRONADE and traditional schools, both types employed traditional teaching methods. PRONADE teachers tended to use direct instruction methods while traditional schools tended to use individual work methods. In terms of homework there is equally weak evidence. Nicaraguan SBM schools tend to review homework more often while in Guatemala, PRONADE students report that they receive less homework.

Class Size and Grades in Classroom

Generally smaller class size, but more grades taught. Two final components of teacher effort are less actual indicators of teacher supply of effort and more likely to be indicators of the demands placed on teacher effort. These are class size and the number of grades taught in the classroom. Class size is an important variable for evaluating community schools and probably an endogenous one. For example, parents may intentionally limit class size in order to increase efficiency, or good schools with good reputations may find themselves with large class sizes as more parents enroll their children. The number of grades is also subject to parental manipulation if they have concerns about the demands placed on the teacher. In both cases these variables are likely to have an intervening effect on implementation of SBM in the classroom.

Table 5.9: Average Student-Teacher Ratio and Enrollment								
Variable	Nicaragua		El Salvador		Honduras		Guatemala	
	Non-Auto	Autonomous	Public	EDUCO	Public	PROHECO	Public	PRONADE
Students per teacher	25.9	30.6*	28.0	20.8*	37.6	29.7*	29.0	26.6*
Multi-grade school or grades per teacher			0.20	0.39*	0.65	0.73*	1.5	2.7*
Total Enrollment					98.5	68.7*	84.1	78.4

Source: Nicaragua Data, 2002; UMCE 2003; PRONADE 2002; Marshall, 2004b; Sawada and Ragatz (2004).

Notes: Asterisk means that comparison is significantly different at $p < 0.0.1$, 0.5 or 0.1 level. For multigrade the data in El Salvador equal 1 if teacher works in multigrade school, 0 otherwise; for Honduras the percentages refer to teachers that work in single to two-teacher schools; for Guatemala the numbers refer to the average number of grades per teacher.

²⁵⁶ Parker (2004) and Di Gropello and Marshall (2004).

For EDUCO, class sizes in the community schools are about seven students per teacher smaller than a group of control schools. The same pattern is apparent in Honduran and Guatemalan community schools (see Table 5.9). The exception is the Nicaraguan autonomous schools, which have larger class sizes than non-autonomous schools.

Honduras, El Salvador, and Guatemala SBM schools all tend to serve more grades per classroom than control group schools. By themselves these results may suggest that community schools are more concerned about class size, perhaps because they want to get the most out of the teacher's ability especially considering the multigrade context of the classroom. With a link between learning and class size we can put this (supposed) concern into an actual learning context. Another important issue concerns costs. If community schools are getting more effort out of teachers then the cost effectiveness is increasing, but this may be counter-acted somewhat by having fewer students per teacher. And once again the relationship between class size and learning (or other outcomes perhaps) is crucial because if class size really is not a conditioning variable linking teacher effort with student performance then parental efforts to maximize learning by limiting class size may be misplaced.

In sum, the evidence on teaching and learning environments is mixed. First, with regards to materials and physical conditions the evidence is inconclusive, as some autonomous schools (such as Nicaragua) appear to be better equipped while in other areas (such as PRONADE schools in Guatemala) the opposite is true. In terms of teacher effort the results are somewhat more conclusive, as autonomous and community-based schooling environments appear to maximize teacher effort to a greater degree (at least in terms of teachers' work hours). Once again it must be stated that these conclusions are tentative, and based mainly on simple t-tests using data that may be of low quality.

Despite the somewhat inconsistent results it is possible to begin to form a picture of SBM implementation in the region, or at least begin to prepare the ground for a more demanding analytical framework. The evidence that schools get more out of teachers, despite having generally lower qualifications (as we will see below) and being paid less (see sub-section II.2), points to a more efficient schooling model. This relative efficiency is attenuated, however, by the generally lower student-teacher ratio in these schools. In cost effectiveness terms we can of course only speculate, especially since we do not know how any of these measures (teacher effort, class size, etc.) translate into student outcomes like learning. Finally, given the numerous differences between the community school "treatments" in the region, we must once again highlight the role of local context, assets and implementation schemes in determining these outcomes.

B. COMPARING ENROLLMENTS AND STUDENT OUTCOMES WITH AND WITHOUT DECENTRALIZED EDUCATIONAL PROVISION

a) Impact on Enrollments

Ministries of Education have used three administrative models to rapidly increase primary school enrollment in rural and marginal urban areas, with local and multilateral financing. The first is the

“traditional” model of opening schools. The two most difficult aspects of this model are the creation of a teacher position and school construction. A second model, supported by the World Bank, was the establishment of afternoon shifts in existing schools in marginal urban areas. This model has the same teacher position challenge but avoids the need to build additional schools. The third model has been that of School Based Management, this model has also been supported by the World Bank and other international agencies.

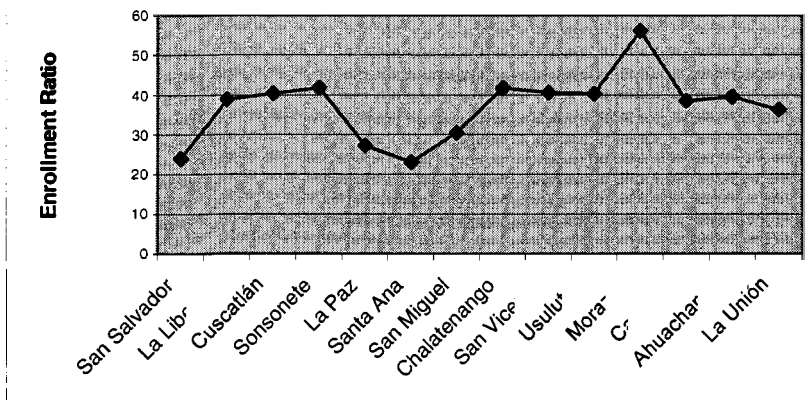
SBM models have been successful in increasing enrollment. In El Salvador there has been a steady increase in enrollments attributable to EDUCO. In 1991 the program was administered by 263 ACEs with 263 teachers and 8,416 students (see Table 5.10). 10 years later, in 2001, the program included 1,970 ACEs and 322,432 students in preschool, primary and middle schools. This represents 50 percent of the public rural preschool enrollment and 37 percent of all students in grades 1-9 in rural El Salvador (38 percent of students from grades 1-6, and 25 percent of grades 7-9). This growth is impressive and can certainly be related to the increased coverage in rural areas highlighted in Chapter I, although it is necessary to put it in the context of generally growing enrollments across the region in rural areas.

Table 5.10: Coverage Expansion: EDUCO, 1991-2001				
Year	Classrooms	ACE	Teachers	Students
1991	263	263	263	8,416
1992	1,009	845	1,009	32,288
1993	1,411	871	1,311	41,952
1994	2,313	1,334	2,316	74,112
1995	3,554	1,341	2,919	113,728
1996	5,279	1,700	3,884	168,928
1997	6,062	1,705	4,196	193,984
1998	6,448	1,640	4,369	206,336
1999	7,415	1,722	4,703	237,280
2000	8,271	1,811	5,339	264,672
2001	10,076	1,970	6,515	322,432

Source: MINED, 2002, and Database *Dirección de Evaluación*

The program has also contributed to improve equality of access to educational service. As Figure 5.1 shows, the program developed more in the poorest departments of the country (on the right hand side of the graph).

Figure 5.1: Enrollment in EDUCO as a percentage of the public enrollment in the rural areas by departments ranked by poverty levels, 2002



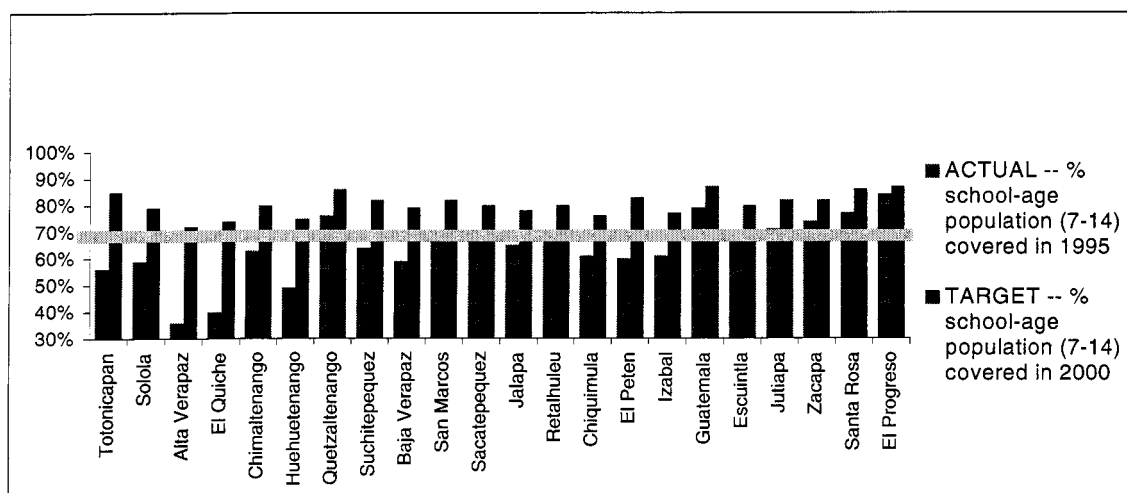
Source: MINED, database 2002; UNDP, 2001.

In Guatemala, PRONADE's main objective was to open educational opportunities for 50,000 out-of-school children per year until full primary school coverage was attained. The immediate goal was to ensure that at least 70 percent of primary school-age children in each one of the 22 departments received services by the year 2000 (Figure 5.2). Since most departments had already achieved this goal, priority was given to departments that had not yet reached the minimum coverage, which, coincidentally, are also the departments with the highest proportions of indigenous peoples. Today PRONADE provides services to children in virtually all regions of the country in 20 departments.²⁵⁷ In a relatively short period of time PRONADE moved from a small innovative pilot program in 19 rural communities to a nationwide program reaching almost 3,600 communities. By the beginning of the current school year (2004), student enrollment reached almost 400,000 at the primary level. As of December of 2002, PRONADE schools represented 21 percent of primary school enrollment in rural areas and accounted for 14 percent of the total enrollment in primary education at the national level.²⁵⁸ PRONADE clearly had a significant role in contributing to the increase of the enrollment rate in rural areas pointed out in Chapter I.

²⁵⁷ Valerio and Rojas (2004)

²⁵⁸ MINEDUC (2004).

Figure 5.2: Percent of Primary School-age population in school in 1995 and target for 2000



Source: Valerio and Rojas (2004)

Table 5.11: PRONADE: Accomplishments 1996, 2000-2004

Year	Primary School Children served		Preschool Children served	Primary School Teachers hired	Schools	Department	ISEs
	Target	Actual					
1996	55,000	67,734	-	327		13	13
2000	258,000	249,024	43,848	7,373	3,419	21	17
2001		261,397	48,635	7,903	3,420	21	17
2002		272,820	48,739	8,325	3416	21	17
2003		328,448	57,564	10,001	4,161	21	17
2004		382,588	62,651	11,688	4,554	21	17

Source: Information from PRONADE Coordinating Unit, MINEDUC, 2004

While not specifically targeted to rural communities, the autonomous schools in Nicaragua have also had an impact on coverage, in particular at the secondary level, where the enrollment rate increased substantially over the 1900s. In 1997, 73 percent of all secondary students and 37 percent of all primary students were under the autonomy program. In terms of teachers, 78 percent of all secondary teachers and 41 percent of primary teachers were under the autonomy program as well.²⁵⁹ By 2002, 37 percent (1,781) of all Nicaraguan primary and secondary schools were autonomous; autonomous schools served 63 percent of the students (501,000), and had 13,419 teachers.²⁶⁰ According to the Participation Law approved in 2002 all schools in Nicaragua must be autonomous by the year 2006.

²⁵⁹ Arcia and Belli (1999).

²⁶⁰ MECD (2004).

In Honduras, where PROHECO targeted the poorest and most isolated rural communities, the program had 820 schools in 2000 with 5,396 students at the pre-basic level and 34,144 primary school students²⁶¹. According to the Central Unit of PROHECO, in 2004, 87,310 students were enrolled at the pre-basic and primary level in PROHECO, representing about 11 percent of the total enrollment in rural areas. PROHECO appears to be a somewhat more targeted program than the other SBM reforms.

b) Impact on Internal Efficiency (Student Flows)

As just shown, the SBM models have helped the countries in the region to improve their enrollment rates. Yet, one of the vexing problems for policy makers and other stakeholders of the education systems is how to keep children in school once they enroll. We have seen that repetition and dropouts are a problem in Central America, in particular in rural areas (Chapter I). There is some evidence that community schooling leads to better student flows suggesting that internal efficiency, in particular in rural areas, may have improved over these last few years, but it remains a problem.

There is some evidence of improved student flows. Once again the EDUCO program has received the most attention among researchers. Jimenez and Sawada (2003) find that the EDUCO program contributes significantly to decisions to remain in school beyond grade three. Additionally, students in EDUCO schools are less likely to repeat grades than students in traditional schools (although the result was not statistically significant).

There is less evidence for the PRONADE program in Guatemala. Based on 1995 data, PRONADE's indicators of internal efficiency are neither above nor below those of traditional rural schools, although PRONADE indicators have gradually improved in time. It is of particular concern that, as in traditional schools, repetition in the first grade of PRONADE schools was as high as 34 percent in 1999. More recent data confirm that PRONADE's indicators are very similar to the average rural indicators. More positive evidence, at least on student retention, comes from Marshall's (2004a) data from rural Guatemala, which make it possible to conduct very precise comparisons between cohort grade completion and retention rates in a regional sample of rural schools in Guatemala. His results show that PRONADE schools have done a better job at keeping students in school. Furthermore, in an econometric analysis using a multinomial outcome (passing, failing and desertion) Marshall (2004a) finds that boys enrolled in PRONADE schools are significantly less likely to drop out of school.

For Honduras, Di Gropello and Marshall (2004) find some evidence that community schools have lower rates of dropout and grade failure than traditional schools in rural Honduras in their multivariate analysis of school averages for various student flows.

Finally, in Nicaragua, recent data of the MINED (see Table 5.12) indicate that autonomous schools have slightly lower promotion rates, except in sixth grade; lower repetition rates, except in fourth grade; and slightly higher drop out rates in all grades, except in sixth grade. Overall, however, the results are very similar between the two groups. Higher drop-outs may be the

²⁶¹ SE (2000).

consequence of the relatively little impact of the autonomous model on teacher attendance. The new allocation formula, which includes an adjustment for drop-outs, will hopefully help improve student flows.

Table 5.12: Nicaragua: Efficiency indicators for autonomous and non-autonomous schools by grade, 2003

	Autonomous schools						Non-autonomous schools					
Rates	1	2	3	4	5	6	1	2	3	4	5	6
Promotion	65.95%	81.75%	80.52%	81.63%	82.26%	97.06%	66.44%	81.84%	81.31%	82.26%	82.82%	96.61%
Repetition	17.76%	10.25%	10.57%	7.89%	6.28%	2.94%	20.02%	11.46%	11.86%	9.13%	6.78%	3.39%
Drop out	15.43%	9.34%	9.99%	11.26%	12.49%	0.00%	12.76%	7.62%	7.61%	9.42%	11.35%	0.00%

Source: MECD, Nicaragua, 2004

c) Impact on Student Achievement

The Evidence

It is commonly believed that community schools lead to more student learning. But it should be restated that none of the SBM models studied here has as a main goal improving quality of education. Despite the lack of a consensus in education policy circles on the relationship between student learning and community schooling, there is some evidence from Central America on this subject.

Mixed results on learning, but the impact of different assets needs to be considered. Table 5.13 summarizes, in descriptive form, the evidence on learning in the region. For each country standardized test scores (mean 0, standard deviation of 1 except for El Salvador) are presented together with indicators of family socioeconomic status and parental education. The results show that in Guatemala the PRONADE students are scoring significantly lower than their public school counterparts, while in El Salvador and Nicaragua the differences are insignificant. In Honduras, the PROHECO students have higher averages in science.

Table 5.13 also addresses the issue of community assets (which we will develop further below). The pattern here is more consistent, as in all countries except Nicaragua the community schools are located in communities with lower levels of parental education and SES, usually measured by the quantity of services or items in the home. These data provide an empirical justification for an important point that has only been referred to until now: community school initiatives in Central America are being targeted in areas that have fewer resources. The issue of community assets is an important one, since implementation of any decentralization initiative requires local capacity to be fully effective. The data in Table 13 demonstrate the need for multivariate analysis in order to assess the true effect of SBM on learning. In the next section on explaining impacts we will undertake our own analysis using data from Honduras, Guatemala and Nicaragua. But there are other studies—many using these same data—that also need to be summarized first and reveal a somewhat ambiguous pattern.

Table 5.13: Third/Fourth Grade Test Score Averages By School Type

Model:	Guatemala				Honduras		El Salvador		Nicaragua	
	World Bank 2002		HCRG 2002		Control	PROHECO	Control	EDUCO	Control	AUTO
	Control	PRONADE	Control	PRONADE						
Spanish	-0.33	-0.39	0.02	-0.16*	-0.04	0.03	1.75	1.73	-0.03	0.02
Math	-0.27	-0.38*	0.01	-0.07	-0.04	0.03	3.74	3.59	-0.01	0.01
Science					-0.12	0.08*				
SES	2.5	2.2*	0.31	-0.46*	0.49	-0.42*	0.66	0.28	4.1	4.5*
Parental Education	4.2	3.0*	2.5	1.7*	3.2	2.5*	0.53	0.50	5.5	6.2*

Source: Nicaragua data 2002; UMCE 2003; World Bank 2002; Marshall, 2004b; Sawada and Ragatz, 2004. Notes: For El Salvador average SES refers to percentage of homes with electricity, while Average Parental Education is the percentage of mothers with basic education. Asterisk means that comparison is significantly different at $p < 0.01$, 0.05 or 0.10 level.

Existing studies indicate SBM schools support improved learning in El Salvador and Honduras and, to some extent, Guatemala and Nicaragua. In an evaluation of El Salvador's EDUCO program, Jimenez and Sawada (1999) compare teacher absenteeism and student achievement in EDUCO schools with that of traditional schools, controlling for student characteristics and selection bias (since the EDUCO schools were not randomly selected). They find that despite the fact that EDUCO schools have fewer days of teacher absenteeism than traditional schools, the student achievement in EDUCO schools was no different from that of traditional schools. The EDUCO analysis has continued with Sawada and Ragatz's (2004) recent paper that attempts to link community school implementation with student outcomes. They make the case that teacher behavior has changed for the better in EDUCO schools. The challenge lies in linking these changes with improvements in student outcomes, and the resulting statistical analysis provides a link—if somewhat tenuous—between improvements that result from EDUCO participation and improved student outcomes like test scores.

The already mentioned evaluation of Nicaragua's autonomous schools by King and Ozler (1998), investigating the impact of two types of autonomy (*de jure*, based on whether the public school officially had a contract with the Ministry of Education to transform the school council to a *consejo directivo*; and *de facto*, based on the proportion of key decisions made by the school council rather than central or local government), find that *de jure* autonomous schools do not appear to have an impact on student achievement. The authors attribute this lack of test score improvement to a possible lag time in becoming truly autonomous. Interestingly, they find that *de facto* autonomy - ie *non*-autonomous schools that practice decision-making power - is associated with higher student achievement. By disaggregating the *de facto* autonomy variable into two types of decision-making areas (decisions that are related to teachers, including such decisions as hiring and firing, evaluation, supervision, training, and relations with the teachers union; and decisions related to instruction, including decisions such as class size, curriculum, textbooks, educational plans, and the school hours and calendar), they find that the variable on pedagogy gives mixed results; while the effect of the variable on teacher-related issues is positive for both education levels and subjects, and is statistically significant throughout, except for math scores at the secondary level. Recalling Levin (1995), these results suggest that the schools that are more active in tracking and monitoring teacher activity and in controlling staffing issues are likely to be more successful in increasing student achievement.

Parker (2004) also addresses the autonomous reform in Nicaragua and finds that autonomous schools, on average, have higher Spanish scores than centralized schools (only significant in the third grade). Unlike Spanish, student math scores are not predicted by the factors associated with school autonomy, namely teacher incentives, material resources, and professional development. Her overall conclusion is that the study has not shown clear differences in outcomes between centralized and autonomous schools (school type is only a significant predictor in one example, third grade classroom mean Spanish scores). An initial hypothesis of the paper was that the effects of decentralization contribute to changes in teacher behavior, with resultant changes in student outcomes, but the study has not shown a clear relationship between these three²⁶².

²⁶² Supporting the findings of Parker, Gershberg and Kaestner (2002) show some skepticism at the results of the King and others papers because of the non-random participation of schools in the reform program which, according to these two authors, was addressed using statistical procedures demonstrably not effective.

Despite PRONADE's expansion by 1994, very little is known about its real impact on the ground or on student learning achievement. In 1997, MINEDUC launched the National Assessment System (PRONERE) to monitor students' achievement in mathematics and Spanish. Although a formal evaluation of student achievement in PRONADE schools has not taken place, the PRONERE's tests carried out in 1999 and 2001 included some PRONADE schools in its sample of students.²⁶³ Although average scores for PRONADE students are not among the highest, the results are encouraging given the lower base from which many of the PRONADE students begin, and the relative disadvantaged position of the communities from where the students come.²⁶⁴

A World Bank study on student achievement in mathematics and reading was conducted in Guatemala in 2002. The study combined the test instruments developed by the UNESCO's Regional Office in Latin American and the Caribbean (OREALC) in 1997 for a comparative study in Latin America, with items developed by the Universidad del Valle for the MINEDUC in Guatemala. Without controlling for the characteristics of students, teachers or schools, the results show that PRONADE schools get some of the worst average scores, even within rural schools.²⁶⁵ However, controlling for these background factors these negative findings disappear. In fact, they found that in comparison with urban public schools and regular rural schools, PRONADE helped students achieve higher scores in Spanish.

Finally, Di Gropello and Marshall (2004) assess the PROHECO impact on student learning in Honduras using data from the UMCE's 2002 and 2003 data collections. As with the Sawada and Ragatz paper (2004) they make a link between improvements in teacher behavior (measured by work hours, frequency of homework, school closings, etc) and student learning, and the results are generally robust to corrections for selection bias.

IV. Explaining the Impact

As was shown in the previous sections, the SBM reform has had an important impact in several areas of the education system in the Central America sub-region. The impact, however, has not been the same in all of the indicators and shows similarities and differences across the four countries. The degree of the impact of SBM on different indicators and the similarities and differences across the countries can be explained to a large extent by the following factors: 1) the assets of the actors and communities involved; 2) the provisions that are made in the reform design; and 3) the context of implementation such as socio-political factors operating at both national and local levels.

All these factors mutually influence each other. But for analytical purposes, the discussion will focus on one at a time. As discussed in section I, assets include multiple resources such as skills and informational, organizational, human, material and financial assets; reform design has to do with both the objectives and the *de jure* provisions regarding the operation of the program; and the context of implementation consists of a series of sociopolitical factors that determine whether the reform, once adopted, can be sustained, and whether it is implemented according to the *de jure* provisions. Accordingly, in what follows, an effort is made to explain how and to what extent the

²⁶³ de Baesa (2001).

²⁶⁴ Valerio and Rojas (2004).

²⁶⁵ The World Bank (2004a).

differences in availability of assets, reform design and contexts of implementation help explain the progress and impact of the SBM models in terms of school and community empowerment, teaching and learning environments, and final outcomes such as student achievement within and across the four countries.

A. EXPLAINING IMPACTS AND PROGRESS IN TERMS OF ASSETS AVAILABLE AND LINKING TEACHER EFFORT TO LEARNING OUTCOMES

As was said before, the success of the SBM models depends to a large extent on the assets that the actors and communities involved already have and the ones they receive according to the provisions of the reform design.

a) First Order Effects

Community empowerment is high in spite of poor assets. For the SBM models to work properly, the school or community councils should be able to carry out the functions that have been delegated to them. By assuming decision-making powers that they did not have previously, or by increasing their influence in areas they already affect, the councils are empowered. The effectiveness of this empowerment depends on the assets that the members of these councils have.

Because the reforms target different types of communities in the various countries, there is variation in the type of assets available in each case. In El Salvador, Guatemala and Honduras, the programs targeted poor, rural areas that lack material, financial and educational assets. In the case of Guatemala and Honduras very poor and isolated rural areas that did not have a school were targeted, which means there was little pre-existing knowledge of how schools work in these communities. In the case of El Salvador EDUCO was originally a grassroots experience, so the sense of ownership and motivation might be stronger than in Honduras and Guatemala. The Nicaraguan ASP model seems to be the better placed in terms of assets since the initial targets were larger secondary schools located in relatively well-to-do communities that had more financial resources. The schools were already operating and many parents were participating, so they had some previous experience and knowledge of how a school functions. Finally, since joining the program was voluntary, all the actors involved had the right motivation to participate.²⁶⁶ Summing up, because of the type of communities they target, the SBM models of El Salvador, Honduras and Guatemala look similar in terms of community assets, although, across these countries, the communities targeted in Guatemala and Honduras have fewer resources. Higher levels of SES are found in the ASP of Nicaragua.

Across the region, thousands of SBM schools are functioning, attesting to at least some degree of community empowerment. Parents are making decisions on matters related to school management (hiring, supervising and paying) and budgeting that they did not affect before, more so in El Salvador, Guatemala, and Honduras, and less so in Nicaragua where parents seem to be less empowered. This suggests that even without previous experience in managing schools, poor rural

²⁶⁶But this has changed since the introduction of the Education Participation law of 2002. Beginning in 2006 all the schools in the Nicaragua education system must be participatory schools.

communities have certain skill-sets and motivation to manage their schools and that the reform was able to harness and develop local capacity despite the lack of parental education, resources and experience in management. In Nicaragua, reform design was somewhat more focused on enhancing school autonomy through the role of the school director rather than on providing all the necessary support to communities. The SBM models in Central America demonstrate that, with the right type of assistance, even very poor and undereducated parents are able to run schools.

Poor community assets frequently mean poor school conditions. How does the physical and material conditions of the schools relate to the assets already possessed by the communities and other key actors in the schools? As was pointed out before, if community schools are concentrated in the poorest and most rural parts of the country it seems likely they have fewer resources and learning materials. This is certainly the case in Guatemala and Honduras. Communities have to meet certain requirements to be eligible such as not having another public school nearby. In Guatemala and Honduras, and even in El Salvador, schools begin to function in private houses or in huts built by the communities. So, SBM schools in these countries frequently begin with insufficient physical and material conditions, which are not always compensated by SBM programs. A different story holds for Nicaragua where students come from slightly better-off families.

Poor teacher assets can be a constraint for innovative teaching methods. An important component of decentralization in the context of education is to maximize teacher effort. The evidence reviewed above suggests that the schools in the SBM models are maximizing teacher effort to a greater degree. If parents have more say in how the school is run, or more power to sanction poor performing teachers and directors, then it seems likely that school personnel will put forth more effort. Indeed, community school teachers work more days and hours. However, their teaching methods, overall, seem to be no different from the ones used in traditional schools. This may raise an issue of reform design (lack of community participation in pedagogical matters and/or lack of teacher autonomy) which will be further explored. It may also arise due to a lack of teacher assets (skill, knowledge, experience, creativity). Teaching methods are likely to depend to a large extent on the assets already possessed by teachers. Teacher “assets” such as education and experience are considered important in educational delivery. In fact, much of the financial incentives that teachers get in the region are based on such assets. The skills and training that teachers bring with them to work are likely to help explain the degree to which the decentralization scheme is implemented inside the classroom, just as parental education and community assets will affect the overall implementation.

Table 5.14 reviews some basic teacher assets in the four countries. The results are, once again, mixed across countries in the region, although they are generally less favourable for autonomous schools. For Nicaragua the autonomous school teachers are more experienced but less likely to have a college degree. In El Salvador the opposite holds, as EDUCO teachers are highly educated and comparatively in-experienced. For PROHECO, targeted in very small communities, the teachers are less likely to have a degree from the national teacher’s university (UPNFM), are less experienced and in a majority of cases did not attend a normal school. Finally, in rural Guatemala, the data from Marshall (2004b) show that PRONADE teachers are also less educated, and have less experience, than control school teachers. Overall, there does not seem to be a very clear cut relation between teachers’ assets and teaching methods, although having a high

proportion of teachers with no teaching certificate (such as in Honduras) and little professional experience is likely to make it more difficult to implement innovative teaching methods.

Table 5.14: Teacher Education and Experience

Variable	Nicaragua		El Salvador		Honduras		Guatemala	
	Non-Auto	Autonomous	Public	EDUCO	Public	PROHECO	Public	PRONADE
Percent Teachers with University	44.5	38.2*	30.0	74.0*	6.4	2.9*	2.5	0.0*
Percent Teachers without Certificate					3.9	54.8*		
Teacher Experience	5.8	7.2*	9.5	3.9*	7.6	2.2*	9.7	4.6*

Source: Nicaragua data 2002; UMCE 2003; Marshall, 2004b; Sawada and Ragatz (2004).

Notes: Asterisk means that comparison is significantly different at $p < 0.01$; $p < 0.05$, or $p < 0.10$ level.

b) Second Order Effects: Multivariate Analysis of Impact on Achievement

The evidence presented in previous sections on first order effects resulting from SBM implementation and differences in assets (especially for teachers) helps to form a picture of the dynamics of community schooling in Central America. In this section we continue this discussion by replicating the analysis of Di Gropello and Marshall (2004). Using multivariate analysis that introduces groups of variables one by one we can not only pinpoint the marginal effect of community school participation on student learning but also consider how other factors interact with this variable. This kind of analysis allows us to consider community and teacher assets together with other variables (like teacher effort) that we expect to be affected by implementation. We then can move on to larger, macro-type influences such as program design and contexts (next sections).

What are the factors that condition the results in academic achievement of the students in SBM schools compared to their traditional counterparts? Following Di Gropello and Marshall, the coefficients presented in Table 5.15 represent the marginal effect (in standard deviations) of studying in a SBM school relative to the control categories. We then gradually add up groups of variables (community SES, school and teacher controls and teacher effort) to see how this marginal effect varies when controlling for these variable. In the first model student test scores are regressed onto student gender only (and the community school dummy), which provides the most basic comparison of how community school students compare with their regular school counterparts. Not surprisingly, we see that in Guatemala the PRONADE schools start out lower when only accounting for these basic controls.

Table 5.15: Effect of Community/Autonomous Schools on Spanish and Mathematics, Summary of Regression Analyses, Guatemala, Honduras and Nicaragua

Model:	Guatemala		Honduras			Nicaragua	
	World Bank 2002		Spanish	Math	Science	Spanish	Math
	Spanish	Math					
1. Student gender	-0.22 (-1.49)	-0.24 (-1.82)*	0.08 (0.67)	0.15 (1.16)	0.29 (2.42)***	0.01 (0.07)	-0.02 (-0.26)
2. Student and community SES	-0.04 (-0.35)	-0.08 (-0.75)	0.17 (1.04)	0.22 (1.50)	0.34 (2.45)***	-0.02 (-0.22)	0.01 (0.05)
3. Plus school and teacher controls	0.14 (1.11)	0.07 (0.59)	0.23 (1.12)	0.44 (2.06)**	0.44 (2.34)**	-0.01 (-0.10)	-0.01 (-0.16)
4. Plus teacher effort	0.16 (1.24)	0.13 (1.04)	0.11 (0.54)	0.37 (1.65)*	0.16 (0.84)	-0.04 (-0.36)	-0.01 (-0.16)
Sample Size	3,103	3,103	975	952	974	2,596	2,575

Source: Nicaragua data 2002; UMCE 2003; World Bank, 2002. Notes: Dependent variable is standardized test score with mean of zero and standard deviation of 1.0. All parameters refer to dummy variable of community/autonomous school, and each is interpreted in relation to "control" (i.e. non community) schools. Variables are added in each model, and the sample size is the same for each estimation. For Guatemala the controls also include the incoming test score in the subject from 2001. All results refer to third or fourth grade students. t-ratios are between brackets. Asterisks indicate statistically significant at 0.10 (*), 0.05(**) and 0.01(***) levels.

When controlling for community, teachers and school assets, the impact of community schools generally improves. In the second estimation household and community controls for SES, parental education, child labor and school attendance are added. If community schools are serving different clients (i.e. poorer) then we should expect the relative effectiveness to be greater (or less negative) once we take into account these differences; the results in Table 5.15 demonstrate this is the case in Guatemala and Honduras. In Guatemala, the entire difference between PRONADE and control disappears once we take into account differences in student background. In Honduras, the difference in favor of PROHECO schools tends to increase when controlling for the different socioeconomic status (not as much as expected because an effort had already been made to identify a control group close enough to the PROHECO group²⁶⁷). As expected there is little and ambiguous change in Nicaragua, where the autonomous schools are slightly more affluent than the control group.

In the third estimation the teacher and school controls are added. As shown above, community school teachers in these three countries (Honduras, Guatemala and Nicaragua) have lower educational qualifications and are also, with the exception of Nicaragua, less experienced. For the school controls like teaching materials and total enrollment the differences are less clear cut between SBM school and control in the region. As expected, the inclusion of these variables in Guatemala results in the PRONADE marginal effectiveness increasing vis-a-vis the control schools. In fact, although insignificant, PRONADE schools score higher than the control schools once these factors are added. In Honduras, the trend is also to increase the community school effect. Finally, in Nicaragua there is almost no movement in the coefficients when taking into account these variables, which is consistent with what has been detailed earlier since the

²⁶⁷ See Di Gropello and Marshall (2004).

autonomous schools have similar, or even better assets in terms of teaching materials, compared with control schools.

The link between teacher effort and academic achievement is not consistent across countries. Indicators of teacher effort are added in estimation 4. These include measures of: days worked in the school and/or teacher absences and total work hours per week, school closings (in Honduras), homework frequency or frequency of going over previous material (in Nicaragua), teaching methodology, and class size and number of grades. If community schools have succeeded in making changes in these kinds of outcomes—and they are positively associated with test scores—then we should expect the marginal effect of community schooling in the production functions to decrease. In other words, the positive coefficients for community schools in Guatemala and Honduras should get smaller; and the negative ones for Nicaragua get larger. However, the results in Table 5.15 fail to provide a uniform picture.

There is strong evidence in Honduras that higher teacher effort, associated with autonomous schools, is also associated with higher test scores, but such evidence is much weaker for Nicaragua (although the dummy coefficient in Spanish moves in the right direction) and, even more, Guatemala. This can cast some doubt on the degree to which community schools have made improvements in teacher effort characteristics that, in turn, translate into differences in student achievement in Guatemala and Nicaragua. From the previous evidence, there is ground to think that teacher effort may not have improved very substantially in Nicaragua; while the results for Guatemala are more surprising suggesting that increased teacher effort did not translate into higher scores in that country.²⁶⁸ However, before we rule out this link for these two countries altogether, we need to make an important point. The measure of teacher effort adopted in the regressions is somewhat heterogeneous, capturing different aspects which may not have evolved in the same direction. For instance, we know that teaching methodology changed little in the countries under analysis; or, still, class size, an imperfect measure of teacher effort, may have unpredictable impacts on achievement (as appears with class size in Honduras, which is quite strongly positively related to achievement, driving part of the results on the teacher effort variables).

The various estimation results in Table 5.15 are not easily summarized. For Guatemala and Honduras the community school treatment clearly needs to take into account the very different environments that these schools operate in. This relates not just to student background but also teacher assets. In Nicaragua the targeting scheme was very different, and it is not the case that autonomous schools are serving poorer communities.

Capacity is maximized and related to academic achievement in Honduras and El Salvador, capacity is also maximized in Guatemala but the relation with achievement is less clear cut. Overall, the evidence presented for Honduras, and the one that was presented for El Salvador by Sawada and Ragatz (2004), suggest that autonomous schools have been successful in providing learning environments that are equal or even higher than their public school counterparts, although targeting poorer communities, by maximizing existing capacity (mainly by working more and limiting class size) to make up for the lack of teacher and parental capacity (in particular in Honduras). The link between capacity utilization differences and student outcomes is encouraging,

²⁶⁸ It is also true that different databases have been used for Guatemala, which can produce somewhat inconsistent results.

and provides *prima facie* support for community schooling on pure efficiency grounds. This is especially true in Honduras where PROHECO teachers are paid less and have fewer qualifications.

The evidence provided for Guatemala, while less positive, still shows that, in spite of lower teacher assets, PRONADE schools manage to provide a learning environment as good as their public counterpart for students with similar characteristics, although the link between improved capacity utilization (which higher teacher effort also illustrates in Guatemala) and achievement cannot be directly made.

Overall, across these three models, we seem to have a picture where SBM school parents concentrate their oversight to the most visible aspects of teacher effort—their attendance and hours worked—without entering classrooms and instigating changes in teaching methodology and classroom management, or choosing the best teachers. In other words, SBM parent councils may not be striving to create the best schools; they may simply want the most efficient.

Lower levels of efficiency in Nicaragua. The picture is somewhat different in Nicaragua where autonomous schools perform as well as non-autonomous ones but with slightly more community and teacher assets, which suggests somewhat lower levels of efficiency (although class size is kept larger counter-acting this trend).

B. EXPLAINING THE IMPACT IN TERMS OF THE REFORM DESIGN

So far the analysis of the impact of SBM on student outcomes has focused on linking differences in implementation and assets with outcomes like student achievement. What remains is an analysis of additional “conditioning factors” that are likely to determine not only the success of the SBM in affecting first order changes in schooling but also the degree to which these differences translate into observable second order differences. These factors are left for last for the simple reason that they are, of all of the possible influences on schools and schooling outcomes in these countries, the most difficult ones to assess from an evaluation standpoint. Nevertheless, they are likely to provide some additional clues about SBM performance.

The first factor, that we will briefly review here, is reform design.²⁶⁹ In section II, it was shown that there are differences in reform design in aspects related to institutional arrangements, organization, membership, characteristics and functions of the school councils, financial transfers, and teacher salaries and benefits. Among the differences in the reform design that are most relevant for explaining the impact of the models on community and school empowerment, teaching and learning environments and final outcomes such as enrollment rates, internal efficiency and student learning the following can be mentioned: the objectives of the reform, its coverage, the composition of the councils, the range of responsibilities delegated to the school councils, the provisions for relevant parental capacity building, and the system of transfers and teachers’ incentives.

Objectives of the reforms. In terms of the reform objectives, as already noted, none of the SBM models considered in this study had community empowerment or quality enhancement as primary

²⁶⁹ A more detailed analysis of the link between reform design and outcomes can be found in Rapalo and Marshall (2004).

objectives of the SBM reforms. As such, any impact on empowerment and quality is more a *by-product* of the reform than an explicit target. By the objective of the reform design, the Nicaragua's SAP seems to have had the highest potential to contribute more to the empowerment of the school and communities, as school autonomy was a key instrument to increase social accountability and operational efficiency. However, for other aspects of reform design (see below), recent qualitative analysis of autonomous schools found that the reform has not reconstructed the social pact to increase parental participation in their children's education, but has had a "financial-administrative" focus.²⁷⁰ In general, because of their lack of focus on quality, the SBM did not make adequate pedagogic provisions to improve school quality, as will be discussed below.

Coverage of the programs. In terms of coverage of the program, we have already noted that some reforms are more targeted than others to poor areas, with consequences on community and teacher's assets and educational achievement. Another distinction concerns the extension/coverage of the models in terms of schools and students. While EDUCO, ASP, and PRONADE all cover a substantial fraction of schools, PROHECO is much more focused, serving a relatively small number of schools. This may partly explain the better results of the model, which may be due to more efficient implementation, perhaps because of better supervision from program operators.

Composition of school councils. In terms of composition of the councils, section II makes it clear that all countries have granted a key role to parents in the management of the autonomous schools, which has effectively translated into higher levels of empowerment. However, interviews revealed that no program has been able to involve all the community members all the time²⁷¹. Mothers of students and community leaders are most frequently involved in school councils. There is little evidence to show that parents in the councils rotate as expected to give chance to other leaders elected in a democratic way. The case of Nicaragua is different insofar as the director has a leading role in the councils, limiting somewhat, as we have seen, parental empowerment (and the 2002 participation law gave even more power to school principals making them executive directors and allowing them to run the councils almost at their will).

Responsibilities of school councils. All countries also granted extensive responsibilities in teacher management, school maintenance and budget oversight to the councils which resulted in higher *de facto* decision-making in these areas and, overall, higher teacher effort. However, little or no transfer of pedagogical responsibilities to parents led to little or no decision-making in this area and unchanged teaching practices, which, in part, may have also been produced by little expertise or interest of parents themselves to instigate changes in the classrooms. In turn, no or little change in classroom processes hampered the impact of all the models on learning, compensated by a positive impact of small class sizes, which can be to some extent associated with more individualized learning, and higher work hours in Honduras and El Salvador. Another important highlighted aspect of all models is the decreased level of teacher autonomy which essentially occurred by design by shifting the balance of power towards parents: it is likely that this also explain the lack of pedagogical innovation of SBM models.

²⁷⁰ Florez, Ruiz et al. (2003); Gershberg, et al. (2001).

²⁷¹ This has been confirmed in a recent assessment of PROHECO (ESA, 2004).

Provision for parental capacity building. In El Salvador, Honduras and Guatemala, the SBM models have all made provisions for relevant parental capacity building and technical assistance to compensate for the lack of assets and experience in running schools, with some success if we judge from the level of community empowerment achieved in all these countries. In fact, almost all the organizational structure underlying the management of these programs revolves around the issues of parental capacity building and assistance and the transfer of financial resources. In particular, one key element that has promoted community empowerment in Honduras and Guatemala has been the role played by the promoters and the ISE, respectively (although they provide largely administrative training with very little pedagogical training). In all countries, except in El Salvador, the content and duration of the training for school councils is decided by the central ministry or coordinating unit. As part of a general policy, recently, the Ministry of Education of El Salvador has given the power to all schools to decide about their own training and to contract trainers directly. This arrangement, although apparently instrumental in providing more power to school councils, seems to be working against them in the EDUCO schools because little funding is given and the location of the schools provides little access to hire quality trainers.²⁷² Despite the differences and the generally satisfactory results, in all countries there are some complaints about the content, relevance, duration and follow-up of the training. Again, in terms of technical assistance in administrative matters, the role of the ISE in Guatemala and the promoters in Honduras seems to be particularly important, while EDUCO schools, although they can hire accountants, complain about the little help they get from the departmental offices. Both in El Salvador and Nicaragua, many actors think that the administrative process should be simpler and more transparent. Speaking about Nicaragua, section II makes it clear that in this aspect as well the ASP program is the one that most differs from the others because no specific external facilitator/trainer is hired to help the councils. Because the schools are already running, the communities of autonomous and non-autonomous schools are similar and the principal of the school plays such a large role in the management of the school, Nicaragua has not seen the need to create intermediary actors to provide training and technical assistance as has been done in the other countries.

Transfers. Another important element of reform design is the design and implementation of the monetary transfers to schools (see section II) and the provisions for budget generation. Here again there is substantial difference between El Salvador, Honduras and Guatemala which allocate fixed amounts per teacher to the autonomous schools, plus a pre-determined amount for teaching materials, and Nicaragua which allocates funds on a per-student basis leaving the schools free to decide how to allocate them. Additionally, in Nicaragua, the schools had (initially) the right to charge fees and still have the possibility of undertaking fund raising. The evidence presented on the availability of teaching materials and equipment suggests that autonomous schools are decently provided with materials and equipment in Nicaragua, much less so in the other countries, suggesting limitations in the current allocation of funds in El Salvador, Honduras and Guatemala. In fact, in interviews carried out for this study, schools council members in El Salvador, Honduras and Guatemala argued that funding is insufficient and that they are only able to buy the most basic materials. Moreover, there are legal restrictions as to what can be bought with the transfers. Given that, it is unlikely that the strategy applied in Nicaragua can work in the communities covered by the other countries, where the socio-economic characteristics of the parents and the size of the communities limit additional fund-raising activities by parents or other community members,

²⁷² Nochez (2003).

requiring a somewhat different strategy for the allocation of resources, which should include a share of non-salary recurrent costs proportional to the needs of the schools (see section on policy recommendations).

Interestingly, transfers seem to be designed to produce stronger incentives for maintaining small class sizes in the case of El Salvador, Honduras and Guatemala, and incentives for increasing enrollment and class size in Nicaragua. In El Salvador, Honduras and Guatemala the amount transferred increases with the number of teachers hired and in Nicaragua transfers and user fees increase with enrollment. None of the transfer systems appear to create direct incentives to improve the quality of education, although, to some extent, small class size seems to favour individualized learning which has a positive impact on achievement; and, by subtracting last year drop-outs from this year initial enrollment, the formula applied in Nicaragua encourages internal efficiency and, indirectly, quality. Additionally, only in Nicaragua transfer formulae take into account equity concerns, although the new law, approved in 2002, does not have provisions to compensate small schools if they do not have enough students and fund raising activities will benefit more those schools that are located in well-to-do neighborhoods, creating equity problems. Equity adjustments are clearly less important in the other three countries where autonomous schools are all rural and poor, but may become necessary if the models are scaled-up to incorporate larger and wealthier schools (as is already happening with EDUCO).

Teachers' incentives: monetary benefits and their link with teachers' assets. Finally, a key element of all the reforms is also the role of teachers' incentives. Teachers' incentives will be an important determinant of teachers' assets and teacher effort. Table 5.5 of Section II makes it clear that, while salaries are similar across SBM and traditional teachers in Nicaragua and El Salvador, they are lower for SBM teachers in both Guatemala and, even more, Honduras. Other monetary benefits are also lower in autonomous schools in these countries. There seems to be a clear relation between teachers' assets as measured by education and experience and the lower monetary benefits in Honduras and Guatemala. In fact, these countries are already prone to have the least skilled teachers teaching in community schools because of the location of the schools and the existing teachers' incentives are doing nothing to counteract this tendency. Although Honduras may be particularly successful in maximizing the impact of its available community teachers, it seems clear that achievement results would be even better if PROHECO schools had higher-quality teachers. This is also likely to be true for Guatemala. Additionally, we have seen that teachers' assets are also likely to be related to teaching methodologies which, in turn, are likely to be related to learning: by investing in more skilled teachers, the SBM models in Honduras and Guatemala may be able to increase class size moderately, possibly generating savings.

Contract tenure and teacher effort. Finally, teachers' incentives will also affect teacher effort. Low salaries (or large delays in salary payment) may for instance have a negative impact on teacher motivation, although this does not appear to be the case in Honduras and Guatemala. More interestingly, fixed- instead of open-ended contract tenure, used in all four countries, may tend to motivate teachers to do better if contract renewal is based upon fair and accurate evaluations of teacher performance. Additionally, in the cases of Honduras and Guatemala, the reform design includes provisions penalizing teacher absences: in Guatemala teachers must compensate for days lost and in Honduras absences are deducted from salaries. In the case of Nicaragua, it is less likely that teacher effort is affected by the reforms because, although teachers are also appointed

through fixed-term contracts, they continue to be protected by a general law that regulates the whole system (*Ley de Carrera Docente*). On the other hand, user fees in Nicaragua may provide an incentive for teachers to work in autonomous schools.

Teachers incentives and teacher permanency in the non-traditional system. Overall, judging from generally higher teacher effort, these mechanisms, together with the community empowerment that they confer, seem to be working. Two limitations of the models, however, are that: (a) none of the programs have established an adequate system of evaluating and monitoring teacher and school performance; and (b) the combination of lower monetary benefits and few professional development prospects could end up hampering the motivation of teachers who are doing well and would otherwise stay into the autonomous system. The first point will be further developed in the sub-section on contexts. On the second point, there is some evidence that, in Honduras and Guatemala, teachers move to traditional schools as soon as they get the opportunity. All SBM programs have put in place a system of teacher training, but this does not seem to be enough. Strategies to improve the medium term incentives for teachers to stay in the SBM system need to be found and applied. In fact, all SBM models (including Nicaragua, where a separate system for teachers in autonomous schools would be advisable) face the challenge of introducing some kind of professional development system, including creating a merit system (*escalafon*) for their teachers. Finally, we should also note that none of the SBM models has made provisions for special training for directors to develop leadership and managerial skills, which appears to be an important characteristic of effective schools.

C. EXPLAINING THE IMPACT IN TERMS OF CONTEXTS OF IMPLEMENTATION

The discussion in the previous sub-sections shows that the impact and progress of the SBM models in the education systems of the region have been affected by the assets of the communities and actors involved and by the provisions that are made in the reform designs. In what follows an effort is made to show that the impact, progress and sustainability of the SBM models have been also affected by the contexts of reform implementation. In this section we will briefly review some of the socio-political factors which appear to be particularly relevant for the implementation of the SBM reforms: state-related variables such as the level of political commitment, state and social linkages such as the inclusion of different groups in the policy reform, traditions of local participation, institutional capacity and efficiency in reform administration, and availability of information. We should also point out that the success of the SBM models will also depend on what goes on in the rest of the education sector because of the linkages between the different education levels and public and private delivery (for instance, an expansion of the private sector can free teachers for the public sector making more teachers available to autonomous schools).²⁷³

Political commitment. In terms of state-related variables, there is a consensus that successful implementation of social policy reforms depends on state commitment. In the case of the SBM reforms in the region, support was strong at the beginning and has continued steadily in El Salvador and Nicaragua, while it has shown some variability in the cases of Honduras and Guatemala where there have been changes in the ruling parties and in key bureaucratic positions in the ministries of education and in the coordinating units. In El Salvador, the government has, in

²⁷³ Illustrating this point, a massive expansion of the tertiary system much through the private sector in El Salvador helped EDUCO to hire lots of teachers.

effect, adopted EDUCO as its educational policy for rural areas. In Guatemala and Honduras the SBM programs were initially designed to improve enrollment rates in poor and isolated rural areas. In Honduras, the scope of the program has remained the same but in Guatemala the program was quickly taken to scale. In the Portillo administration, however, there was an open attempt to terminate the program and this slowed down its implementation. In general, turnover rates have affected the expansion and implementation of the programs but have not changed their main objectives and their “thrust” (even in Guatemala), indicating that local communities have developed a strong preference on behalf of safeguarding the reform (stake-ownership). Lately, however, governments in Nicaragua and Honduras are discussing the possibility of shifting the focus of the decentralization reform from SBM models to municipalization. It is also interesting to note that, in all cases, the World Bank and international donors in general have played a constructive role in combating the tendency of new administrations to scrap the programs of the previous administration. Because the new administrations realize that these programs are Bank-sponsored, they hesitate to dismantle them.

Inclusion in the reform. Regarding state-society linkages, there is also evidence that including diverse groups from civil society (civic, business, university and religious leaders, notable personalities, opinion-makers, NGOs, consumer groups, teachers’ unions, opposition parties) into policy discussions, both prior to the reforms and throughout the implementation process, generally helps implementation. In both aspects the SBM reforms have come up short. El Salvador seems to be the most inclusive case of all four. There were national dialogues at the start of the reform and repeated consultations during the implementation period. In Guatemala, there was a dialogue and consultation prior to the implementation of the reform but this has not continued during the implementation phase. In Honduras, PROHECO was created outside the MINED and was initially run by a commission of notables appointed directly by the Honduran president. There has been very little dialogue and consultation prior and during the implementation, and the same can be said in the case of Nicaragua.

In no country have the reforms included the teachers’ union who are arguably the biggest cost-bearers of decentralization reforms, although some effort to do that has been attempted in El Salvador, perhaps explaining why relationships with the teachers’ unions are more harmonious there than elsewhere. In general, teachers, who have not developed “stake-ownership”, remain the main opposition and can potentially derail the reform, especially in Honduras and Guatemala where teacher unions are relatively strong. As we have seen, reform designs in these same two countries have also not been favourable to the creation of incentives for teachers in the autonomous system, aggravating the situation and creating serious issues of sustainability in spite of the success of the models in terms of empowerment and coverage.

Traditions of local participation. Another contextual aspect that may hinder the implementation of the decentralization reforms, especially in terms of community empowerment, may be traditions of local participation. Despite the apparent advantage of the Nicaragua program in terms of the type of communities they target, the programs in El Salvador, Guatemala and Honduras have advantages in terms of the tradition of social participation and the creation of social capital. Durston (1999) suggests that programs like PROHECO “have the advantage of not having to concentrate efforts in fighting against institutional and traditional habits to establish the new process.” This is to say that since the relationship between parents and teachers is brand new, there

is a better possibility to establish relationships of mutual respect, accountability, trust and compromise with the educational outcomes. Moreover, according to this author, the rural communities have better contextual conditions for creating social capital and for making possible that the school councils may influence some other social processes in the communities.²⁷⁴ In general, parents in the rural areas have more sense of community, more experience in social participation and more willingness to sacrifice time and money to participate in these types of programs. Parents of these communities might also feel more empowered because they know that this is probably the only way that their children may have access to education. In the case of Nicaragua, parents and community members know that whether or not they participate they have a school where they can send their children.

Institutional capacity and efficiency of the administration: sustainability of institutional arrangements. The technical capacity and efficiency of state agencies both at the central and local levels are crucial to ensure the proper implementation of decentralization reforms. A first issue is the sustainability of institutional arrangements. In the SBM models discussed here, the state agencies provide schools or community councils with the necessary resources, such as money, training and information. State agencies function differently in the four cases. In El Salvador and Nicaragua the coordinating units are within the ministries and work with the school councils with the help of the local MINED offices (departmental or municipal) (although in El Salvador, councils also work with assistants that they hire themselves). In the cases of Honduras and Guatemala, the coordinating units belong to the Ministries of Education but work more independently. Their work with the councils is carried out almost exclusively with the help of intermediary agents that do not belong to the MINED, with little contact with the local units of the MINED. This is why in these countries the programs are seen more as parallel programs than programs belonging to the MINED, with possible issues of sustainability. It has, however, been recognized that the intermediaries have been particularly useful in these two countries, suggesting that an hybrid type of solution (involving for instance both the deconcentrated units and fixed-term external agents) may be needed.

Technical capacity of coordinating units. The composition and capacity of the coordinating units is important to ensure their proper functioning. In all four cases the personnel of the coordinating units are selected by the MINED. Most of the time the personnel are selected for their technical capacity, although politics and personal connections may also enter into the selection process, especially in Honduras and Guatemala. Judged by their performance, the coordinating units have done a relatively good job, especially in El Salvador and Nicaragua. If we review some evidence of institutional strength in terms of financial transfers, provision of training and availability of information, we find, however, that: (a) there have been problems with the regularity of the transfers in some countries, which can indicate a difficult relationship between the ministries of education and finance but also low technical capacity of the coordinating units (this is particularly the case in Honduras and Guatemala); (b) the changes in government and personnel in the coordinating units have affected the provision of training in all the countries because they have changed the rules (community and schools actors in all the countries feel that the provision of training was stronger and better at the beginning of the programs); and (c) the

²⁷⁴ Durston (2002).

models have not generated enough and relevant information to evaluate and monitor the performance of their schools.²⁷⁵

Availability of information and monitoring of teacher behavior. Related to this topic, another question that can be asked is whether the SBM models are providing school councils with the needed information to carry out their functions. In all countries the programs provide school councils with information regarding their functions, especially in terms of management of material and human resources. However, parents also need information on teacher performance to exercise effectively their task of hiring and firing teachers. In most cases, it appears that the council members do not have enough information to select the best candidates and technically evaluate them. A related point is that parents usually find it difficult to monitor curriculum and pedagogy. The only criteria used by parents seem to be teachers' attendance and good behavior. These are still important dimensions which ensure, as we have seen, higher teacher effort in terms of hours worked, but having a more comprehensive picture of teacher and school performance would be helpful to enhance the impact of the models on learning. None of the programs provide information about school performance and teacher performance; and although schools do produce some information on promotion, drop-out and repetition, they often send it to higher levels, without using it or sharing it with the community. If information on teacher performance is incomplete and it is difficult to relate school performance to teacher performance, "monitorability" of aspects such as pedagogical practices will still be a problem and other mechanisms will need to be found to make teachers accountable on this ground such as: (a) setting-up effective supervision/inspection systems, involving directors and deconcentrated levels of the ministries of education in the direct observation of classroom practices; or (b) providing incentives for pedagogical improvement such as school competitions for the best school improvement project.

V. Conclusions and Policy Recommendations

The school-based management models considered in this study seem to be a potentially promising means to promote more civic engagement in education and to cost-effectively get better or similar educational results than traditional programs. In particular, community and schools appear to have been generally empowered and teacher effort strengthened, resulting in a better use of the existing limited capacity. This is more true for El Salvador, Honduras and Guatemala than for Nicaragua. Additionally, the models have had a very substantial impact on enrollment and are somewhat associated with better student flows. There is also evidence that academic achievement is at least as high in autonomous schools as in traditional schools.²⁷⁶ However, while some aspects related to school quality such as teacher/school effort have been prioritized in the models, some others such as availability of learning materials, teacher skills and pedagogical innovation have not been

²⁷⁵For instance, coordinating units have not had the technical capacity to conduct studies to evaluate the performance of autonomous schools vis-à-vis traditional schools, although they have received technical assistance by international agencies and consultants. In El Salvador, despite the proliferation of information, most of the information used to evaluate the program with a comparison group comes from 1996, in Nicaragua from 1997 and in Guatemala from 1999. In the case of Guatemala, the quasi-experimental study was not completed and did not use standardized tests. In Honduras, because the program is more recent, it is only until this past year that a systematic study of its impact has been undertaken. Additionally, the available statistical information to monitor schools' characteristics and performance is often of poor quality and incomplete.

²⁷⁶ In Guatemala, only when taking into account the poorer communities in which these schools are located.

sufficiently developed, limiting the potential impact of the models on the quality of education and learning. Additionally, the sustainability of these models remains at stake in most of the countries.

The evidence presented in this chapter, including the links that have been established with reform design, assets and the socio-political context, allows us to provide a set of recommendations for consolidating the good results of the models, improving their impact on the quality of the teaching and learning process and ensuring their sustainability.

Reform Priorities. Empowerment and quality should be introduced as explicit objective of all the models;

Pedagogical model. At the outset, the way forward in community schools should be to provide an integrated package (called *modelo pedagógico propio*) to give pedagogical strength to the model. The package should offer, in addition to community participation, bilingual education (if needed), multi-grade teaching, student assessment, teacher guides and in-service training, etc;

Pedagogical innovation: teacher autonomy. There is international evidence that increased teacher autonomy in pedagogical practices and more skilled teachers can be conducive to higher pedagogical innovation and improved teaching-learning processes. The effective school analysis undertaken in Chapter II confirms this finding. Increased teacher autonomy in pedagogical practices could benefit all model designs. At a minimum, given the importance of teacher participation in improving the quality of education, it is necessary to give teachers a more meaningful role by establishing support committees that can tackle issues and allow for their voices to be heard. More skilled teachers should also be attracted through the implementation of a better incentive framework (see below). Teachers' excellence also depends to a large extent on ongoing professional development opportunities. For Guatemala and Honduras it would be imperative to create special incentives (such as scholarships) for teachers who do not have a degree to get into a flexible program that allows them to be trained in pedagogical matters, while also working;

Pedagogical decentralization to communities. Another option would consist in providing more pedagogical responsibility to the communities themselves to foster changes in teaching practices. There is less clear-cut international evidence that decentralizing this type of decisions to community would lead to better teaching practices. Additionally, by empowering parents in this area, teachers may feel even less valued. If it is decided to provide more power to the school councils in pedagogical matters, the models should proceed with some caution, gradually extending authority to communities as they acquire and demonstrate capacity in this area. They should establish mechanisms of accreditation before they grant this power and determine what kind of power they wish to hand over. There are some pedagogical matters such as the setting of policies regarding curricula, programs and evaluation which should remain, in any case, centralized;

Transfer formulae. Transfer formulae should be modified, by basing the allocation of funds on the real demands that may come from the school councils themselves (through their School Education Plans), ensuring therefore higher shares for non-salary recurrent expenditure for materials and the like, and introducing allocation criteria that take into account equity, when

necessary, and performance (provision for small schools in Nicaragua, measures of student attendance or retention in Honduras, Guatemala and El Salvador);

Parental support. Continuous parental support through flexible and transparent mechanisms needs to be provided. Although the use of intermediate agents, such as NGOs and social workers, needs to be more fully assessed in Guatemala and Honduras, there is some positive evidence on their role in providing administrative support. In any case, these agents should receive training on a continuous basis, keep close ties with other local officials from the ministries of education, and use standard procedures and provide timely advice and support. It is also imperative that in future strategic discussions regarding the programs' expansion and evolution, the longer-term role and status of these external agents be addressed. It would also be important, in particular for the sustainability of the models, to define with precision and strengthen the role of the deconcentrated levels of the ministries of education (departmental and district offices). These levels could have particular relevance in pedagogical support and supervision to parents, teachers and directors. Additionally, it would be useful to assess the feasibility of having these levels hiring the external agents (in particular in Honduras and El Salvador), to contribute to the institutionalization and acceptance of the models within the ministry of education, while not losing the economies of scale that can be made by hiring external agents at an intermediate level (in contrast to the school);

Information on school and teacher performance and supervision mechanisms. A substantial effort should be made to provide good information on the performance of schools and teachers and make it available to all education actors (directors, teachers, parents, department and district education offices). The MINEDs could create a very simple model with the most important indicators (*orientaciones*) to measure teacher and school performance. Standardized testing should be used and disseminated. The model should be shared and validated with the parents and local community members and information should be produced in a systematic way to measure those indicators on a regular basis. A good information system will ultimately allow parents to obtain information on the performance of their children relative to the rest of the school, the performance of the school relative to other schools of similar characteristics, and the performance of the system against itself over time. Setting-up effective supervision mechanisms, involving directors and the deconcentrated levels of the MINEDs, would also be key to monitor teacher behavior in cases of imperfect information.

Teachers' skills. Financial incentives are key to make the programs attractive vis-à-vis the traditional system and to attract skilled teachers. Teachers' salaries and social security benefits should be balanced across traditional and non-traditional systems in Honduras and Guatemala. In all countries, it is important to ensure that fringe benefits be more similar between the traditional and non-traditional sector (teachers in community based programs usually lack access to medical and life insurance benefits and female teachers do not have access to maternity benefits and leave). In all countries, there would be room for introducing performance bonuses in the non-traditional sector. The key here is to be bold and rely on the local school council to determine the type and size of the bonus to be distributed at the end of each school year, and how to allocate the bonus among teachers. The idea is that school councils should guard against linking *permanent* rewards (such as salary level) to performance, but rely instead on cash or in-kind bonuses that are used to

specifically recognize the work of good teachers, and openly express the appreciation of the community;²⁷⁷

Teacher motivation and permanency in the non-traditional system: timely payment. Due to administrative and financial difficulties, some of which are beyond the control of the coordinating units or MINEDs, there have been frequent delays in payments of teacher salaries, especially in Honduras and Guatemala. In order to ensure that teachers remain motivated and interested in working in autonomous schools, it is imperative that salaries be paid in a timely manner. To do this, having the school based management programs' budgets integrated into the general budget of the ministry of education may probably help. Secondly, in all countries, the forms and paper work to liquidate the funds should be simplified. Thirdly, explicit priority should be given to the payment of salaries within the transfer of funds. Fourth, to strengthen transparency, the programs should also contract independent firms to do the auditing of the transferred funds. Fifth, if the liquidation of funds has to be done every three months, it would seem more appropriate to pay teachers' salaries in advance;

Professional development. While maintaining fixed-term contracts, which is at the very core of the incentive structure of autonomous models, a merit system (*escalafón*), similar to the one applied in the private sector, should be designed and implemented for all countries in the non-traditional sector to retain teachers (including regular salary increases based on seniority and qualifications, increased responsibilities, training options, etc). It is also important to change the perception of instability which is part of the non-traditional system. Stability should not be understood in terms of time but in terms of performance. Teachers should feel confident that if they perform well they will keep their jobs. This can happen if they know what is expected from them and how their work will be evaluated.

Directors: role. A comparison of Nicaragua with the other three countries suggests that directors should probably not be part of the school councils, or, if they are part, that their relative responsibilities be very clearly specified, to prevent communities from not being truly empowered in administrative matters (teacher and budget management). Taking advantage of the involvement of the communities in these matters, directors could take up a key role in academic matters in the schools, providing pedagogical support and supervision and ensuring a sound and constructive academic environment. Directors should probably be granted higher authority in larger schools (such as in Nicaragua), where monitoring school and teachers may be more complex. However, it will be necessary to ensure a democratic type of leadership which will require a more transparent way of electing directors and closer monitoring of their performance as well as special training and technical assistance to develop their leadership skills.

Training. Specific training should be introduced for directors to strengthen their management skills and leadership in a variety of areas, in particular in academic matters.

Institutional capacity of coordinating units. People in charge of the coordinating units should be selected according to their merit and not for political or other reasons. Their performance should be evaluated not only according to their individual actions but also according to the overall results of the community program. Their capacity of evaluating and monitoring schools should be

²⁷⁷ Also see Arcia and Belli (1999).

strengthened. Finally, to help institutionalize the programs, it should also be gradually envisaged to substitute the coordinating units by departments or offices that are fully part of the structure of the ministries of education;

Consensus and institutionalization. As already discussed, consensus is a decisive factor in the successful expansion and institutionalization of any educational reform. Where it is impossible to achieve absolute consensus, it is important to make sure that the main political forces know the program's goals and its achievements. When this is not possible, as was the case in Guatemala in the previous administration, it is important to make sure that other important stakeholders (such as the parents themselves, private sector, majors and others) are ready and organized to defend the programs. The SBM models should have a network of key people ready to act. More studies are also needed to determine the impact of the models on student achievement, repetition and dropout rates, as well as teacher effectiveness. To institutionalize and create consensus around the programs it is also necessary that they appear as part of the general policies and programs implemented by the government to improve the quality of education. As such, they should be included in the legislation on education, in laws regarding participation, in the development plans and, especially, in the national budgets. They should be seen as part of the routine of the ministries of education without losing their innovative character;

Teacher inclusion and sustainability. Finally, it is key to implement strategies to include teachers and teacher's unions in the reform process, by disseminating information on the reform, negotiating more favorable employment conditions for teachers in the non-traditional sector (see above), or granting higher teacher pedagogical autonomy. It is necessary to reiterate that teachers, who have not developed "stake-ownership", remain the main opposition and can potentially derail the reform, especially in Honduras and Guatemala where teacher unions are relatively strong. It is imperative for the same sustainability of the models to address the issue of teacher opposition.

Regional collaboration. A mechanism should be established that allows for community based programs to share their experience in the region. This can start with a summit of the ministries of education (or vice-ministries) of the four countries to analyze the results of this study. The purpose should be to develop a common agenda to solve the most urgent problems and to plan the long term sustainability of the models.

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Annex I: Tables and Figures for Chapter I

Table 1.1: Average Years of Education Attained			
	25 year cohort	40 year cohort	55 year cohort
El Salvador (2002)	8.05	6.41	4.04
Guatemala (2000)	5.36	3.85	2.11
Honduras (2003)	6.45	5.56	3.80
Nicaragua (2001)	6.23	5.36	2.98

Source: El Salvador: EPHM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2003; Nicaragua, EMNV 2001.
Notes: (a) simple average of the four countries under analysis.

Table 1.2: Average Years of Educational Attainment (Barro and Lee Dataset)					
		Population over 15 years old	Population over 25 years old	Change in years of schooling 2000-1990 for population >25	
				%	#
	1990	5.32	4.97		
Latin America and the Caribbean	1995	5.74	5.38	15%	0.76
	2000	6.06	5.73		
	1990	3.04	2.60		
Guatemala	1995	3.25	2.79	20%	0.52
	2000	3.49	3.12		
	1990	4.25	3.58		
El Salvador	1995	4.70	4.05	25%	0.92
	2000	5.15	4.50		
	1990	4.20	3.69		
Honduras	1995	4.50	3.89	10%	0.39
	2000	4.80	4.08		
	1990	3.65	3.60		
Nicaragua	1995	4.09	4.01	22%	0.82
	2000	4.58	4.42		
	1990	5.55	5.57		
Costa Rica	1995	5.77	5.82	8%	0.44
	2000	6.05	6.01		

Source: Barro and Lee Dataset.

Table 1.3: GER and NER in Pre-Primary, Primary and Secondary (MINED)							
		Pre-Primary		Primary		Secondary	
	Year	GER	NER	GER	NER	GER	NER
El Salvador	2002	48	43	93 105	82 (1-9) 85 (1-6)	48 61	24 (10-11) 47 (7-11)
Guatemala	2001	55	41	103	85	33	22 (7-12)
Honduras (a)	2001 2003	57 54	na na	108 119	na na	39 (7-11) 54 (7-11) 48 (7-12)	na na na
Nicaragua (a)	2001 2002 2003	26 28 29	26 28 29	104 109 106	82 86 84	54 57 59	36 (7-11) 38 39
Costa Rica	2002	87	86 (b)	105	99	66	59 (7-12)
Latin America	2000	58	na	130	97	86	64
<i>Countries with similar p/c income</i>							
Perú	2000	59		128	104	81	61
Colombia	2000	37		112	89	70	57
Jordan	2000	31		101	94	88	76
Romania	2000	73		99	93	82	80
Algeria	2000	3		112	98	71	62
Paraguay	2000	83		111	92	60	47
Ecuador	2000	69		115	99	57	48
Philippines	2000	na		113	93	77	53
Bolivia	2000	46		116	97	80	68

Source: Official Statistics of the MINED; The World Bank/WDI (2003). Note: (a) Previous years have been kept for comparison with other indicators; (b) Only includes 6-year old.

Table 1.4: GER and NER in Pre-Primary, Primary and Secondary (Household Surveys)						
	Pre-Primary		Primary		Secondary	
	GER	NER	GER	NER	GER	NER
El Salvador (2002)	44	41	95 105	85 (1-9) 87 (1-6)	47 64	30 (10-12) 52 (7-11)
Guatemala (2000)	23	21	99	78	39 31	28 (7-11) 25 (7-12)
Honduras (2002)	37	30	105	85	50	35 (7-11)
Nicaragua (2001)	34	28	111	81	58	39 (7-11)

Source: Household Surveys (El Salvador: EHPM 2002; Guatemala, ENCV 2000; Honduras, EHPM 2002; Nicaragua, EMNV 2001).

Table 1.5: Evolution of GER and NER					
		Primary		Secondary	
	Year	GER	NER	GER	NER
El Salvador (a)	1995	112	82	51	40
	2002	105	87	64	52
Guatemala (b)	1996	84	69	31 (13)	20 (11)
	1998	94	78	33 (15)	20 (12)
	2001	103	85	44 (22)	28 (16)
Honduras	1995	105	86	41	30
	2002	105	85	50	35
Nicaragua	1993	91	63	40	21
	1998	105	77	48	32
	2001	111	81	58	39
Costa Rica	1996	104	101	57	51
	1998	104	99	58	52
	2002	105	99	66	59

Source: El Salvador, EHPM, various years; Guatemala, MINED official statistics; Honduras, EHPM, various years; Nicaragua, EMN, various years; Costa Rica, MINED, official statistics. (a) Primary is grades (1-6); secondary is grades (7-11); (b) lower secondary without brackets and upper secondary (grades 10-12) within brackets.

Table 1.6: Survival Rates for the 7 to 17 Cohort (survivor plots)			
	SR to last grade of primary	SR to first grade of secondary	SR to last grade of secondary
El Salvador (2002)	75% (grade 9) 83% (grade 6)	70% (grade 10) 79% (grade 7)	69% (grade 11)
Guatemala (2000)	68%	54%	45% (grade 11)
Honduras (2002)	80%	53%	47% (grade 11)
Nicaragua (2001)	76%	67%	55% (grade 11)

Sources: Household Surveys.

Table 1.7: Age-by-grade distortion

Age for grade distortion (average age/official age)														
	1	2	3	4	5	6	7	8	9	10	11	12	1-6 average	7-12 average
El Salvador	1.128	1.124	1.114	1.113	1.073	1.073	1.068	1.062	1.056	1.066	1.066	1.056	1.101	1.062
Guatemala	1.203	1.201	1.190	1.167	1.126	1.133	1.134	1.158	1.126	1.110	1.115	1.089	1.100	1.083
Honduras	1.081	1.105	1.114	1.099	1.077	1.089	1.127	1.110	1.122	1.113	1.098	1.175	1.094	1.125
Nicaragua	1.043	1.085	1.083	1.058	1.074	1.068	1.112	1.081	1.076	1.082	1.114	1.110	1.026	1.063
Proportion of children out of age (%)														
	1	2	3	4	5	6	7	8	9	10	11	12	1-6 average	7-12 average
El Salvador	52.8	55.0	59.8	60.8	63.3	58.5	62.0	61.0	62.7	67.1	63.9	69.0	57.8	63.6
Guatemala	66.3	73.2	76.5	74.5	75.1	74.8	72.2	75.9	74.1	73.0	73.3	70.6	72.4	73.4
Honduras	76.0	74.1	76.9	75.0	75.3	80.8	76.6	78.5	79.1	78.5	79.1	82.2	76.1	78.5
Nicaragua	76.4	75.8	80.2	77.2	79.8	80.8	81.8	78.6	76.9	78.7	80.1	81.0	78.0	79.5

Source: Household Surveys

Table 1.8: Repetition Rate (different sources)					
	Source	RR First Grade Primary	RR Primary	RR First Grade Secondary	RR Secondary
El Salvador	MINED, 2002 HS, 2002 Estimates (a) 2002	16% 22% 35%	6% (1-9) ; 7% (1-6) 11% (1-6)	3% 4%	3% (7-11) 3% (7-11)
Guatemala	MINED, 2000 HS, 2000	na 21%	15% 12%	 6%	4% (7-9) 1% (10-12) 5% (7-11)
Honduras	MINED, 2001 HS Estimates (a) 2001	14% na 30%	9% na	16%	16% (7-12) na
Nicaragua	MINED, 2002 HS, 2001 Estimates (b) 2002	15% 12% 30%	9% 8%	9% 9%	6% (7-11) 6% (7-11)
Costa Rica	MINED, 2002 (c)	11% (16%)	6% (8%)	11% (10%)	16% (13%)
<i>Latin America, WDI 2000</i>			12%		
<i>Countries with similar p/c income (d)</i>					
Perú	UIS 2000/01		11%		5%
Colombia	UIS 2000/01		5%		4%
Jordan	UIS 2000/01				
Romania	UIS 2000/01		3%		2%
Algeria	UIS 2000/01		13%		
Paraguay	UIS 2000/01		8%		1%
Ecuador	UIS 2000/01		2%		4%
Philippines	UIS 2000/01		2%		2%
Bolivia	UIS 2000/01		4%		4%

Notes: (a) Based on estimates produced on the basis of age for grade disaggregation. In Honduras, household survey data were used; while in El Salvador, MINED official data were used; (b) Estimates based on Arcia (2003); (c) urban (rural); (d) Come from UIS (2003).

Table 1.9: Standardized Test Scores

		Grade 3		Grade 4 or 6		Grades 11 and (9)	
	Year	Spanish	Math	Spanish	Math	Spanish	Math
El Salvador	1996 (a)	na	4.0	2.2	2.9		
	1998 (a)	4.2	4.0	2.7	1.6	4.5 (2.4)	5.0 (1.1)
	1999					5.2	5.2
	2001 (b)	498	488	890	865		
	2002 (b)					1705 (1301)	1672 (1264)
	2003			(Grade 6)	(Grade 6)	1689	1678
Guatemala	1998 (c)	55.1	46.2				
(National)	2000	61.5	48.7				
	2001	na	na				
(OREALC)	2002(d)	51.8	38.9	58.3	46.0		
National				(Grade 4)	(Grade 4)		
Honduras	1998 (e)	41	43	47	40		
	1999	42	43	na	na		
	2000	41	43	46	39		
	2002	38	44	43	39		
Nicaragua	2000 (f)	247	251	244	248		
Costa Rica	1999 (g)					79.1	67.8
	2001			78.0	71.1	74.2 (69.2)	70.3 (55.6)

Source: The World Bank (2004b) and MINED official data; Guatemala: The World Bank (2004a); Honduras The World Bank (2004c), SE/UMCE (2003); Nicaragua: MECD (2003); Costa Rica: MEP/DBN (2001). Notes: (a) Scores from a scale of 0 to 10; (b) Scores follow the following scale: grade 3 (300-450: basic; 451-600: intermediate; 601-700: superior); grade 6 (700-850: basic; 851-1000: intermediate; 1001-1100: superior); grade 9 (1100-1250: basic; 1251-1400: intermediate; 1401-1500: superior); "bachillerato" – grade 11 (1500-1650: basic; 1651-1800: intermediate; 1801-1900: superior); (c) Scores from a scale of 0 to 100; tests conducted from 1998 to 2001 were not equated and hence inferences cannot be made as to whether student achievement has improved or declined over the years; (d) Scores from a scale of 0 to 100; (e) Scale to assess the level of educational achievement: 0%-30%: Very low; 31%-59%: Low; 60%-79%: Average; 80%-100%: Good; (f) Results are standardized using a mean of 250 and a standard deviation of 50. For Spanish grade 3, from 0-270: basic; from 271-320: intermediate; from 321-431: proficient; for Math grade 3, from 0-260: basic; from 261-310: basic; and from 311-413: proficient. For Spanish grade 6, from 0-270: basic; from 271-330: intermediate; from 331-435: proficient; for Math grade 6, from 0-310: basic; from 311-380: basic; and from 381-450: proficient; (g) Scores from a scale of 0 to 100. Grade 6 and 9: pass rate: 65%; Grade 11 ("bachillerato"): pass rate needs to be 70% including the "presentation" score at the end of the year.

Table 1.10: Distribution of Educational Outcomes by Urban/Rural
(HS= household survey; M = MINED; when not indicated, household survey data)

(a) - household survey; (b) - in-school survey; (c) - in-household survey; (d) - household survey data)															
	Average years of Education Attained (25 year cohort)		GER (NER) Primary		GER (NER) Secondary		Gross Completion Rate Primary (12-21 year cohort)		Completion Rate Secondary (17-21 year cohort)		Age-for - grade distortion (grade 1)		Repetition rate primary		
	urban	rural	urban	rural	urban	rural	urban	rural	urban	rural	urban	rural	Urb	Rur	
El Salvador	2001														
	2002	9.7	5.4	M: 87 (na) HS:105 (90)	M: 137 (na) HS:105 (84)	M:66(na) 10-12 M: 81(na) 7-11 HS:79(68) 7-11	M:7(na) 10-12 M:38 (na) 7-11 HS:46(39) 7-11	HS:73	HS:47	HS:40	HS:12	1.08	1.17	8	14
	1996	8.7	4.1	M: 101 (na) HS:115 (86)	M: 121 (na) HS:109 (78)	M:62(na) 10-12 HS:73(47) 7-11	M:3(na) 10-12 HS:27(21) 7-11	HS:76	HS:37	HS:41	HS:10	1.05	1.18	11	17
	2000	8.0	3.2	HS:104 (85)	HS:95 (75)	HS:69(50)7-11	HS:18(13)7-11	HS:63	HS:28	HS:28	HS:5	1.17	1.22	9	13
Honduras	2003														
	2002	8.4	4.2	M: 119 (na) HS:106 (88)	M:120 (na) HS:104 (83)	M: 94(na) 7-11 HS:75(52) 7-11	M: 21 (na) 7-11 HS:25(18) 7-11	HS:72	HS:42	HS:20 HS:18	HS:2	1.03	1.12	na	na
	1995	8.1	4.5	HS:106 (89)	HS:103 (83)	HS:62(45)7-11	HS:17(13)7-11	HS:71	HS:41		HS:2	1.04	1.10		
	2001	8.0	4.4	HS:116(86)	HS:106(76)	HS:83(56)7-11	HS:29(19)	HS:69	HS:31	HS:29 HS:22	HS:5	1.00	1.15	8	8
Nicaragua	1998	7.4	3.4	HS:112(84)	HS:94(70)	HS:74(50)7-11	HS:21(14)	HS:61	HS:24	HS:13	HS:3	1.02	1.14	11	14
	1993	7.2	2.9	HS:111 (76)	HS:68 (47)	HS:63(34) 7-11	HS:12 (6)	HS:37	HS:14		HS:2				

Table 1.11: Disaggregation of test scores across urban/rural area		
	Urban	Rural
El Salvador	Spanish grade 3: 2001:508 Math grade 3: 2001: 493	Spanish grade 3: 2001: 476 Math grade 3: 2001: 482
Guatemala	(public) Spanish grade 3: 1998: 55.7 2000: 62.7 2002: 60.5 Math: 1998: 48.5 2001: 49.7 2002: 43.8	(public) Spanish grade 3: 1998: 52.6 2001: 58.4 2002: 48.6 Math: 1998: 43.1 2001: 46.1 2002: 37.0
Honduras	Spanish grade 3: 2002:41.5 Math: 2002: 45.2	Spanish grade 3: 2002:36.1 Math: 2002: 41.6
Nicaragua	(traditional public) 2000: Spanish grade 3 :221 Math: 218	(traditional public) 2000: Spanish grade 3: 224 Math: 216
Costa Rica	1999: Spanish grade 11: 97% pass; Math: 65%	1999: Spanish grade 11: 95% pass; Math: 68%

Source: El Salvador: The World Bank (2004b) and MINED official data; Guatemala: The World Bank (2004a); Honduras: The World Bank (2004c) and SE/UMCE (2003); Nicaragua: MECD (2003); Costa Rica: MEP/DBN (2001).

Table 1.12: Distribution of Educational Outcomes by Quintiles

(on the basis of household survey data)

		El Salvador	El Salvador	Guatemala ^a	Honduras	Honduras	Nicaragua	Nicaragua	Costa Rica
		2002	1995	2000	2002	1995	2001	1993	2000
Average Years of Education Attained cohort 25	I	4.02	3.44	2.35	3.35	4.98	2.96	2.53	na
	II	6.06	3.96	3.08	4.12	4.83	5.24	3.52	
	III	7.33	4.98	3.68	5.57	5.76	6.19	4.88	
	IV	8.98	7.87	6.35	7.10	7.11	6.78	6.63	
	V	12.18	10.60	9.30	9.97	9.06	9.81	8.01	
Gross Enrollment Rate Primary	I	99.76	104.68	92.98	99.35	103.49	101.48	55.86	102.5
	II	105.46	107.19	89.23	104.93	101.76	115.71	82.58	107.9
	III	106.83	115.31	100.88	107.88	106.58	112.24	108.06	105.1
	IV	109.69	120.46	106.64	107.26	107.19	120.42	111.78	103.9
	V	105.90	117.66	110.55	106.48	107.92	107.54	116.85	101.8
Net Enrollment Rate primary	I	80.63	75.59	72.20	79.34	84.24	71.01	38.99	88.4
	II	86.78	79.51	70.89	83.36	82.85	82.77	54.85	92.0
	III	89.41	84.93	79.51	87.66	87.75	84.87	71.91	91.4
	IV	92.04	87.79	85.58	89.20	87.81	88.05	79.59	89.8
	V	92.29	89.27	91.32	89.45	89.56	85.59	81.78	93.6
Gross Enrollment Rate Secondary	I	38.03	26.37	10.93	16.89	24.01	17.67	8.13	na
	II	54.92	36.06	19.49	30.01	24.20	41.19	19.65	
	III	68.14	52.21	33.43	49.50	39.37	61.29	37.56	
	IV	78.30	67.01	49.04	72.60	52.74	88.85	66.48	
	V	88.46	79.80	82.59	88.20	68.25	104.64	81.52	
Net Enrollment Rate secondary	I	32.00	20.28	7.44	12.06	17.04	12.72	4.06	43.0
	II	44.70	28.61	14.29	21.74	19.55	25.59	10.33	44.9
	III	55.14	40.65	24.97	35.46	27.76	41.60	20.03	49.0
	IV	63.18	51.34	34.78	49.44	37.25	58.63	35.78	58.2
	V	73.38	60.34	59.33	61.72	51.78	71.23	43.97	73.2

		El Salvador		El Salvador		Guatemala ^a		Honduras		Honduras		Nicaragua		Nicaragua		Costa Rica	
		2002	1995	2000	2002	1995	2000	2002	1995	2001	1993	2000	2000	1993	2000	2000	2000
Gross Completion Rate Primary (cohort 12-21)	I	37.67	34.27	19.48	32.92	44.21	20.47	32.92	44.21	20.47	9.87	64.0	64.0	20.00	32.35	75.3	81.7
	II	53.15	43.10	27.10	44.30	56.61	38.46	44.30	40.43	38.46	20.00	67.6	67.6	32.35	35.00	88.3	88.3
	III	63.42	56.60	37.58	56.23	71.72	55.69	56.23	56.61	55.69	32.35	75.3	75.3	35.00	42.90	na	na
	IV	72.67	72.98	52.21	71.72	80.07	70.58	71.72	67.43	70.58	42.90	88.3	88.3	42.90	na	na	na
	V	82.14	83.02	74.21	80.07	3.76	1.81	80.07	77.41	84.50	1.97	na	na	1.97	2.90	6.05	11.64
Gross Completion Rate Secondary (cohort 17-21)	I	10.71	9.88	2.60	1.69	2.43	4.11	1.69	3.76	1.81	2.90	6.05	11.64	1.97	2.90	6.05	11.64
	II	15.59	13.40	3.72	2.28	6.62	11.93	2.28	2.43	4.11	6.05	11.64	11.64	2.90	6.05	11.64	11.64
	III	21.85	18.84	8.33	6.57	12.67	23.43	6.57	6.62	11.93	11.64	18.22	18.22	6.05	11.64	18.22	18.22
	IV	34.07	34.57	14.70	13.50	28.72	51.18	13.50	12.67	23.43	11.64	na	na	11.64	18.22	na	na
	V	55.29	51.05	35.85	30.69	8.2	9.6	30.69	28.72	51.18	18.22	na	na	18.22	na	na	na
Repetition Rate Primary	I	14.0		13.5	na		8.2	na		8.2		na	na			na	na
	II	12.8		13.2			9.6			9.6							
	III	9.4		12.5			8.1			8.1							
	IV	7.9		10.5			7.2			7.2							
	V	5.3		6.8			4.7			4.7							

Table 1.13: Primary Completion Rate by Cohort

(on the basis of household survey data)

(On the basis of measurements survey data)																				
			El Salvador			Nicaragua			Guatemala			Honduras								
	18	25	35	18	25	35	18	25	35	18	25	35	18	25	35					
I	51.47	31.47	28.89	24.24	18.18	5.56	27.97	14.13	6.67	46.50	32.45	18.42	46.50	32.45	18.42					
II	66.76	52.81	32.77	48.39	49.40	24.44	40.30	21.70	8.86	55.83	40.97	34.47	55.83	40.97	34.47					
III	80.63	66.02	55.49	57.66	56.94	50.00	45.58	32.38	27.88	69.70	63.22	56.41	69.70	63.22	56.41					
IV	87.19	81.64	62.67	74.51	66.67	57.50	66.21	58.47	54.88	85.99	75.19	72.69	85.99	75.19	72.69					
V	91.51	92.54	81.98	81.73	87.50	75.51	82.78	80.14	74.26	87.06	89.16	88.26	87.06	89.16	88.26					
Average	75.59	68.15	54.09	55.32	56.56	41.53	56.22	45.15	35.53	70.52	64.86	56.72	70.52	64.86	56.72					

Table 1.14: Rates of Return per Income Quintile						
	Quintiles:	0.1	0.25	0.5	0.75	0.9
El Salvador, 2002 (a)	Average	7.9	8.5	9.2	9.4	9.0
	Primary	4.2	4.5	5.7	5.9	4.7
	Lower Secondary	4.9	6.0	4.0	3.0	4.3
	Upper Secondary	10.9	9.8	10.3	13.5	13.6
	Tertiary	17.3	19.9	20.3	17.9	16.2
Guatemala, 2000 (b)	Average	10.0	10.4	11.5	12.0	12.0
	Primary	8.4	7.7	8.3	7.9	7.5
	Lower Secondary	1.3	3.9	4.4	7.2	12.2
	Upper Secondary	23.0	23.6	26.4	27.0	19.5
	Tertiary	9.0	10.8	10.3	9.5	14.2
Honduras, 2002 (c)	Average	9.8	9.8	10.0	10.4	10.5
	Primary	9.1	9.3	9.1	8.8	7.6
	Lower Secondary	6.5	7.0	6.9	7.3	8.6
	Upper Secondary	14.5	12.3	12.4	13.2	13.1
	Tertiary	9.9	12.4	13.9	14.7	15.7
Nicaragua, 2001 (d)	Average	7.7	7.8	8.8	9.9	10.8
	Primary	3.9	6.1	5.1	6.4	7.1
	Lower Secondary	5.1	2.9	6.4	7.4	9.2
	Upper Secondary	12.5	12.8	11.3	8.9	7.7
	Tertiary	13.2	14.7	18.6	22.1	24.8

Source: Household Surveys. Notes: All coefficients are significant at 1%. (a) For the regressions by level: only the difference between the lower and upper quintile for upper secondary is significant; (b) For the regressions by level: only the difference between the lower and upper quintile for lower secondary and tertiary is significant; (c) For the regressions by level: only the difference between the lower and upper quintile for primary and tertiary is significant; (d) For the regressions by level: only the difference between the lower and upper quintile for primary and tertiary is significant.

Table 1.15: Distribution of Educational Outcomes by Gender
(household surveys)

	Average years of Education Attained (25 year cohort)		GER Primary		NER Primary		GER Secondary		NER Secondary	
	male	female	male	female	male	Female	male	female	male	female
El Salvador 2002	7.9	8.2	105.4	104.4	86.4	87.9	63.2	64.2	51.0	53.3
Guatemala 2000	6.2	4.9	102.5	94.4	81.0	75.7	40.7	36.9	29.2	26.7
Honduras 2002	6.1	6.9	104.1	105.3	84.6	85.6	45.8	54.6	32.7	37.7
Nicaragua 2001	6.3	6.2	111.8	110.1	81.4	81.0	50.7	65.2	33.8	43.8

(-continued)

	Gross Completion Rate (Primary) (12-21)		Gross Completion Rate Secondary (17-21)		Age-for grade distortion (grade 1)		Repetition rate primary	
	male	female	male	female	male	female	male	female
El Salvador 2002	59.7	62.4	27.0	29.2	1.127	1.129	12.04	9.11
Guatemala 2000	46.2	20.1	9.2	5.5	1.201	1.204	11.98	11.22
Honduras 2002	52.9	61.4	10.1	14.0	1.093	1.068	na	na
Nicaragua 2001	46.1	56.8	14.0	22.5	1.10	1.06	9.66	6.26

Table 1.16: Distribution of Educational Outcomes by Indigenous/Non-Indigenous
(on the basis of household survey data)

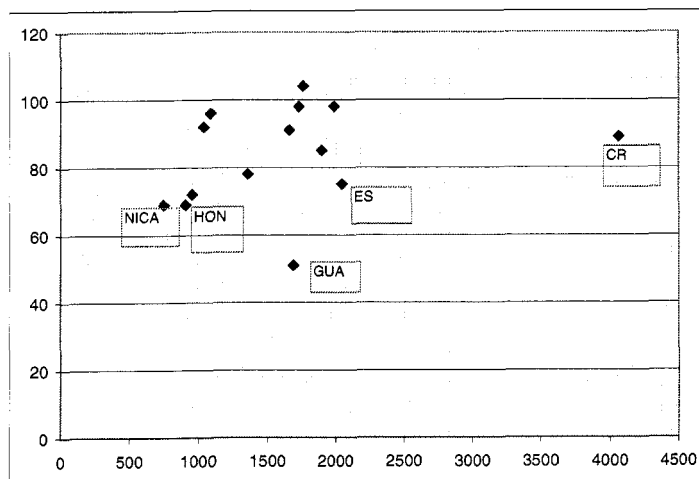
	Guatemala		Honduras		Nicaragua	
	2000		2002		2001	
	Non Indig	Indig	Non Indig	Indig	Non Indig	Indig
Average years of Education Attained (25 year	6.57	3.59	6.55	5.29	6.31	5.54
GER Primary	104.39	90.74	108.23	103.56	111.47	107.01
NER Primary	83.96	70.89	87.39	84.15	81.75	77.07
GER Secondary	48.95	23.92	53.08	33.08	59.10	45.72
NER Secondary	36.03	16.13	36.60	20.72	39.98	26.64
Gross Completion Rate Primary (cohort 12-21)	54.24	26.88	60.06	42.05	52.60	39.03
Gross Completion Rate Secondary (cohort 17-21)	13.44	5.31	13.73	5.53	18.80	11.02
Repetition rate primary	10.63	13.19	na	na	8.07	7.14
Rate of Return of an additional year of schooling	11.44	10.36	na	na	9.25	9.28

Table 1.17: Primary completion rate for indigenous and not indigenous and different cohorts (no data is available for El Salvador where indigenous comprise only 1% of the population)

	Not Indig.	Indig.	Not Indig.	Indig.	Not Indig.	Indig.
	18 years cohort		25 years cohort		35 years cohort	
Guatemala, 2000	68	37	56	28	49	16
Honduras, 2002	70	48	65	50	58	23
Nicaragua, 2001	54	64	57	51	44	67

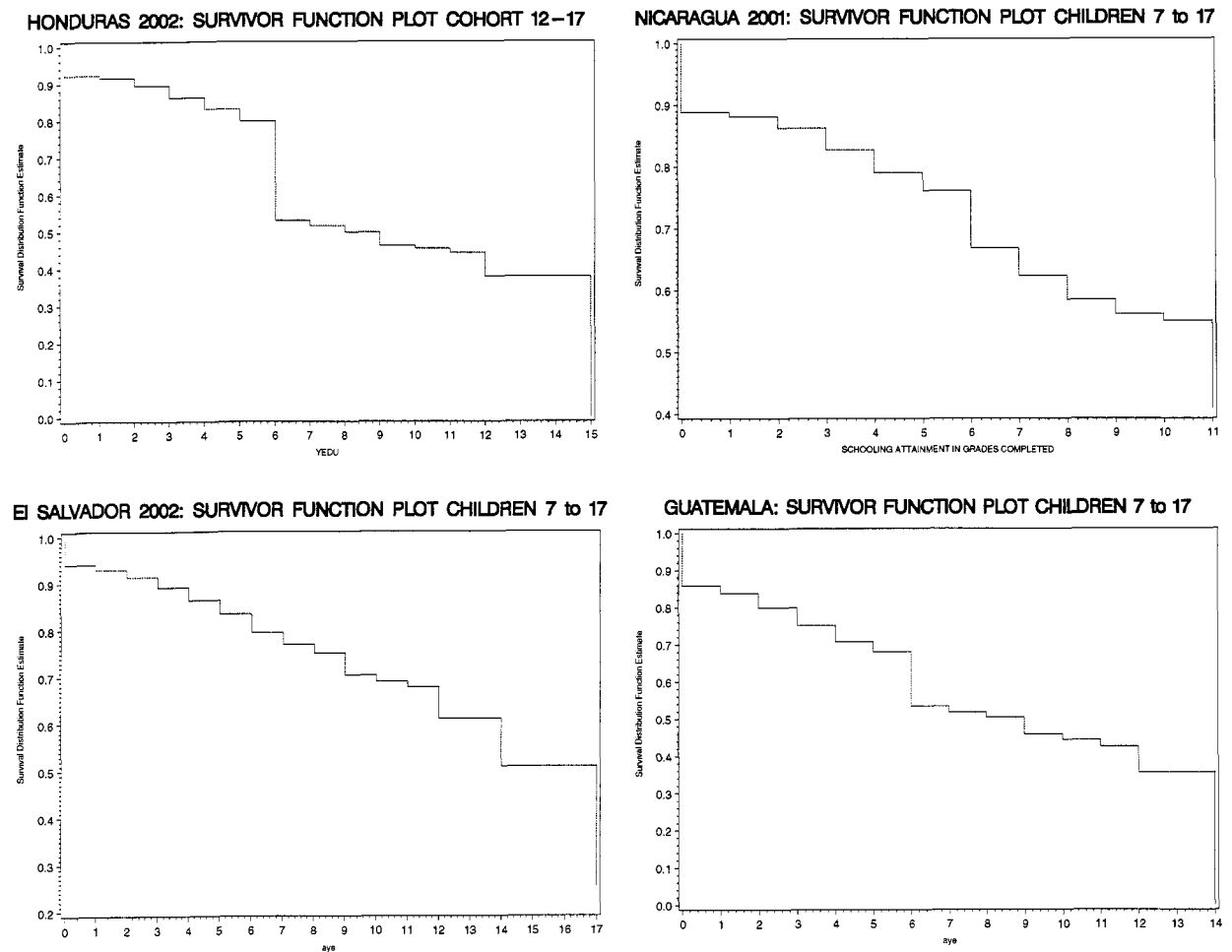
Sources: Household Surveys.

Figure 1.1: Per capita income and GCR in primary



Source: WDI and MINED

Figure 1.2: Survivor function plots



Source: Household Surveys

Figure 1.3: GERs in urban and rural areas according to different sources

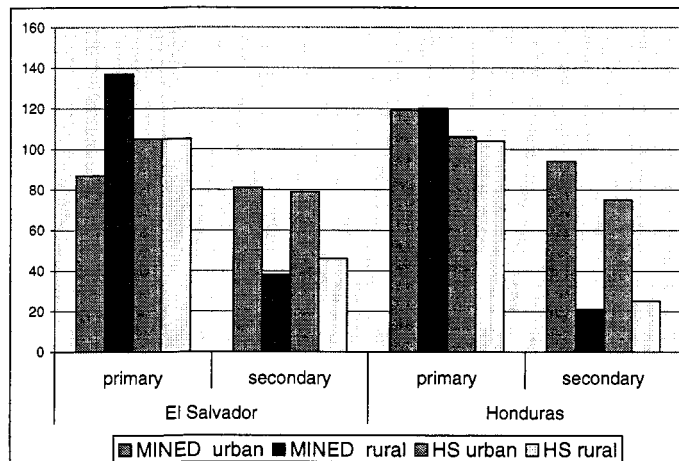
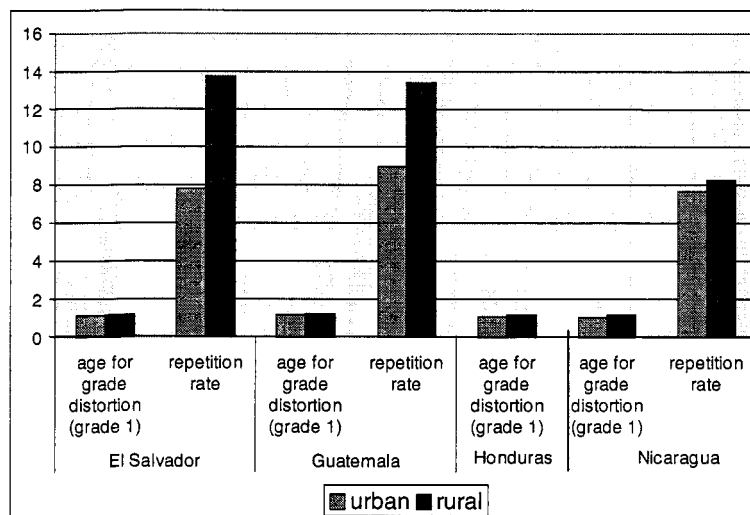
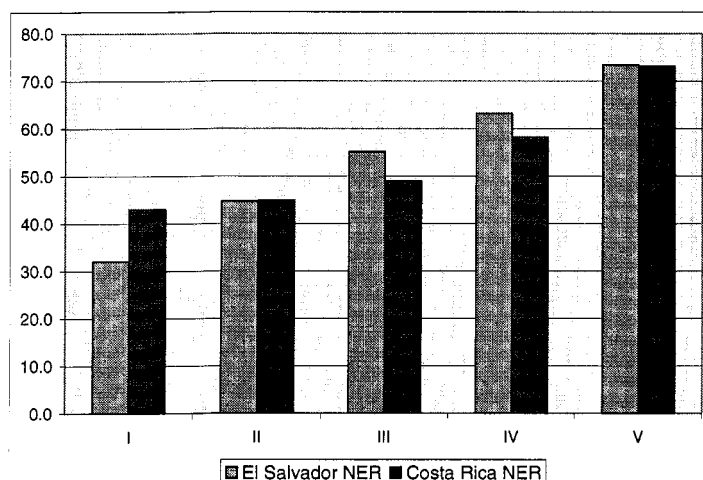


Figure 1.4: Efficiency Indicators in Urban and Rural Areas



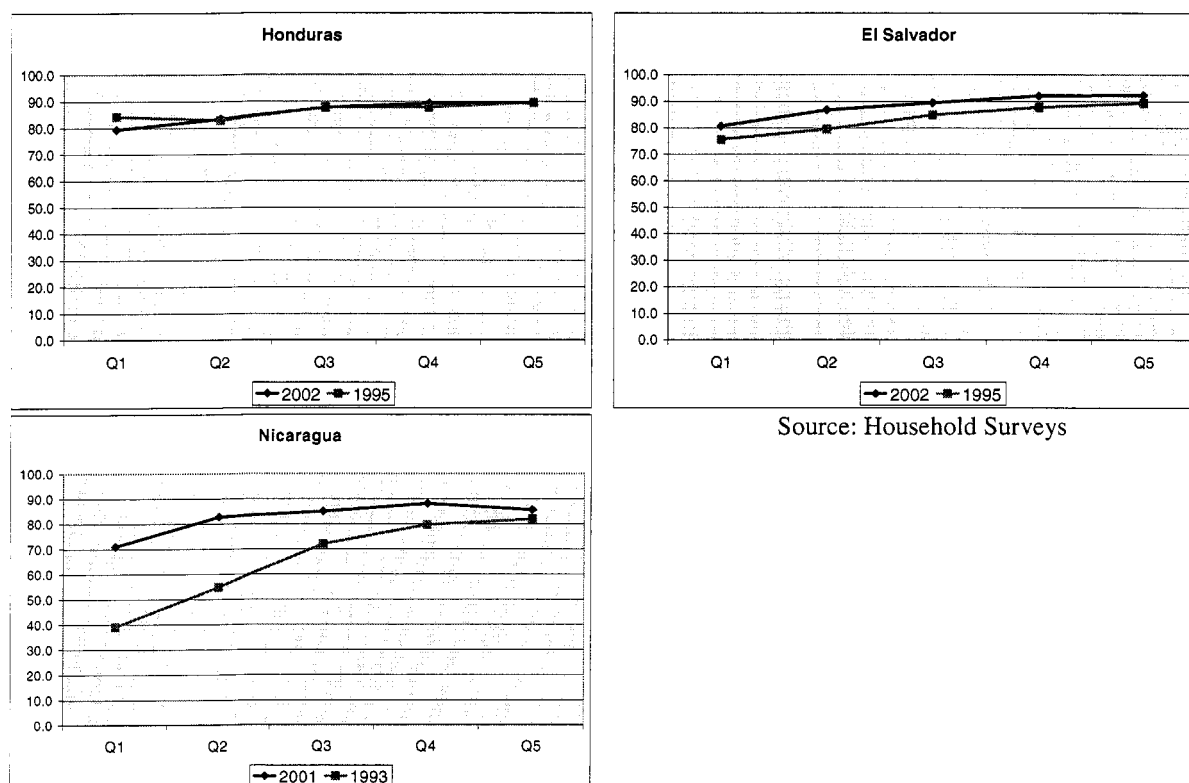
Source: Household Surveys

Figure 1.5: Secondary NER by quintile in El Salvador and Costa Rica



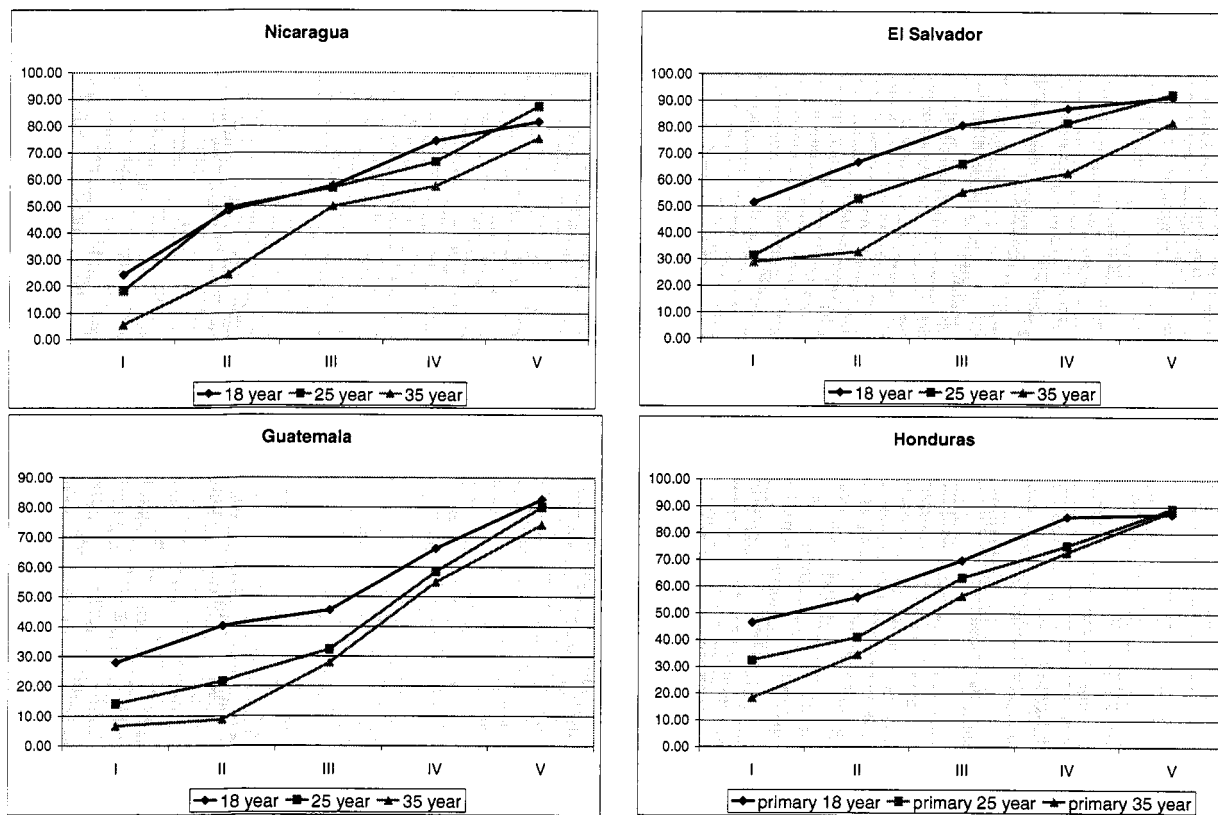
Source: Household Surveys

Figure 1.6: Evolution of primary NER by quintile



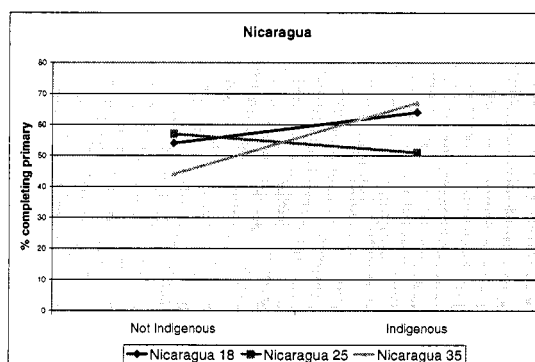
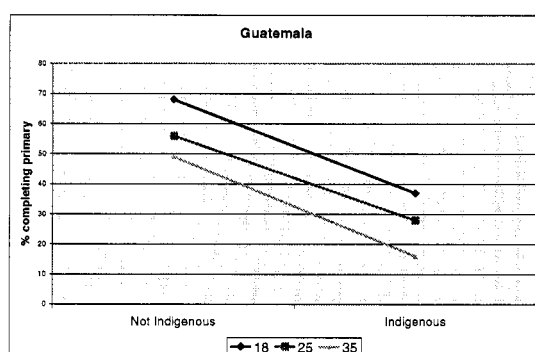
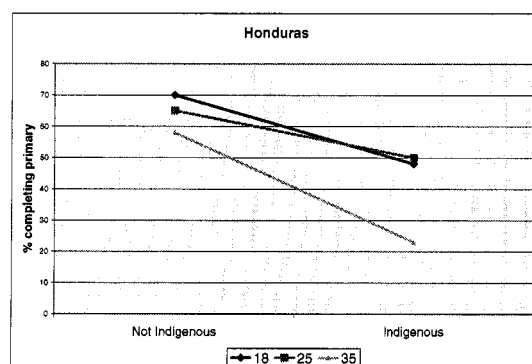
Source: Household Surveys

Figure1.7: Primary Completion Rate by quintile and cohort



Source: Household Surveys

Figure 1.8: Evolution across cohorts of primary completion rate



Source: Household Surveys

Box 1.1: Determinants of grade-for-age distortion in Guatemala

Determinants of grade-for-age (t-statistics)	
Dependent variable: grade for age Z-score	
Age	-0.08 (-19.99)
Enrolled late	-0.15 (-4.12)
Years delay	-0.31 (-25.00)
Height for age	0.13 (15)
HH size	-0.02 (-4.37)
HH Cons. Per capita	0 (9.28)
Female	0.05 (2.79)
K'iche	0.02 (0.46)
Q'ueqchi	-0.16 (-3.96)
Kaqchiquel	0.12 (3.3)
Mam	-0.02 (-0.39)
Other Maya	0 (0.01)
Repeater	-0.78 (-25.53)
Constant	1.22 (21.1)
Obs	5862
R-square	0.49

We analyze over-age enrollment with a new approach that involves estimating the determinants of "grade-for-age". This concept –adapted from the health literature –reflects cumulative schooling delays from all sources. These might include late initial enrollment, grade repetition and temporary withdrawals. The grade-for-age (GFA) measure reported in the table below is standardized by age, meaning that each person's grade attainment is measured in relation to the average grade attainment for people that age. The table below reports results for a regression that examines the factors associated with standardized GFA of all children currently enrolled in a primary school. Not surprisingly, the coefficient on age is negative, reflecting the fact that older students who are still in primary school have had more opportunity to do poorly, and that the best students are less likely to be in sample. The decision to first enroll a child late –above age 7 –results in a lower attainment for age score. The number of years late also lowers the score. There is *not* a one-to-one trade-off between enrollment delay and grade for age. In other words, children whose initial enrollment was delayed by two years are on average less than two years behind those who enrolled at age 7. This may imply that the enrollment delay involves some sort of corrective decision that eventually leads to a partial recovery of lost time. Current repeaters are seen in the act of falling behind their age cohort. Estimates not

shown here indicate that grade repetition translates into almost exactly a one-year delay in grade for age. Household per capita consumption (an indicator of current well-being) and the child's height-for-age (a proxy for all past well-being) are both associated with more rapid progress through the school system. Given all other characteristics, girls do slightly better than boys. Perhaps most surprising is that there is considerable inter-ethnic variation. Ethnicity coefficients measure performance relative to the non-indigenous population. The K'iché, the Mam and the conglomerate of about 20 smaller groups in "Other Maya" are in this restricted sense indistinguishable from the Ladinos. In contrast, the Q'ueqchí are about 1/3 of a year behind similarly situated Ladinos while the average Kaqchiquel student is actually about one-tenth of a year *ahead*. (Source: Edwards (2004)).

Annex II: Methodology for the Calculation of Private Rates of Return

We specify the following model: $y_i = \varphi(s_i, x_i, z_i) + u_i$ (1)

where y_i is the logged (hourly) labor market earnings for individual i ; s_i stands for completed years of schooling, x_i is a matrix of personal characteristics other than schooling, namely, age, age squared, gender, and z_i is a matrix of context-specific circumstances, namely urban/rural and regional location. The last component, u_i , is a random disturbance term that captures unobserved characteristics.

The functional form for education has been deliberately left unspecified in equation (1), because the model will be specified in two different ways to address two main questions: (i) what value is attached to an extra year of education; and (ii) what value is attached to different educational levels (primary, secondary, or tertiary). The specifications are the following. Respectively:

Linear formulation of education, where the model assumes a constant return to one additional year of schooling regardless of the level:

$$y_i = \beta_0 + \beta_{sch} S_{scho,i} + x_i' \beta + z_i' \beta_z + u_i. \quad (2)$$

β_{sch} could be interpreted as the returns to one year of additional schooling²⁷⁸ and S_{scho} stands for the years of schooling for individual i .

Spline form of years of schooling, where the average return to one additional year of schooling can vary between levels of education:

$$y_i = \beta_0 + \beta_{prim} S_{prim,i} + \beta_{low\ sec} S_{low\ sec,i} + \beta_{upp\ sec} S_{upp\ sec,i} + \beta_{ter} S_{ter,i} + x_i' \beta + z_i' \beta_z + u_i. \quad (3)$$

The functions are estimated using mere OLS techniques, which do not adjust for the fact that unobservable characteristics, such as ability or the quality of education, could generate a correlation between the error term and the schooling variable biasing the rates of return; and for selectivity biases generated, for instance, by the fact that many adults are not wage workers²⁷⁹. A recent review (Card 2001²⁸⁰), focusing on the causality debate between schooling and earnings, reaffirms the conclusion that the effect of ability and related factors does not exceed 10% of the estimated schooling coefficient. and finds that instrumental variable estimates of the returns to education based on family background are higher than classic OLS estimates²⁸¹. Psacharopoulos and Patrinos (2002), therefore, conclude that the estimation method makes little difference.

²⁷⁸ This is assuming that the only cost of additional schooling is forgone wages. In this case, the above functional form will yield β_{sch} as the private return to schooling by straightforward differentiation. The annual private rate of return is the annual increase in income $(y_i - y_{i-1})$ divided by the annual cost of the investment $(y_i - 1)$: $(y_i - y_{i-1})/y_{i-1} = y_i/y_{i-1} - 1 = e^{\beta_0 + \beta_{sch} S_{scho,i} + x_i' \beta + z_i' \beta_z + u_i} / e^{\beta_0 + \beta_{sch} (S_{scho,i} - 1) + x_i' \beta + z_i' \beta_z + u_i} - 1 = e^{\beta_{sch}} - 1 \approx \beta_{sch}$. (see Glewwe, 1996).

²⁷⁹ For a useful paper summarizing these issues, see Glewwe (1996).

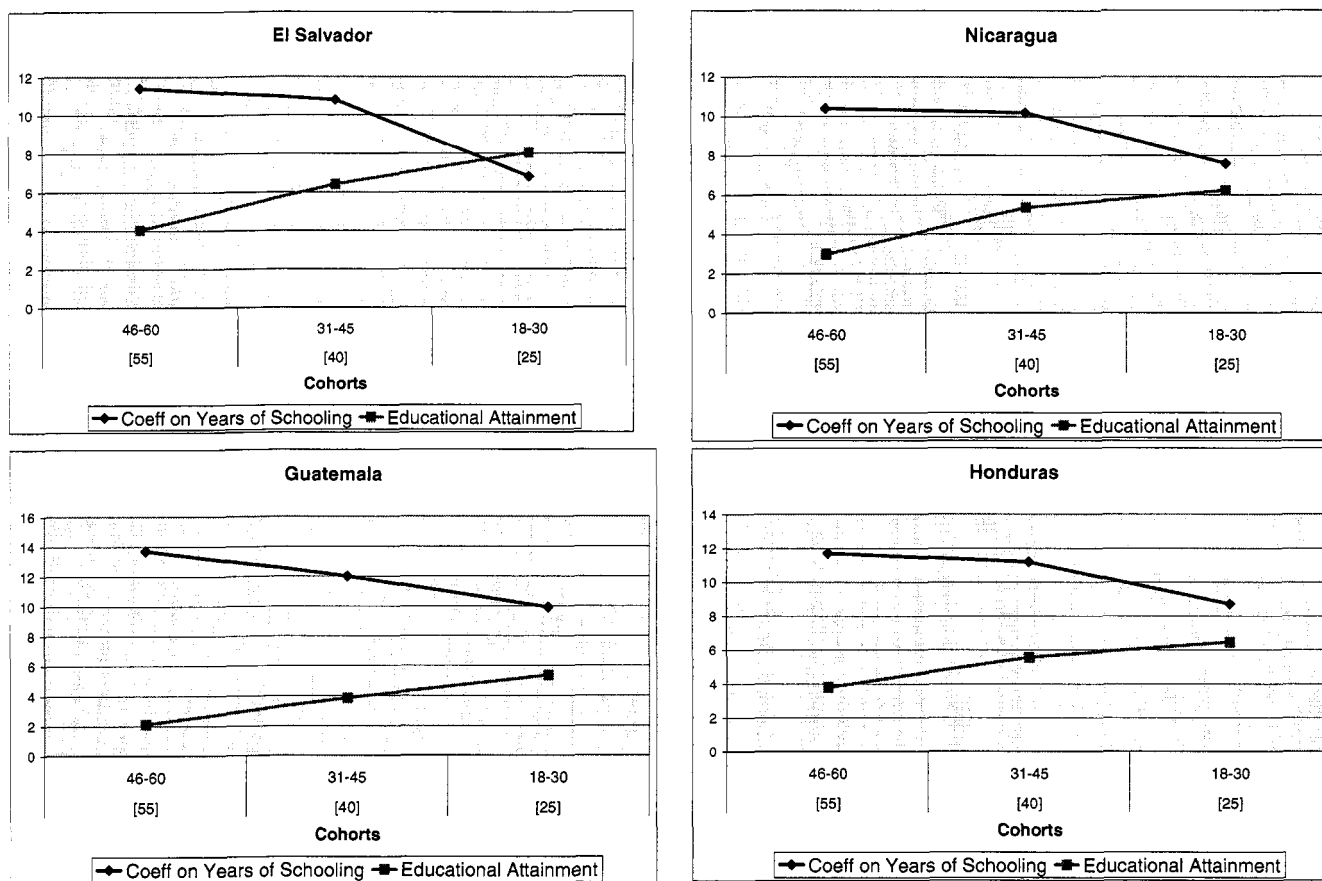
²⁸⁰ See Card (2001).

²⁸¹ For the use of instrumental techniques in the estimation of rates of return, see Arias (2004); and Ichino, A and Winter-Ebmer, R (1999).

Annex III: Evolution of Rates of Return in Central America

Figure 3.1 shows an interesting trend in which private returns decreased less than attainment increased for the 31-45 year-old cohort and more than attainment increased for the 18-30 year-old cohort (in all countries except Guatemala). This could be due to an educational attainment threshold after which rates of return start declining more steeply.²⁸² Or it could reflect a decline in the quality of the education in recent years.²⁸³

Figure 3.1: Evolution across cohorts of rates of return and educational attainment for several countries



Source: Household Surveys

Figure 3.2 illustrates how rates of return evolved across educational cycles and cohorts for each of the countries. In all countries, with the big push for primary education, rates of return decreased across cohorts for this cycle; and this also happened at the upper secondary level in Guatemala and El Salvador, and at the lower secondary level in El Salvador, Nicaragua and Honduras²⁸⁴. Again, the increase in educational attainment can also explain this trend. The trends for upper secondary in both Nicaragua and Honduras

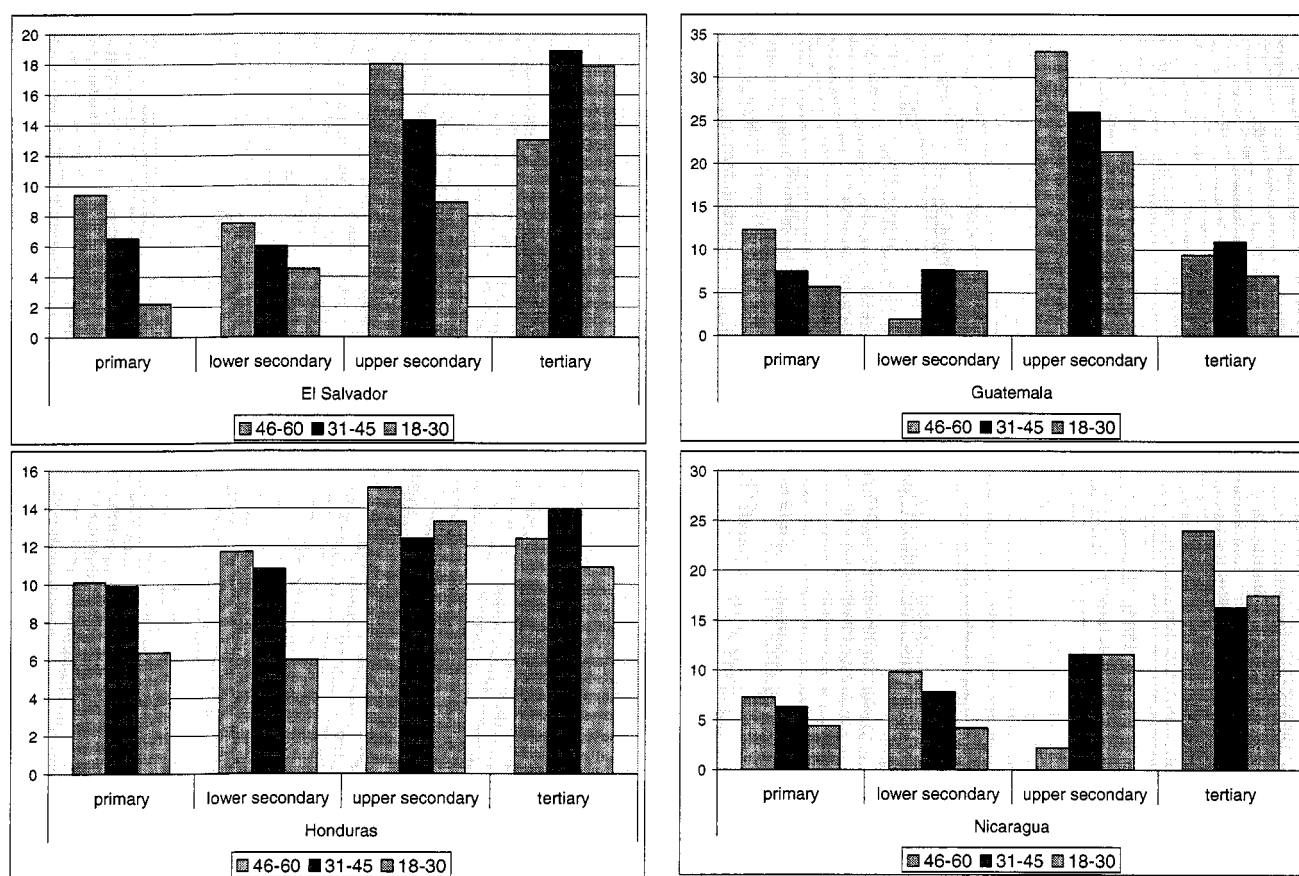
²⁸² It would be useful to analyze the experience of the OECD countries to corroborate this explanation.

²⁸³ This would be difficult to test as national standardized tests have only been introduced recently.

²⁸⁴ It should be noted that also in Costa Rica, although adopting a different methodology, it is found that the premium on completed primary, and secondary incomplete and complete, have been decreasing since the early 1980s (Sanigset, 2003).

are, however, quite interesting. After an initial decrease, rates of return have been increasing in Honduras for the latest cohort: is it due to the comparatively lower progress in secondary enrollment and completion, to increased demand for workers with secondary education, or to increased quality of the cycle? In Nicaragua, returns increased quite markedly for the last two cohort groups. The high rate of return for the 31-45 generation may be due to increased quality of the secondary cycle and higher demand for secondary school graduates after the Somoza dictatorship, which had left the education sector in a situation of disarray and a weak and protected economy at the end of the 1970s. The persistently high rate of return for the 18-30 generation, in spite of growing secondary enrollment, may be explained by a further improved education and economic situation after the Sandinista period in the 1980s.

Figure 3.2: Evolution of private returns to schooling by educational level and cohort



Source: Household Surveys

Annex IV: National Assessment Systems in Central America

Table 4.1: Characteristics of National Assessment Systems in Central America

	Main Objectives of the Systems	Institutional Aspects	Main Components	Dissemination of the Information	Use/Impact of the Information
El Salvador	1)Diagnostic and action: provide information on educational quality to education authorities, schools and teachers; 2)Accreditation (PAES, grade 11, 12)	In 1991, the <i>Sistema Nacional de Evaluación de los Aprendizajes</i> (SINEA) was established. It is managed by the <i>Dirección Nacional de Monitoreo y Evaluación</i> in the Ministry of Education More elaborated analysis is undertaken outside the Ministry by foreign consultants	Standardized Testing from 1993 (grades 3, 4, 6, 9, 11 and 12) Analysis of Associated Factors (for grade 4, 6, 11, 12)	Lack of systematic strategy ²⁸⁵ National publication only of grade 11, 12 exam Results are shared with the schools since 1998 National reports on associated factors (very little disseminated)	Some impact on curriculum development Some impact on teacher development (grade 11, 12) Accreditation of the end of secondary cycle
Guatemala	1)Diagnostic and action: provide information on educational quality to schools and teachers.	The management of the system has been contracted out to the <i>Universidad del Valle</i> by the Ministry of Education	Standardized Testing from 1998 (grades 3, 6, 9) Analysis of associated factors (grades 3)	Lack of systematic strategy No national publication Results are shared with the schools	Limited feedback
Honduras	1)Diagnostic and action: provide information on educational quality to education authorities, schools and teachers. 2)Accountability: generate a culture of evaluation where education authorities and schools are accountable for their results	The system is managed by the <i>Unidad de Medición de la Calidad de la Educación</i> (UMCE), autonomous unit located in the <i>Universidad Pedagógica</i> . More elaborated analysis is undertaken in UMCE with help of international consultants	Standardized Testing since 1997 (grades 3 and 6) Analysis of Associated Factors (for grades 3 and 6)	National report on the results (limited printing, but, recently, also on UMCE website) Departmental reports (limited printing) Results shared with schools and teachers National and departmental reports on associated factors (limited printing)	Little feedback in the curriculum Some impact on teacher development Limited impact on accountability

²⁸⁵ A thorough review of the El Salvador National Assessment System is provided in Rapalo (2004).

Nicaragua	1)Diagnostic and action: provide information on educational quality to education authorities, schools and teachers.	Managed by the <i>Dirección General de Capacitación, Evaluación y Planificación</i> , in the Ministry of Education	Standardized Testing since 2002 (grades 3, 6) Analysis of Associated Factors (for grades 3 and 6)	Lack of systematic strategy National report on the results, including correlation analysis Report cards will be produced to share results at different levels.	Impact on awareness.
Costa Rica	1)Diagnostic and action: provide information on educational quality to education authorities, schools and teachers. 2)Accountability: generate a culture of evaluation where education authorities and schools are accountable for their results. 3)Accreditation (grades 9, 11, 12)	Managed by the <i>División de Desarrollo Curricular</i> , in the Ministry of Education	Standardized Testing since 1988 (grades 6,9, 11, 12) Analysis of associated factors (for grades 6 and 9)	National reports on the results for all grades Results shared with schools and teachers Report published at the national and department level on associated factors	Limited feedback

Notes: This table was put together on the basis of individual country studies (see El Salvador), project information and OEI (2004).

Annex V: Teacher Education in Central America

Table 5.1: Teacher Education					
	El Salvador	Honduras	Guatemala	Nicaragua	Costa Rica
Legal Framework	Education Law 1995 Higher Education Law 1997 Carrera Docente Law 1996	Organic Law of Education Higher Education Law 1991 Teacher Statute 1997	National Education Law 1991	Career Docente Law	1963 Law (1995) Career Docente Law
Teacher Education	Tertiary Education (Teacher School, 3 years and University) Target grade in the PAES (at entry) ECAP grade (at exit),	Two level system: Teacher School, 3 years (upper secondary) for primary teachers University, 3 years, for secondary teachers	Two level system: Teacher School, 3 years (upper secondary) for primary teachers University, 3 years, for secondary teachers	Two level system: Teacher School, 3 years (upper secondary) for primary teachers University, 5 years, for secondary teachers	University Education (2 years for primary teachers, 4 for secondary teachers)
Institutional Set-Up	One specialized institute and 7 universities	12 teacher schools and two universities (Universidad Pedagógica Francisco Morazan y Universidad Nacional Autónoma)	Teacher schools and universities	8 teacher schools and 3 universities (including the Universidad Nacional Autónoma de Nicaragua)	4 universities (including the Universidad de Costa Rica y la Universidad Nacional)
General Curriculum (Teacher School)	General training Specialized training Teacher practice	Professional/differentiated area Technical area Teacher practice	General psycho-pedagogical area Scientific/humanistic area Teacher practice	General development General psycho-pedagogical Esthetical and practical area Teacher practice	University: General psycho-pedagogical Scientific-technical area Humanistic area Socioinstitutional area Teacher practice
In-Service Training Requirements	Different training options Minimum of 40 hours a year	Different training options	One main training option: The professional development program (2 years)	Different training options (generally 1 year courses)	Wide variety of training options

Table 5.1: Teacher Education				
	El Salvador	Honduras	Guatemala	Nicaragua
Institutional Set-Up	A national system of development and training has been set up (Sistema Nacional de Formacion y Capacitacion), managed through 3 regional centers and 242 model schools (Escuelas Modelo). About ten public and private institutions are also involved	A training system has been organized around the Training Department of the MINED, the Universidad Pedagogica and the INICE (Instituto Nacional de Investigacion y Capacitacion Educativa), with the support of the regional Teacher Learning Centers (Centros de Aprendizaje Docentes - CAD)	Training for pre-primary and primary teachers is provided through the professional development program (Programa de Desarrollo Profesional), managed through national certified universities and involving municipal sites. A similar program for secondary teachers is under development	A National Training Network (Red Nacional de Capacitacion) has been set up, involving the teacher schools, regions and municipalities and micro training centers (Minicentros de Intercapitacion)
Main Types of Training	National Training Regional Training Local Training Free Courses	In site training, distance training	Combines work with study, and involves in site and distance education Areas: General training Specific training Bilingual training	The national training system is organized around the MINED, its regional and local offices, several other institutions and the Model Schools (Escuelas Lideres) program introduced by the SIMED (Sistema Nacional de Mejoramiento de la Calidad de la Educacion)

Source: own elaboration on the basis of OEI (2003).

Annex VI: Teacher Salary in Central America

Box 4.1: Teacher Salary in Central America

El Salvador:

The "*Ley de Carrera Docente*", approved in 1996, introduced a new salary scale, the possibility of teacher decentralized management and the "de-linking" between the educational level at which the teacher teaches and salaries. The table below summarizes average monthly wages for public teachers with tertiary university and non-university education, showing that teacher grade and salary progression depends largely on the years of professional experience, with a 10% premium for the educational background. Additionally, other incentives have also been introduced: in particular, teachers working in rural areas receive an additional sum equivalent to one month of pay ("*bono de ruralidad*") and, since 2000, schools performing particularly well in terms of quality receive yet an additional incentive ("*bono al buen desempeño institucional*" o "*bono de excelencia*"). This second incentive, consisting of a premium of US\$ 228 per school, is seen as a way to encourage teachers to work as a team for the achievement of schooling outcomes. In 2002, 50% of the 4,950 schools assessed received the incentive.

Table 1. Monthly teacher salary in the public sector, US\$ 2000 (net salary)

Category	Years of Service	Teacher-level 1 (University Degree)	Teacher-level 2 (Teacher School)
		US\$	US\$
1 st	26-	592	537
2 nd	21-25	558	506
3 rd	16-20	526	478
4 th	12-15	487	442
5 th	6-11	450	409
6 th	0-5	409	372

Source: El Salvador Education Strategy Note

and the value of the class hour. The *Estatuto* establishes 6 main types of allowances (*colaterales*): (i) title; (ii) years of teaching experience [seniority]; (iii) professional achievement and merits; (v) geographic location [*Zonaje and frontera*]; (vi) position occupied (managerial positions); and (vii) school category.

Honduras:

In Honduras, a rigid Teacher Statute (*Estatuto*), approved in 1997, determines the salary structure and career development of the teaching staff. The statute establishes that the teacher's salary is composed by the base salary and a number of allowances. For every teacher that works full time the base salary is determined as the product between the normal 156 monthly class hours

Table 2. Composition of the average monthly salary for public primary teachers July 2002(US\$ 2002)

	average value of each benefit	% of base salary	composition of average salary	%
Base Salary	240.82	100.00	240.82	62.61
Seniority	139.30	57.84	101.20	26.31
Merit	16.66	6.92	5.43	1.41
Position	58.57	24.32	9.00	2.34
Geographic area (zonaje)	241.02	100.08	4.85	1.26
School Category	72.31	30.02	1.71	0.45
Title	121.61	50.50	15.14	3.94
Border benefit (frontera)	60.25	25.02	6.46	1.68
Gross Salary 1	384.63	159.71	384.63	100.00
Gross Salary 2	396.84	164.78	396.84	103.18
Net Salary	258.89	107.50	258.89	67.31

Source: Oficina del Escalafón Magisterial: Secretaría de Educación, base de datos de la planilla de julio del 2002 (Honduras Education Strategy Note).

As shown in the table above for primary teachers, the higher allowances in terms of the base salary are the ones for title (higher education title), which increases the base salary by 69% if higher education studies are completed and 34.5% if they are incomplete (this allowance is much higher in terms of the average wage composition for secondary teachers); seniority (with increments of about 15% of the base salary for each additional 5 years of experience); and geographic area (special incentives to work in Gracias a Dios and Islas de Bahía and for border areas). The allowance for professional achievement and merits, which is only minor, establishes a system of points (from 50 to 200) to be attributed as a function of

accomplishments like publications, participation in seminars, languages skills, etc.

Guatemala:

In Guatemala, there are six salary categories for teachers which consist of a base salary for category A teachers, and a base salary plus a percent of the salary scale (or *escalafón*) for the remaining categories (B-F), both of which depend on length of service. Since 2002, teachers qualify for an increase every four years of service (it was every five years until 2001). The base salary reached US\$ 224 in 2002. The “*escalafón*” component of the salary is 25% for initial entry teachers, 50% for teachers with four years of service, 75% for those with eight years of service, 100% for those with 12 years of service, and 125% for teachers with 16 years of service. The table below shows the salaries for selected categories of teachers. There are no salary differentials for teachers trained by different institutions and no additional bonuses for

Type of Teacher	Category B	Category C	Category D	Category E	Category F
Pre-primary and primary*	280.32	336.38	392.45	448.51	504.58
<i>Empírico</i>	277.50	333.06	388.61	444.16	499.71
Primary school principal*	285.06	342.14	399.10	456.19	513.15
Secondary – 2 periods **	20.10	24.06	28.16	32.13	36.10
Secondary – 30 periods (full-time teacher) **	301.31	361.47	421.76	482.05	542.34
Secondary school principal	301.31	361.47	421.76	482.05	542.34

Source: The World bank (2004): "Guatemala – Equity and Student Achievement in Primary Education"; Notes: (*) Monthly salaries; (**)Secondary school teachers are paid per 45 minute period of instruction, starting with a minimum of two periods and reaching a maximum of 30 periods.

geographic location, or any other special skill (i.e. bilingual teachers). There are no salary increases based on performance. The teacher

management law of 1961 has provisions for salary increases based on performance. Unfortunately, it was never implemented.

Nicaragua:

In Nicaragua, teacher salaries range between US\$ 90 and US\$ 112 a month, depending on qualifications, years of experience and post location (see Table below for primary teachers). In general, the premium attached to additional formal training and hardship posting can be very significant: up to 33% of gross earnings for a primary school teacher in a multigrade classroom in rural areas. The premium attached to seniority can be significant for those with 10 or more years of experience. No attempt was made to change the incentive structure, nor the relationship between salaries and performance. Although Ministry staff and union leaders have agreed on the need to tie salary increases to increased teacher quality and to teacher performance, there has been no move to implement a merit pay system.

Table 4. Average Monthly Salary and Stipends for 2002 (in US\$)

Position	Basic Monthly Salary	Bonus per additional diploma	Hardship zone pay	Bonus per year of seniority	Gross salary	Monthly bonus	Total monthly salary
Primary							
Teacher with Degree	48.66	11.78	18.13	0.68	79.26	12.59	91.85
Teacher without Degree	48.66	11.07	17.92	0.68	78.33	12.59	90.93
Multigrade Teacher with Degree (Grades 1-3)	57.47	13.37	21.25	0.68	92.78	12.59	105.37
Multigrade Teacher with Degree (Grades 4-6)	55.51	13.01	20.56	0.68	89.76	12.59	102.35
Multigrade Teacher without Degree (Grades 1-3)	52.85	11.82	19.40	0.68	84.76	12.59	97.35
Multigrade Teacher without Degree (Grades 4-6)	51.06	11.50	18.77	0.68	82.01	12.59	94.6

Source: Arcia (2003).

Annex VII: Curricular and Pedagogical Reforms in Central America

Box 7.1: Curricular and pedagogical reforms in Central American countries

El Salvador:

The education reform, which started in 1994/1995, promoted a curriculum change including both primary and secondary. A constructivist curriculum was introduced and pedagogical practices were made consistent with the new approach. Four main subjects are taught at the basic level: language and literature, math, natural sciences and social studies. New textbooks were produced for all grades. The school year for pre-primary, basic and secondary education consists of 200 days distributed over 11 months. The education reform program promoted five hours a day of classes in basic education, 40 hours in the academic track of secondary education, 44 hours in the first two years and 30 hours in the third year of the technical/vocational track.

A recent assessment undertaken by Schiefelbein (2004) and Kraft (2004) shows that too little emphasis is put on reading and writing skills in the curriculum of the first three grades of primary education. Additionally, teaching practices remain traditional and contribute to explain the still unsatisfactory learning outcomes in students of disadvantaged socio-economic background. Among the causes mentioned for this stagnation in pedagogical practices are the absence of teaching guides to operationalize the new curriculum and the insufficient pedagogical preparation of teachers. Finally, the textbooks that accompanied the new curriculum were never evaluated from the learning perspective. The quality of the grades 7 to 9 is particularly low also due to frontal pedagogical techniques and the lack of an integrated and pertinent curriculum. There is also some evidence that effective class time is substantially lower than the official one.²⁸⁶

Guatemala:

The education reform started in 1996 also promoted the introduction of a new curriculum, with key emphasis on multicultural education and Spanish-Maya bilingualism. The curriculum introduces active and participatory pedagogical practices in pre-primary and primary, with an interdisciplinary focus. New textbooks were produced. To deepen the new approach, a new curricular reform also extended to lower secondary is underway since 2003. Primary school teachers are supposed to teach five hours per day, or 25 hours per week for 180 days. Full-time secondary school teachers should teach 22.5 hours per week.

Political instability and teacher opposition have complicated the effective application of this new curriculum. However, they have been successes in the new bilingual approach (see below).

There is evidence that most teachers do not teach more than four hours per day, maybe even less, and an average of 133 days per year.²⁸⁷

Honduras:

At the beginning of the 1990s, a curriculum based on “*Rendimiento Básico*” for pre-primary, primary and lower secondary was approved. New textbooks were also produced for the same levels. The official school calendar establishes a minimum of 200 schooling days per year, covering 10 months, and 30 class hours per week (primary).

²⁸⁶ See Shiefelbein (2004), which reports figures of about 500 class hours a year (however, based on old data).

²⁸⁷ See Rubio, F (2000): “Presentation on the Status of Bilingual Education”, MEDIR Project, USAID.

However, little pedagogical change was introduced in the curriculum and applied in the classroom. Recent evidence²⁸⁸, although only gathered on a sample of about 120 schools, shows that traditional dictation techniques are still widely used. Therefore, in 2002, a new curriculum with a constructivist focus was designed for pre-primary and basic education (*Curriculum Nacional Básico*). New textbooks for pre-primary and basic education are currently under validation and production, and teacher training to help with the application of the new curriculum under way. There is evidence of much lower effective class time than the official one.²⁸⁹

Nicaragua:

Curricular reform was key to the education reform and gradually implemented from 1993 to 1998 for primary education, with a humanistic-constructivist focus. New textbooks were produced and the technical staff of the Ministry fully replaced. The official school calendar establishes 180 schooling days per year and five class hours per day (primary).

The curricular reform was largely aimed at eliminating from the education system the focus, contents and structure that had been established under the Sandinista, with the result that it paid too little attention to technical aspects and to teacher involvement in the process of change. The reform was overall an improvement over the past situation, but lacked consistency in the articulation of its different internal components and in its focus, with consequences on the teaching-learning process. Textbooks were largely financed by external donors, and in the end, do not fully reflect the national, rural and multicultural environment. Finally, teachers still do not seem to have fully internalized the constructivist approach. Recent evidence suggests that more than 90 percent of teachers keep on applying traditional techniques where students are seen as passive actors.²⁹⁰ Teacher training has not been fully planned to address this challenge, although this is gradually changing.

Source: Own elaboration, based on Arrien (1998).

²⁸⁸ See Di Gropello and Marshall (2004).

²⁸⁹ See Honduras-Secretary of Education (2002): "Todos con educacion: Honduras 2003-2015", which reports up to 333 yearly hours (versus the official 1200 ones) in a worse case scenario.

²⁹⁰ See MECD (2004): "Políticas de educacion basica y media" – Version preliminar

Annex VIII: Methodological Aspects on the Analysis of Effective Schools in Honduras and Nicaragua

Data. The national assessment datasets used for the education production function studies reviewed earlier in this chapter were used for both Honduras and Nicaragua. In Honduras, the Ministry of Education administered tests in Spanish, math, and science for both third and sixth graders along with surveys of students, parents, teachers, and principals in a randomly chosen group of 1090 schools. In Nicaragua, one stratified random sample of roughly 250 schools for the third grade and another of the same size for the sixth grade took Spanish and math exams and parents, students, teachers and principals completed surveys.

Effective and control schools. A group of “effective schools” and control group schools were then identified for each country. For Honduras, effective schools are defined as those schools that score at least three quarters of a standard deviation below the mean on a constructed socio-economic status (SES) composite variable and at least three quarters of a standard deviation above the mean on a minimum of three of the six exams. The control group of schools are simply the remainder of schools whose SES index rank was three-quarters of a standard deviation or more below the mean. While this is a somewhat rough method of choosing a control group, the effective and control groups were compared across multiple background indicators and appeared to be quite similar. In Nicaragua, there was not a sufficient number of schools that qualified as effective schools using the same criteria as Honduras. This is probably at least in part due to the fact that the sample sizes were less than a quarter the size of that of Honduras as separate samples took the third and sixth grade exams. Effective schools were therefore defined as those schools scoring at least one quarter of a standard deviation above the mean on both exams and at least one quarter of a standard deviation below the mean on a constructed SES index. The control group was again defined as the remainder of the schools with SES index rankings one quarter of a standard deviation below the mean. For the sixth grade schools a lower bound cut off point was also established for the control group as without it the effective and control groups were statistically significantly different on a number of background measures.

By and large the background characteristics of the control group of schools matched the background characteristics of the effective schools. We did not want to match schools on school characteristics as it was those very characteristics that we wanted to observe for potential differences across high-performing and lower-performing low-income schools. At the same time we wanted to be sure that effective schools were not simply schools where parents had higher education levels, more access to services, or were located in more urban locations. Once creating the control groups we found no statistically significant differences between these types of background indicators for any of the groups under analysis.

Methodology of analysis. A series of indexes were created for each data set using principal components analysis. These were based on the inter-correlation between related variables as well as on previous literature on identified characteristics of high-

performing, low-income schools. Paired t-tests were then conducted on all individual and composite variables to identify what characteristics were significantly different between the effective schools and the control groups. There were hundreds of variables in each dataset, far too many to report here, so we have decided to only report those variables that were statistically significant as well as a few others that are interesting. There were a few variables that were statistically significant that are not reported here because they did not seem particularly enlightening or important.

Annex IX: Intercultural Bilingual Programs in Nicaragua and Honduras

Box 9.1: Intercultural Bilingual Programs in Nicaragua and Honduras

Nicaragua - Bilingual Intercultural Education Program (PEBI)

The Atlantic Coast of Nicaragua is comprised of 19 municipalities occupying nearly 50 percent of the national territory, divided into two autonomous regions (RAAN and RAAS) which have the largest indigenous and Afro-Caribbean population of the country, namely Miskito, Sumu-Mayangna, Garifuna, Creole and Rama. The primary languages in these communities are Creole, English, Mayangna and Miskito. Bilingual education programs were created in 1985 to serve the non-native Spanish speaking populations of the Atlantic Coast; nevertheless, these programs remain relatively small and poorly funded.

Bilingual education is offered in English, Mayangna, and Miskito at the preschool and primary school levels through the Bilingual Intercultural Education Program (PEBI). Investment in this program is limited, in part because the current anti-Sandinista administration sees PEBI as a Sandinista created program. But some advances are being made, for example the URACCAN, the Nicaraguan Atlantic Coast Autonomous Regions University, offers a distance-education bachelor degree in bilingual intercultural education for PEBI teachers and teacher-trainers ²⁹¹.

Honduras – PRONEAAH-Intercultural Bilingual Education (EIB)

According to the 2001 census, at least 7.2 percent of Hondurans identify themselves as Indigenous or Afro-Honduran Peoples (more according to household survey data), and nearly half of those either speak or at least understand one or more of the six autochthonous languages spoken (Garifuna, Miskitu, Pech, Chortí, Tol, Tawahka). The largest autochthonous linguistic group is the Garifuna (pop. 46,448) and the Miskito (pop. 51,607), followed by the Chortí (pop. 34,354), the English-speaking Black (12,370), the Tolupán (pop. 9,617), the Pech (pop. 3,848) and the Tawahka (pop. 2,453).

The PRONEAAH-EIB program results from an agreement signed by the Secretariat of Education and the Confederation of Autochthonous Peoples of Honduras (CONPAH) to provide quality and equitable education to the culturally and linguistically diverse population. PRONEAAH started in 1995. Two World Bank projects have contributed to its successful implementation, the Basic Education Project (PROMEB 1995-2001), and particularly the Community-based Education Project (2001-2005), which includes full support to the Intercultural Bilingual Program (EIB).

Leaders and teachers of the Miskito and Garifuna ethnic groups were involved in the planning and design of EIB ²⁹². During this initial phase a base document for a bilingual intercultural curriculum was created, the Miskito and Garifuna languages were normalized, some texts and materials such as dictionaries were developed, and national seminars on EIB and appropriate teaching methods were conducted. Despite these important macro accomplishments EIB efforts did not reach actual schools or classrooms. Several additional ethno-linguistic groups were incorporated into EIB planning leaving scarce resources for program implementation. Issues still

²⁹¹ La Prensa (2004) and MECD website. To be added that two Bank-funded projects support Intercultural and Bilingual Education program of MECD. The APRENDE II (1999-2003) financed the construction of 58 new primary schools and 7 preschools, and the rehabilitation of 21 schools on the Atlantic Coast. Likewise, the Social Investment Fund (FISE) has built and equipped approximately 170 schools (including Institutes) since 2000 on the Atlantic Coast region.

²⁹² Forster and Martinez (2002).

requiring attention included EIB teacher training, national EIB leadership, EIB evaluation, and classroom implementation²⁹³.

Taking into account lessons learned, a new strategy was included in the Community-based Education Project which sought: (i) the institutionalization of an EIB Program in ethnic traditional schools; (ii) the creation of PROHECO-EIB schools which include preschool; (iii) on-the-job teacher training programs for EIB Certification; (iv) piloting of community-managed projects run by local associations (ADEL-PEC); (v) adaptation of the EIB curriculum based on the revised national basic curriculum; (vi) creation of the EIB student and teacher performance evaluation system; and (vii) institutional arrangements for program administration at the central, department, district and local levels.

The most salient achievements in the period of 2002-2004 have included: (a) the establishment and dissemination of a conceptual framework for EIB education; (b) the strengthening of human resources at central and regional level, to work with EIB schools and EIB issues; (c) a curricular adaptation for preschool and basic levels; (d) on-the-job training for EIB teachers; and (e) the creation of PROHECO-EIB schools or addition of preschools (CCEPREB) to existing PROHECO schools (in 2003, 135 preschools were organized and added to existing PROHECO schools in indigenous areas. Likewise, a total of 222 PROHECO-EIB schools (115 in 2003 and 107 in 2004) have been created, 25 of which are first-time experiences in Moskitia (Miskito language); 5 Tawahka (Tawahka language), 7 in Bay Islands (English)).

²⁹³ Forster and Martinez (2002); The World Bank (2002).

Annex X: Tables and Figures for Chapter IV

Table 10.1: Recurrent Expenditure per Child and Student (in 2002 US \$, unless otherwise specified)

	Pre-primary		Primary		Secondary		Tertiary	
	Exp. per child	Exp. per student	Exp. per child	Exp. per student	Exp. per child	Exp. per student	Exp. per child	Exp. per student
El Salvador (a)	66.8	171.8	180	217.8	69.5	260.7	55	246
Guatemala	na	113	Na	142	na	184	na	684
Guatemala, 2001	34.5	110	133.9	145	24.9	184	97.6	549
Honduras	29.5	84.2	144.5	142	78.1	238.4	na	na
Honduras, 2001	28.2	79.5	152.5	151.2	78.3	280.2	139.8	932.6
Nicaragua	9.9	24	82.7	85.7	17.3	47.4	na	na
Costa Rica	na	na	Na	250	na	390	na	na

Sources: Table 2 and MINED official enrollment data (except Costa Rica: Sanigest, 2004, and Honduras 2002: Household Survey). Notes: (a) Primary = basic and secondary = upper secondary.

Table 10.2: Distribution of Public Enrollment by Income Quintiles - Preschool

	HONDURAS 2003		NICARAGUA 2001		GUATEMALA 2000		EL SALVADOR 2002	
Q. I	30,858	25.0	33,835	23.8	52,108	23.9	35,607	21.6
Q.II	27,377	22.2	32,838	23.1	52,004	23.9	42,086	25.5
Q.III	26,858	21.7	31,533	22.1	42,374	19.5	33,824	20.5
Q.IV	23,585	19.1	28,152	19.8	42,998	19.8	32,402	19.6
Q.V	14,861	12.0	16,104	11.3	28,175	12.9	21,171	12.8
Total	123,539	100.0	142,462	100.0	217,659	100.0	165,090	100.0

Source: Household Surveys.

Table 10.3: Distribution of Public Enrollment by Income Quintiles - Primary

	HONDURAS 2003		NICARAGUA 2001		GUATEMALA 2000		EL SALVADOR 2002	
Q. I	336,308	29.3	231,130	26.1	424,447	24.9	230,481	27.5
Q.II	296,598	25.9	225,017	25.4	389,444	22.8	214,956	25.7
Q.III	237,965	20.8	197,775	22.4	400,585	23.5	180,470	21.5
Q.IV	179,738	15.7	161,277	18.2	327,614	19.2	134,111	16.0
Q.V	95,894	8.4	69,560	7.9	164,194	9.6	77,477	9.3
Total	1,146,503	100.0	884,759	100.0	1,706,284	100.0	837,495	100.0

Source: Household Surveys.

Table 10.4: Distribution of Public Enrollment by Income Quintiles - Secondary								
	HONDURAS 2003		NICARAGUA 2001		GUATEMALA 2000		EL SALVADOR 2002	
Q. I	42,538	25,394	8.4	16,268	7.3	54,671	14.09	21.6
Q.II	64,002	51,391	17.0	30,091	13.4	84,053	21.66	25.5
Q.III	93,613	70,058	23.2	48,038	21.4	90,220	23.25	20.5
Q.IV	114,524	95,255	31.6	73,031	32.6	91,223	23.51	19.6
Q.V	92,934	59,382	19.7	56,965	25.4	67,929	17.5	12.8
Total	407,611	301,480	100.0	224,393	100.0	388,096	100.0	100.0

Source: Household Surveys.

Table 10.5: Distribution of Public Enrollment by Income Quintiles - Tertiary								
	HONDURAS 2003		NICARAGUA 2001		GUATEMALA 2000		EL SALVADOR 2002	
Q. I	1,580	1.6	0	0.0	3,173	3.5	1,154	2.0
Q.II	2,361	2.4	1,267	4.1	510	0.6	4,142	7.2
Q.III	6,074	6.3	3,689	11.9	2,404	2.6	4,111	7.2
Q.IV	20,831	21.5	11,522	37.3	14,981	16.3	18,037	31.5
Q.V	66,206	68.2	14,432	46.7	70,767	77.1	29,798	52.1
Total	97,052	100.0	30,910	100.0	91,835	100.0	57,242	100.0

Source: Household Surveys.

Figure 10.1: Test Scores and Educational Expenditure by Region in Honduras

