

THE EMERGENCE OF EDUCATION IN THE REPUBLIC OF COLOMBIA IN THE 19TH CENTURY: WHERE DID WE GO WRONG?*

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Abstract

This article studies the evolution of primary education in Colombia during the nineteenth century and the factors which determined its development. It explores possible origins for its failure and slow progress, factors which made Colombian education one of the most backward in the world at the end of that century. It also analyzes the performance of regional education and how disparities between the State governments responsible for education tended to converge. With these aims in mind, a series of annual indicators relating to education on both a regional and national level were compiled, covering the largest possible number of years. Among other reasons, the failure to achieve a mass coverage in primary education in the nineteenth century was due to the absence of a suitable structure of incentives for its expansion, given the economic, political and social organization which prevailed in the country. To make matters worse, this structure of incentives did not change in the course of the century.

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Key words: Economic history, education, Colombia, incentives

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I. INTRODUCTION

This article studies the evolution of primary education in Colombia during the nineteenth century, as well as the factors which determined its development. It specifically explores the possible reasons for its failure and slow progress, factors which made Colombian education one of the most backward in the world at the end of that century, even within Latin American standards. It also analyzes the performance of regional education and the way in which disparities between states tended to converge.

Towards this end, it investigates the historical characteristics, both of Colombian education, and the country's economy, demography and institutional framework during the nineteenth century. This work advances the study of the economic history of education in Colombia by providing an international and regional comparison based on a deep quantitative analysis. In the case of Colombia, series of annual statistics were assembled and compiled, both on a national and regional level, about the number of students (distinguished by gender), schools, teachers and budgets, among other variables, covering the largest possible number of years. To construct this data base, primary sources were consulted.

This study finds that one of the main reasons for the failure to provide a mass coverage of primary education in the country in the nineteenth century was the absence of incentives for children to study and for parents to send children to school, given the economic, political and social structures which prevailed at the time.

This article is divided into five sections. The second section analyzes nineteenth century Colombian education within an international context. The third examines the factors which led to the backwardness of Colombian education. Among them, it particularly deals with the educational system and educational policies, the relationship between Church and State, the quality of education, the political situation and civil wars, the economic structure, the financing of education and demographic factors, including the gap between genders and social classes. The fourth describes the evolution of education on a regional level and undertakes an analysis of its convergence. Finally, the fifth section presents our conclusions.

II. NINETEENTH CENTURY COLOMBIAN EDUCATION IN THE INTERNATIONAL CONTEXT

During the nineteenth century Colombia was one of the world's most backward countries in education. As is seen in Graph 1, the indicator for primary school students as a percentage of the population in Colombia was considerably smaller than that found in the developed countries and even less than the average for Latin America.¹ In the mid-19th century, the number of primary school students was nearly 20% of the population in the United States, more than 10% of the population in Holland and the United Kingdom, nearly 10% of the population in France, and more than 5% of the population in Spain.² In Colombia this indicator never reached 2% and the gap between Colombia and the developed countries continued throughout the century.

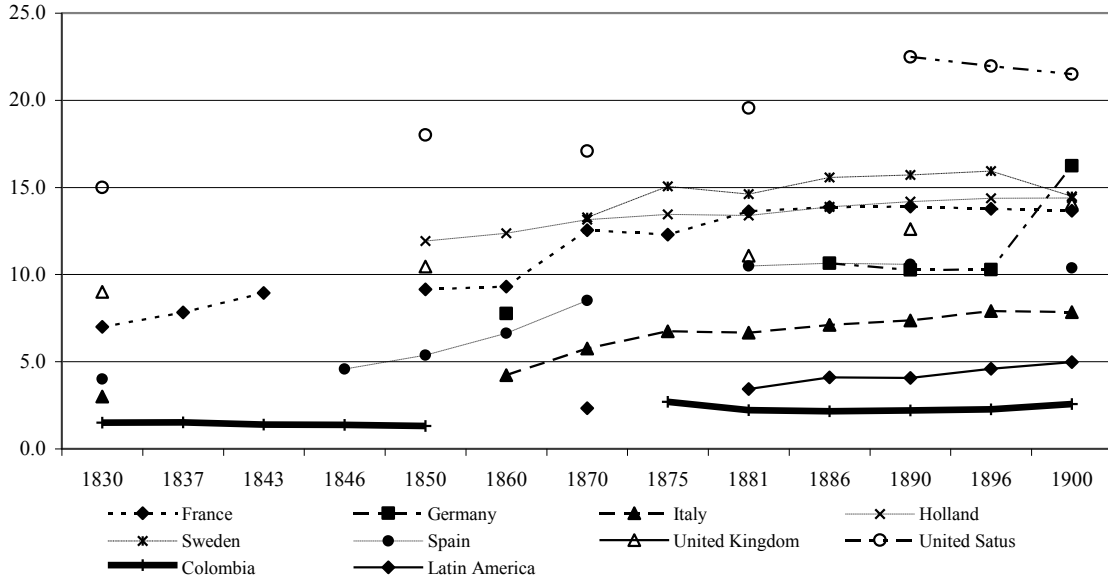
In comparison with the countries of Latin America as well, which achieved their independence nearly simultaneously, the situation of Colombian education was very deplorable (Graph 2). The number of children in primary education, as a percentage of the population, was only comparable to that of Brazil, Bolivia and Peru. By the end of the century, the level of school attendance in Colombia did not approach the average for the region, having always fallen below that level. The rate of illiteracy, for its part, was one of the highest in Latin America (Graph 3). If it is compared with the rate in the United States, which was 13% in 1890 and that of Canada, 17.5% in 1861, the educational situation in Colombia was even more lamentable.³

¹ The ratio between students enrolled in primary education and the total population is a very rough indicator of a country's educational situation. However, due to the lack of data, it is the only indicator that enables us to realize some kind of international comparison throughout the century. As a proxy for the gross rate of school enrollment one could use the ratio between the number of students in primary education and the population registered as small children and youngsters in the Colombian censuses of the 19th century (in this case we are able to undertake a comparison for 1875, Graph 1b). However, when you group the population in this way and do not break it down by ages, the international comparisons become difficult, since you cannot establish homogeneous age groups between countries.

² Among articles which analyze the economic history of education in the developed countries, see, for example: Goldin, C. (1999), Goldin, C. and Katz, L (1999, 1999b) and Goldin, C. and Katz, L (2003) for the United States, West, E. G (1975), Long, J. (2006), Mitch, D. (1983), Mitch, D. (1984), West, M. (2000) for England, Waldow, F. (2002) for Sweden, Diebolt, C. (1999) for Spain, Flora, P. (1983) for Western Europe, and Easterlin, R. (1981) and Galor, O. and Moav, O. (2006), for a group of countries, among others.

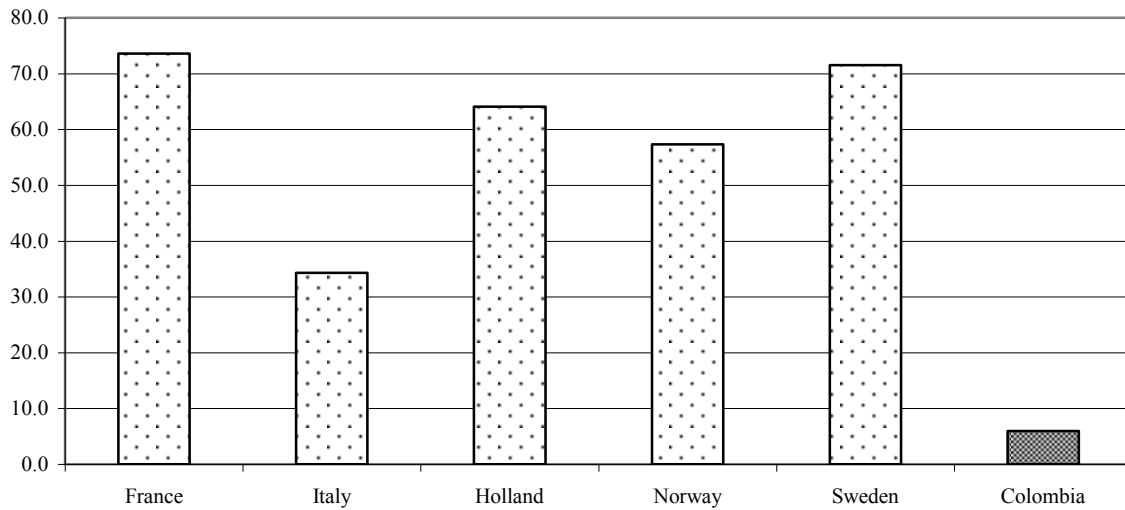
³ See Ramírez, M. T. and Téllez, J. (2007).

Graph 1
Students in primary education
(percentage of the population)



Source: See Appendices 1 and 2

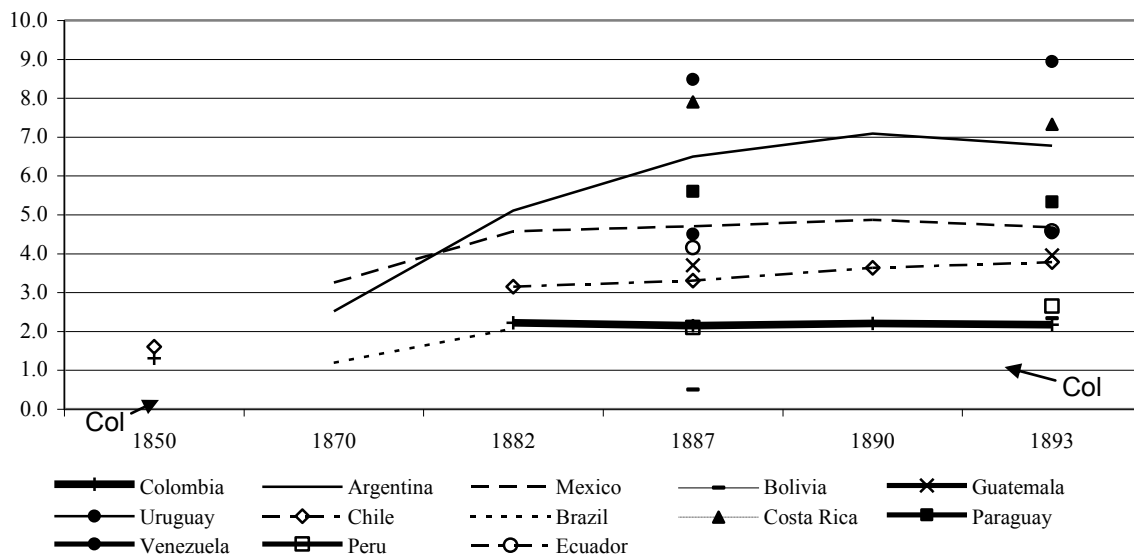
Graph 1b
Students in primary education, 1875
(percentage of the population between 5 and 15 years-old)



Source: Appendix 2

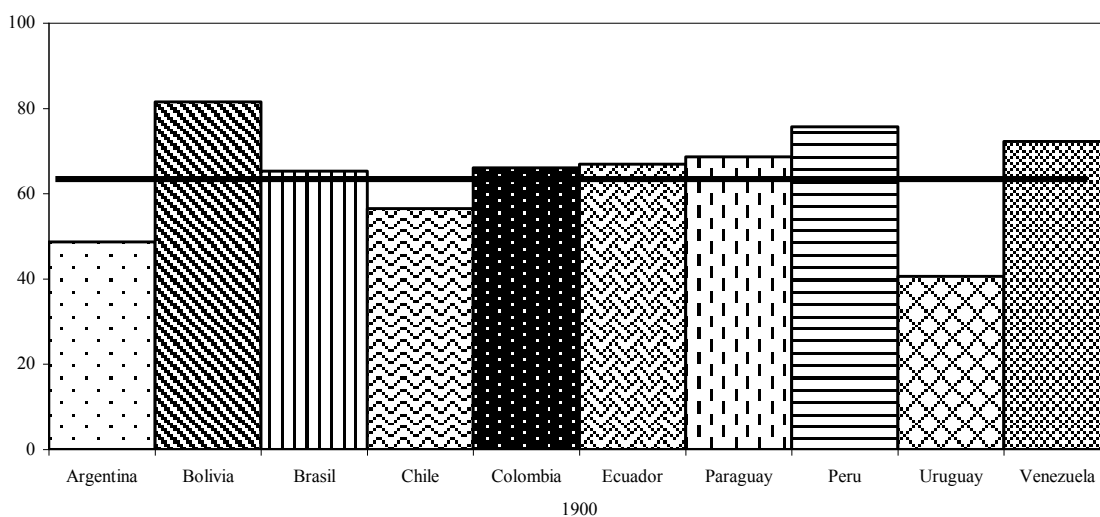
Note: The population corresponding to Colombia is that of small children and youngsters (the population under the age of 16).

Graph 2
Students in primary education in Latin America
(percentage of the population)



Source: See appendices 1 and 2

Graph 3
Illiteracy rate as a percentage of the adult population, 1900
(Percentage)



Source: OXLAD.

Education in 19th century in Colombia not only backward in terms of international patterns, it also showed a very slow expansion. In fact, the ratio between the number of children enrolled in primary education and total population barely grew from 1.5% in 1837 to 2.6% in 1898 (Table 1), which shows that achievements in the field of education were very poor in that period. Countries like Argentina managed to triple this indicator in only 20 years, which grew from 2.5% in 1870 to 7.1% in 1890 (Graph 2). As Ramírez and Téllez note (2007), it was only in the mid-20th century that education began to expand in Colombia, a period during which there was a rapid and sustained economic growth and a significant change in the country's economic and demographic structure.

As will be seen in this article, educational advances in Colombia were very marginal in the course of the 19th century. In the following sections, we will examine the possible origins of the failure and slow takeoff of education, which meant that at the beginning of the 20th century Colombia was one of the world's most backward countries in education matters.⁴

III. THE EVOLUTION OF EDUCATION IN COLOMBIA DURING THE 19TH CENTURY: WHAT FACTORS WERE RESPONSIBLE FOR THE BACKWARDNESS OF EDUCATION IN THE COUNTRY?

The precarious level of education in Colombia and the few achievements made in that field throughout the 19th century had its origins both in factors intrinsic to the country and the specific characteristics of the educational system that was established in the Republic.

Structural factors such as poverty and income disparities, civil wars and internal conflicts, a complex geography, a fragmented political organization, a poor transportation infrastructure, deficient institutions and the relationship between Church and State were responsible for the country's having not only one of the lowest educational levels in Latin America but also a low level of economic development.

⁴ In accordance with the indicator for the ratio between children enrolled in primary education and the population, school enrollment in Colombia at the end of the 19th century was a little higher than that of the India (1%), the Philippines (1.9%), Egypt (2.2.%) and Indonesia (0.6%). Data taken from Easterlin, R. (1981).

Table 1
Students in Primary Education in Colombia
(per 10,000 inhabitants)

year	Schools	Students	Estimated Population (0000)	Students/population (0000)
1827	486	19,709	132	150
...				
1833	530	17,010		
1834	615	20,353		
1835	690	20,123	169	119
...				
1837	1,050	26,071	171	152
1838	1,049	28,358	177	160
...				
1843	1,205	26,790	193	139
1844	1,203	27,124	197	138
1845	1,096	26,819	200	134
...				
1847	1,133	29,118	212	137
1848	1,133	29,142	213	137
...				
1850	1,119	28,821	220	131
1851		27,993	224	125
...				
1874	1,765	84,493	315	269
...				
1881		71,070		
1882	1,651	80,091	362	221
...				
1887	1,612	85,241	396	215
...				
1890	1,672	85,154	413	206
1891	1,822	91,976	418	220
...				
1893		93,187	430	217
1894	1,696	91,812	436	211
...				
1896	1,758	101,367	448	226
...				
1898	2,149	117,941	460	256
...				
1903	1,809	110,286	425	259
...				
1905	2,580	197,705	412	480

Source: See Appendix 1 for the source of the data on students and schools.

The data on the population of Colombia for the years 1835, 1843, 1851 and 1870 were taken from the country's censuses; the other data from Maddison.

It is assumed that data on students in 1851 is the same as that of 1850, in order to obtain the ratio between students and population.

The data for the years 1834, 1835, 1881, 1891 and 1896 may be an underestimate, since the information on students in private education is incomplete.

Additionally, factors that were more specific to the educational setting, like the manner in which education was financed, the labor market, demographic factors (like the scarcity of immigrants) and gaps between genders and social classes, affected the way in which education evolved in the course of the century and played a part in Colombia's distance from the path followed by other countries. These factors and the way in which they influenced education are analyzed, as follows.

A. General aspects of the Colombian economy in the 19th century

In 1819, at the end of the war which achieved independence from Spain, the present territories of Venezuela, Colombia, Panama and Ecuador formed a confederation known as the Republic of Gran Colombia. It began to break up in 1830 and it was only in 1832 that the antecessor of modern Colombia, the Republic of Nueva Granada, was established.

The growth of the Colombian economy was very slow⁵ in the 19th century. According to the estimates of Kalmanovitz, S. (2006) the country was very poor in 1800, with a per capita income that was only 70% of that of Mexico and a third of that of the United States. Fifty years later it was even poorer.⁶ By the end of the nineteenth century Colombia had one of the lowest per capita incomes in the world (Graph 4). Moreover, it was one of the lowest in Latin America: in 1913 Argentina's was the triple of Colombia's and Chile's more than double (Table 2).

In general, the country's economic development was mostly based on foreign trade and to a large extent, that trade was responsible for the evolution of the country's economy. In the first half of the century, the low dynamic of foreign trade was one of the causes for the economic crisis Colombia suffered; by contrast, increased exports in the second half of the century stimulated a slow economic growth. According to Ocampo, J.A. (1984), the growth of the economy in the second half of the nineteenth century followed the cycles of foreign trade. The same author notes the following cycles of foreign trade: stagnation during the first half of the nineteenth century, followed by a dynamic growth and diversification between 1850 and 1882 (although there was a strong decline between 1875 and 1877), a

⁵ According to Kalmanovitz, S. (2006) the per capita GDP of Colombia remained stagnant in the first half of the nineteenth century and grew at an annual rate of 0.8% during the second part of that century.

⁶ According to Kalmanovitz, S. (2006), per capita income in 1800 was 27.4 silver pesos, 308 dollars in 1985 and only 342 dollars in 1905.

depression between 1883 and 1887, a recovery between 1887 and 1891 and finally, an expansion between 1891 and 1898, which was interrupted by a fall in coffee prices and the War of a Thousand Days. Nevertheless, during the 19th century Colombia presented one of the lowest opening indexes in Latin America.⁷

According to Ocampo (1984), “the growth of Colombian exports in the 19th century was really discouraging” (p. 47). Foreign investment in Colombia was very moderate: it was only towards the end of the century that foreign capital began to enter the country, most of it English and aimed at the building of railways. As a consequence, the country did not count on important capitals that would have stimulated its development.⁸

The revenues of the national government, in particular, were very low and to a large extent reflected the foreign trade cycle. Wars and constant civil conflicts throughout the century⁹ meant that an important part of the nation’s resources, which were scarce to begin with, were spent on different military needs.¹⁰ In addition, the country had a relative high internal and foreign debt, deriving from the Independence movement and the dissolution of the Republic of Gran Colombia.¹¹ As Ocampo points out (1984), the fiscal situation of the country after Independence was also affected by an increase in government spending as it created a bureaucracy and State army and suffered from a disorganized tax system and stagnant foreign trade.

These factors led to a continual fiscal crisis, which made the State unable to promote the economic development of the nation. It was only between 1850 and 1880 that public finances were strengthened, thanks to the growth of foreign trade.¹² However, in the 1880’s, exports not only stagnated but in many cases diminished, which resulted in problems of financing and a scarcity of resources.

⁷ See Ocampo, J. A. (1984)

⁸ As Melo, J.O. (1979) shows, 19th century European capital, particularly from England, flowed to Argentina, the United States and Australia, which mostly exported meat and grains to Europe. In a similar fashion, most European emigrants settled in those countries.

⁹ Between 1830 and 1902, eight civil wars can be identified, which lasted on average 19 months each. See McGreevey, W. (1988).

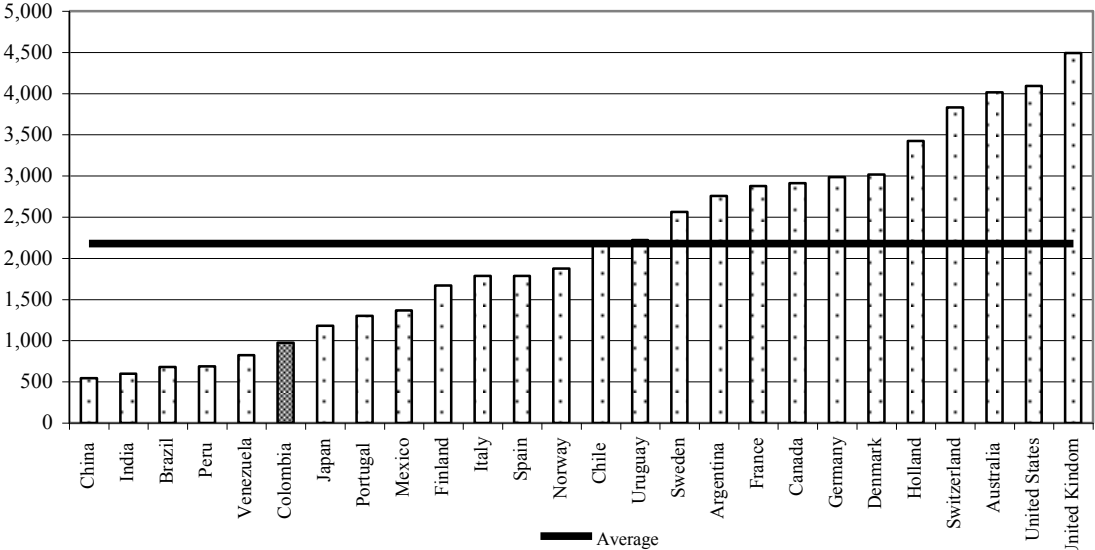
¹⁰ For example, according to Tovar, H. (1994), 44% of the budget went on the army and navy during the years leading up to the “war of the supremes” (1829-1842).

¹¹ According to Tovar, H. (1994), when the debt of the Republic of Gran Colombia was divided among its successor nations, Colombia, Ecuador and Venezuela, in 1839, Colombia was left with a debt of approximately \$52 million, which amounted to more than 20 times the public revenues of the period (p. 114).

¹² See Ocampo, J. A. (1984).

What is more, Colombia was internally divided, both in geographical and political terms, which did not allow for the consolidation of an internal market or a unified State. As Kalmanovitz, S. (1979) notes, it is very difficult to speak of a Colombian nation before the last two decades of the 19th century, due to the fact that the regions had few commercial and economic relations with one another and each mounted its own army. One of the main factors behind this fragmentation was the precarious transportation infrastructure. According to Ramírez (2007), Colombia had few roads at the end of the 19th century and most of them were stone-paved trails in very poor conditions. Railways only began to be built at the end of the century and the navigable rivers were not interconnected. As a result, the regions were isolated from one another, nor were its urban centers linked and markets were fragmented and limited, all of which held back the development of the country even more.

Graph 4
 GDP Per capita in 1900
 (Geary-Khamis 1990 dollars)



Source: Angus, Maddison, Historical Statistics for the World. <http://www.ggdc.net/maddison/Economy/> 1-2003 AD: March 2007

Table 2
GDP per capita (1985 dollars)

Country	1800	1850	1913
Colombia	304	304	652
Argentina	nd	874	2,377
Brazil	738	901	700
Mexico	450	317	1,104
United States	807	1,394	4,854
Chile	nd	484	1,685

Source: Table 5. taken from Kalmanotivz, Salomón (2006).

B. Key factors in the evolution of Colombian education

After Independence, the new governments of Latin America regarded education as a crucial factor for the development of democracy.¹³ Education was a central concern of their new constitutions, and thus its governments drafted plans and set aside budget resources for the education of their citizens through the organization of a system of public education.¹⁴ But how was it that these countries followed different routes and obtained such different achievements in the field of education?

C. Goldin and L. Katz (2003) have identified six virtues which enabled education to rapidly expand in the United States in the 19th century and reach the highest rates of school enrollment in the world. Among them were the provision of education by small, fiscally-independent districts, public financing, the separation of Church and State, the absence of gender discrimination, open access to education and a tolerant system which allowed children to enter each school grade independently of their age, social status and past achievements, and, finally, an academic curriculum. In short, these virtues were based on principles of equality and fairness.¹⁵

Furthermore, for R. Easterlin (1981), the expansion of education in the leaders countries was frequently accompanied by a positive change in the structure of incentives for learning; and according to S. Engerman *et al* (2002), the countries with the highest educational

¹³ For an analysis of the ideological climate of Latin America after Independence, see Newland C. (1991).

¹⁴ See Newland, C. (1991) and Ossenbach, G. (2004).

¹⁵ See Goldin, C. (1999) and Goldin, C. and Katz, L. (2003)

achievements in Latin America were those where the population was relatively more homogenous and those where the number of immigrants were higher, as in the case of Argentina, Chile and Uruguay.

As will be seen in this section, very few of the virtues which would enable the United States to lead the world in education during the 19th century were found in Colombia. On the contrary, the country followed an educational system that was discriminatory, elitist and closed. In relative terms, the Colombian population was heterogeneous, there were few immigrants and incentives for learning were scarce. These factors contributed to the backwardness of education in the country in the 19th century and had repercussions that lasted well into the twentieth.

1. The Educational System, Ideology and the Relation between Church and State

When Independence was achieved, the organization of public education was one of the priorities of the new republican government. One of the main advocates of the promotion of education in the country was General Santander. For him “education is the basis of sound morality and the representative system: the generation which is raised improved by primary education will know how to recognize its duties and rights, be able to choose a useful trade and perform it with middling intelligence, respect public morality and preach it, provide good citizens, good parents, good spiritual guides and good magistrates”.¹⁶ In 1820, in fact, Santander, as Vice-President, ordered all cities and villas to found primary schools, financed by their own resources. Likewise, parishes with more than 30 parishioners had to have a school, which would be financed by their own neighbors.¹⁷ The Congress of Cucuta, in 1821, for its part, ordered the creation of schools for girls in the convents of nuns. During this period European educational systems were closely followed, especially the Lancastrian¹⁸ system of mutual teaching, which was meant to make up for the country’s

¹⁶ See his Message to Nueva Granada at the beginning of the year 1836, Bogotá December 31, 1835.

¹⁷ See Jaramillo, J. (1979).

¹⁸ The Lancastrian method of mutual education was developed, in a parallel way, by the Englishmen Andrew Bell, Joseph Lancaster and James Thomson. The latter two were in direct contact with Simón Bolívar and even visited South America to promote the application of the system, the first Venezuela and the second Colombia. In this method the teacher was supported by the oldest and brightest students, who acted as monitors for teaching the younger ones. Despite having many limitations, it was the most suitable system for the situation of the time, due to the scarcity of qualified teachers. See Ahern (1991).

shortage of teachers.¹⁹ In addition to this problem, the scarcity of resources was another one of the restrictions which Colombian education had to face during this period.²⁰

The Congress of Cucuta decreed that primary education would depend on the office of the Secretary of the Interior, who established the country's educational policy. However, the governors were responsible for the organization and supervision of education. It is worth mentioning that the mayors and parish priests supervised primary education on a local level.²¹

As can be seen in Table 1, according to the available statistics, the number of primary school students rose from nearly 20,000 in 1827 to 26,000 in 1837 and the number of schools doubled. Later on, during the 1840's, during the government of Ospina Rodriguez, important reforms of the educational system were carried out, which emphasized State intervention and encouraged the teaching of "useful sciences", moral training and discipline.²²

In addition, an order was given to establish schools in all of the parishes of the provinces, however, because of a shortage of resources, this law could not be satisfactorily applied. As the Governor of Buenaventura²³ noted in 1843, despite the order, it had not been possible to establish schools in all of the parishes of the province, due to "the obstacles which the poverty of some towns presents, the apathy of many mayors, the unwillingness to pay the necessary quota allocated to education and the difficulty of collecting it from individuals who live a great distances from the center of the parish".²⁴ As a consequence, between 1838 and 1848, the annual average growth rate of primary school students was less than 0.3% and of schools only 0.8%, approximately.

¹⁹ According to Jaramillo J. (1979), there were 11 Lancastrian schools in Bogotá in 1825. For a more detailed analysis of the Lancastrian schools in the country, see Montenegro, A. (1984).

²⁰ As Montenegro, A. (1984) remarks, in this period education had to be financed by donations, resources resulting from the expropriation of small convents, unpaid teachers and philanthropic associations, among others.

²¹ See Montenegro, A. (1984) and Zuluaga, O. et. al. (2004), for more details about the organization and legislation of education in this period.

²² For a complete analysis of education during the Republic of Nueva Granada, see Montenegro, A. (1984).

²³ One of the province of the Republic.

²⁴ Report of the governor of Buenaventura to the 1843 sessions of the provincial house.

After Independence, the Catholic Church continued to exert its influence on the new nation, though to a lesser extent than before, and particularly on the educational system which was organized in Colombia. At the beginning of the 1850's, the Liberal government promulgated a policy for the secularization of the State. During this period, the governments stopped regulating education, decentralized its administration and financing and allowed a complete freedom of teaching.²⁵ As Fresneda and Duarte (1983) point out, the central government ignored education to the point where there was no provision for its financing in the national budget. Thus, the parish councils became responsible for the financing and administration of education. However, the municipalities had neither the capacity nor the resources to assume this responsibility for education.²⁶

In the political field, the Liberal government introduced universal suffrage for males who knew how to read and write, progress in primary education became necessary, as it would play an important role in politics. Nevertheless, as Zuluaga, O. *et al.* (2004) maintain, the primary schools did not fulfill the role of educating the population about their political rights, nor did they help to improve the quality of local administration.

According to various historians, it was during the time of the radical governments that the greatest efforts were made to consolidate a system of public education which would cover the whole of the Republic.²⁷ In 1863, when Colombia became a federation of nine sovereign States, a number of laws were passed to promote primary education on the local level.²⁸ Once again, the information available for the 1860's is not sufficiently complete for us to evaluate the effectiveness of these laws. However, with the information we have about Antioquia and Santander²⁹ it was possible to conclude that they did have a positive effect, given that the number of students in the two States rose in an important way. The number of primary school students in Antioquia grew from 4,680 in 1864 to 14,795 in 1869, and in

²⁵ See Urrutia, M. (1979) and Zuluaga, O. *et. al.* (2004), among others.

²⁶ Important ideological differences about the running of the country's education were seen in the Liberal governments. In his 1853 report to the Congress, the Secretary of State Patrocinio Cuellar criticized the law which made the district councils responsible for all aspects of primary education. In his opinion, this put education in the hands of "the lowest and least competent corporation of the municipal regime" and decentralization meant that the central government turned its back on major responsibilities, including that for public education.

²⁷ See, for example, Jaramillo, J. (1979) and Rausch, J. (1976)

²⁸ The nine States were: Antioquia, Bolívar, Boyacá, Cauca, Cundinamarca, Magdalena, Santander, Tolima and Panamá.

²⁹ Antioquia and Santander were two of the most important states.

Santander from 4,934 in 1864 to 7,004 in 1869.³⁰ Thus, the federalist system had a positive impact on education, or it was more suitable for the development and encouragement of education.

Of special importance was the radical reform of 1870, during the government of General Eustorgio Salgar, which ordered, by means of the Organic Decree of Public Instruction, that public primary education should be free, compulsory for all children between 6 and 14 years of age, secular and centralized, under the supervision of the national government through the General Directorate of Public Instruction, which had branches in each State. It also covered such matters as the training of teachers, for which it tried to establish teacher training schools (normal schools) in the nine capitals, pedagogy and school infrastructure.³¹ The philosophy behind this reform was taken from the European pedagogical system. This reform represented the biggest encouragement of education seen in the country till then.

The expenditures, for their part, were divided between the nation, the federal States and the municipalities. The nation was to be particularly responsible for the financing of the teacher training schools and public libraries, school inspections and the provision of books and school supplies. The federal States, for their part, would be responsible for maintaining rural schools and the municipalities would have to construct the school infrastructure and provide their furnishings.³²

One of the most outstanding features of this reform had to do with the compulsory nature of primary education and religious neutrality. However, these two principles, which were opposed by the Church, became one of the main causes of the civil war that took place between 1876 and 1877.³³ In fact, the opposition of the Church reached such an extreme

³⁰ See the 1876 Report of the general director of primary instruction of the Union, Enrique Cortes, and Report of the President of Santander, J.M. Villamizar, to the legislative sessions in its ordinary sessions of 1865-1869. As Loy J. (1979) points out, Antioquia and Santander were precisely the States which undertook a veritable reorganization of public education.

³¹ As Jaramillo (1979) remarks, the 1870 reform was characterized by its integral approach to the educational question, since it dealt with aspects that ranged from the training of teachers to the building of schools and the formulation of a pedagogical conception which encouraged the development of the sciences and was consistent with the political aims of the State. According to Loy, J. (1979), "the existing schools were poorly equipped and the teachers were hopeless", p.2.

³² See Jaramillo, J. (1979) and Rausch, J. (1976) for a detailed analysis of the 1870 reform.

³³ For more details, see Message of the President of the United States of Colombia, Aquileo Parra, to the 1878 Congress. According to the President: "most of the clergy stated their opposition to the public schools, which they denounced as atheist, and they accused the governing party of having organized a plan of teaching aimed

that in some cases, like the province of Popayan, it impeded public education by prohibiting children from attending the schools.³⁴ In other cases, priests persuaded teachers to give up their posts and parents to refuse to send their children to school.³⁵

As we have mentioned, there are no statistics compiled in annual terms for this period³⁶ that would allow us to confirm this phenomenon in an empirical way. Nevertheless, the available figures suggest that the number of students tripled between 1850 and 1870, rising from 28,000 in 1851 to nearly 85,000 in 1874, and what is even more important, the number of girls who attended primary schools rose four times in this period (Table 3). Nevertheless, in the particular case of the States of Antioquia, Santander and Cundinamarca, we do have information for the first half of the 1870's. The number of primary school students in Antioquia grew from 17,000 in 1871 to 20,557 in 1875, the year before the outbreak of the civil war, while the figures for Santander were nearly 7,000 in 1870 and 13,300 in 1874.³⁷ The Secretary of Public Instruction for Cundinamarca reported the number of primary school students had increased by nearly 15,000³⁸ between 1872 and 1874. This increase in the number of students was the result of the introduction of compulsory primary education. However, the relative success of the reform only lasted a short time and was checked by the civil war of 1876-1877. According to Jaramillo (1979), the radical reform of 1870 was not a great success, mainly because of the opposition of the Church and its influence on a population the great majority of which was Catholic. Among other factors³⁹ were the lack of fiscal resources, the opposition of the Conservative party and opposition to government policies on the part of some of the federal States. The outbreak of the civil war halted the reform: many schools were closed and many children stopped attending them. As may be seen in Table 1, the number of primary school students fell from 85,000 in 1874 to 71,000 in 1881. The war also led to internal division among the

at destroying Catholicism in the country. Such a grave accusation, absurd as it may be, must have naturally filled families with alarm and annoyed the ignorant and simple sectors of the population, who hear no voice other than that of their priests". For a less radical and more conciliatory position on the part of the Church, see the correspondence between the Archbishop of Bogotá and the Secretary of the Interior and Foreign Relations of the United States of Colombia to the 1877 Congress.

³⁴ According to President Aquileo Parra (1878), the schools remained practically empty, especially in the state of Cauca.

³⁵ See Jaramillo, J. (1979) and Rausch, J. (1976).

³⁶ For a discussion of the figures, see Appendix 1.

³⁷ See Report of the Superintendent of Public Instruction of Santander, Daniel Rodríguez, to the 1874 Legislative Assembly.

³⁸ See the second and fourth annual report of the Secretary of Public Instruction of the sovereign State of Cundinamarca, Dámaso Zapata, 1872 and 1874.

³⁹ For a detailed analysis of the 1870 reform, see Jaramillo, J. (1979) and Rausch, J. (1976).

Liberals, which helped to weaken the reform even more.⁴⁰ Thus, the positive effects of the 1870 were only short-term. Unfortunately the war stopped the advance of education and its momentum was never recovered in the rest of the century.

Later on, with the 1886 Constitution and 1887 Concordat with the Vatican, the conflict between Church and State was overcome. The main educational reform of the Conservative government of Rafael Nunez was that primary education, while still free of charge, would no longer be compulsory and had to conform to the mandates of the Catholic Church, which would guide and supervise it.⁴¹ Thus, the 1892 General Law of Education (the Zerda Plan, named after the Minister of Public Instruction Liborio Zerda), ordered the central government to supervise and regulate education in the country, while the departments would manage and promote primary education and the municipalities would provide the properties, school materials and textbooks and build the schools. These principles established the foundations of the educational system that remained in force in Colombia during the following thirty years.⁴²

Whether education should be compulsory or not was one of the most hotly-debated issues during the 19th century. The arguments in favor of not making education compulsory were based on the injustice of fining parents who did not send their children to school and the possibility of abuses against them by the authorities. Economic reasons were also given, such as the fact that poor families believed that each of its children played a vital role in obtaining their daily subsistence. It is worth noting that in the short period when primary education was obligatory, the number of students enrolled in primary education increased in an important way.⁴³ From the end of the century until the mid-1930's, education was free but not compulsory.

⁴⁰ See Rausch, J. (1976).

⁴¹ The Concordat stipulated that education should be governed by the Catholic religion and granted the Church the power to inspect the academic curriculum, select textbooks, oversee teachers and fire those who did not comply with the established norms. For more details, see Rausch, J. (1976).

⁴² See Ramírez, M.T. and Téllez, J. (2007).

⁴³ Compulsory education was introduced in several parts of the world from the end of the 18th century onwards. For example, compulsory education was established in Prussia in 1763, more than a century before England (Long, J. 2006). As a consequence, according to Long (2006) by 1860 more than 97.5% of German children between the ages of 6 and 14 attended school, while only half of the children in that age group went to school in England in 1851.

Table 3
Students in Primary Education in Colombia
 (by gender)

year	Boys	Girls	Total Students	Girls / total students (%)	Boys / total students(%)
1834	18,095	2,258	20,353	11.09	88.91
1837	22,089	3,982	26,071	15.27	84.73
1838	23,582	4,776	28,358	16.84	83.16
1843	21,938	4,852	26,790	18.11	81.89
1844	22,202	4,922	27,124	18.15	81.85
1845	21,865	4,954	26,819	18.47	81.53
1848	24,251	4,891	29,142	16.78	83.22
1850	23,156	5,665	28,821	19.66	80.34
...					
1874	61,205	23,288	84,493	27.56	72.44
...					
1882	50,615	29,476	80,091	36.80	63.20
...					
1894	51,199	40,613	91,812	44.23	55.77
...					
1916	191,143	156,842	347,985	45.07	54.93

Source: Appendix 1

From the available statistics, we may conclude that the effects of this reform on primary education were not very significant. As is seen in Table 1, the ratio of primary school students to the population of Colombia rose from 2.15% in 1887 to only 2.26% in 1896. Between those two years the number of schools rose at an average annual rate of 1.0% and the number of students at a rate close to 2.0%, which was slightly higher than the growth of the population. As Ramírez and Téllez (2007) show, as the country continued to follow the legacy of the nineteenth century, there were no important advances or transformations in the educational field during the first half of the twentieth century.

2. The Quality of Education

During the nineteenth century the shortage of teachers in Colombia, as well as their poor qualifications and salaries, was one of the biggest obstacles to the development of the country's educational system. Despite different efforts to change this situation, such endeavors were mainly blocked by problems of financing and the constant ideological

conflicts which society confronted. One result was that on many occasions the States would close schools because of a lack of teachers.⁴⁴

The first attempt to obtain more and better teachers was made during the time of the Republic of Gran Colombia through law 16 of 1822, which ordered the foundation of teacher training schools⁴⁵ in Bogotá, Caracas and Quito. Later on, the government of Pedro Alcántara, through the law of June 26, 1842, ordered the creation of teacher training colleges in the capitals of the twenty provinces. However, the government did not provide resources to finance them, which meant that the establishment and success of those colleges depended, in the end, on the economic situation of each province and the subsidiary taxes paid by the inhabitants of the parishes. The instability of these resources was one of the reasons why the payment of teacher's salaries was hazardous. As Lino de Pombo, the Secretary of State, pointed out in 1839, teachers were paid poorly and rarely on time and they were forced to seek other jobs to survive. This situation was observed during the whole of the nineteenth century.

The most important initiative took place in 1870, during the government of President Eustorgio Salgar, with the Organic Decree of Public Instruction, which ordered the foundation of teacher training schools for men and women in the capitals of the States and in the capital of the Union. The job of founding and directing these schools was placed in the hands of nine German teachers who arrived in the country in 1872⁴⁶ and were given six years to carry out the task.⁴⁷

Helg (1984) attributes the German origin of this mission to the popularity of the pedagogical ideas of Pestalozzi, Fröbel and Herbart, as well as the growing commercial

⁴⁴ See Report of the Governor of Bogotá, Alfonso Acevedo, to the provincial chamber in its 1843 sessions.

⁴⁵ "Escuelas normales" (training schools) are institutions devoted to training primary school teachers.

⁴⁶ These were Alberto Blume for Cundinamarca, Gotthold Weiss for Antioquia, Augusto Pankou for Cauca, Carlos Meisel for Magdalena, Ernesto Hotschick for Boyacá, Julio Wallner for Bolívar, Gustavo Radlack for Tolima, Carlos Uttermann for Santander and Ofrald Wirsing for Panamá. These teachers were contracted by the Colombian Consul in Berlin. For more information about some of these pedagogues, see Díaz (2005). According to Díaz (2005), the mission sought to instill youngsters with sentiments of order and honor, love of education, patriotism, respect for the laws and authorities of the state and acceptance of the pedagogical mission. The aim was to form true school teachers and citizens capable of exercising their rights and intelligently following their callings

⁴⁷ In fact, when, after six years, the contract came to an end, most of the German teachers returned to their country, leaving the teacher training schools in the hands of less qualified teachers (See Loy, 1979).

relations between Colombia and Germany⁴⁸ and the relative importance which Germany attained in Europe by winning the 1870 Franco-Prussian war.⁴⁹

Loy (1979) maintains that the 1870 reform was an important event in the evolution of Colombian education, since it committed the government to provide education, adopted the Pestalozzi method – the first pedagogical innovation since the introduction of the Lancastrian one –, promoted the founding of teacher training schools and set out to give more prestige to the teaching profession. Nevertheless, as Jaramillo (1979) notes, the work of the German mission was not easy, since its members encountered a hostile reception in a number of States because they were Protestants, which, according to the opponents of the government, was an affront to the religious feelings of Colombian children. This aggravated the debate which had arisen since the introduction of secular teaching.

The scarce information that is available about teachers in the nineteenth century suggests that, despite the visionary and idealistic character of the 1870 reform, its strong initial impact was weakened with the course of time and it was not able to achieve its long-term objectives. As Table 4 shows, the total number of teacher trainees and colleges grew by around 5.5 % between 1874 and 1884, but the number of trainees fell in the following years and thus, by the time two decades had passed, the number of students at the teacher training schools grew by less than 1.5%.⁵⁰ What is interesting was the growing share of women students at the schools, which rose from 15% in 1874 to more than 50% in 1894.

With regard to the ratio of teachers to the population, it can be seen that, in comparison to 1870, the figures not only failed to improve but in some cases they got worse: Antioquia is the only case where an increase was seen.

Unfortunately, there is no way to established whether the qualifications of the teachers improved after the reform, due to the scarce information about the quality of their education. Nevertheless, a reading of the memoirs of the different secretaries of public

⁴⁸ Colombian tobacco, gold, coffee and quina bark were shipped to Germany through the port of Bremen (Helg A., 1984).

⁴⁹ As a result of the war, Prussia took over the coal-rich French provinces of Alsace and Lorraine. In 1866 Prussia had already defeated Austria in the Seven Weeks War and the two events consolidated the unification of Germany and later, the Triple Alliance. See *The Oxford Encyclopedia of Economic History*, 2003.

⁵⁰ A very similar performance may be seen in each of the States. See Appendices (tables of teacher training schools in the States).

instruction leads to the conclusion that the quality of the teachers continued to be very deficient⁵¹ at the end of the century.

Table 4
Total number of students and teacher training schools in Colombia

Year	Men		Women		Totals		% Women/ Students
	Schools	Students	Schools	Students	Schools	Students	
1874	9	311	2	51	11	362	14.09
1884	10	298	10	287	20	585	49.06
1888	8	165	8	193	16	358	53.91
1890	7	206	7	188	14	394	47.72
1892	7	284	7	303	14	587	51.62
1894	7	232	7	243	14	475	51.16

Source: See appendix 1 and estimates of authors.

Table 5
Teachers to population Ratio

State	Teachers per 1,000 population.1870	Teachers per 1,000 population.1894
Antioquia	0.7	1.2
Cundinamarca*	1.1	0.5
Bolivar*	0.3	0.3
Cauca*	0.6	0.4
Magdalena*	0.3	0.4
Santander*	0.3	0.4
Tunja*	0.3	0.3
Panamá	n.d.	0.3
Tolima	n.d.	0.4
Nation	0.6	0.5

Notes: (*): Only correspond to the capital of the state for 1870, so that the information may be overestimated.

n.d.= no data

Source: Safford, F. (1989) and for population, Melo, J.O. (1979).

Estimates of the authors based on official information.

3. Political factors: Internal conflicts

During the nineteenth century political conflicts and civil wars were frequent in Colombia, which had an important effect on the educational system of the epoch. It frequently happened that the country's educational system was modified after each war. Thus, for

⁵¹ For example, in his report to the 1894 Congress the Minister of Public Instruction, Liborio Zerda, mentions that the shortcomings of teachers discouraged children from attending schools.

example, the “war of the supremes” (1839-1841) not only led to a fall in the number of primary school students⁵² and destroyed schools⁵³ (Table 1), but it was also responsible for a radical modification of the educational system. Mariano Ospina Rodríguez, Minister of the Interior, carried out a substantial reform of the three levels of education. Specifically, he emphasized the intervention of the State in public and private education, promoted the teaching of “useful sciences” and encouraged moral training.⁵⁴

As we have mentioned, laical education was one of the main factors behind the 1876-1877 civil war. Because of the war the number of children attending primary school was considerably reduced and the financing provided by the Department of Public Instruction was suspended.⁵⁵ For example, because of the war,⁵⁶ the number of students fell by 4,500 in Cundinamarca and by nearly 2,000 in Santander.⁵⁷ In addition, due to the difficult fiscal situation of the country after the war, the funding of public education was reduced.⁵⁸

During the closing years of the nineteenth century Colombia suffered four civil wars (1876, 1885, 1895 and 1899), which had serious repercussions on the educational system, among them, the desertion of students and the closing of schools⁵⁹ as military aims absorbed more and more resources. For example, as Fresneda and Duarte (1982) during the war of 1895 have shown, the governor of the State of Cauca closed the primary schools, except those

As is seen in Table 1, according to the available figures, the indicator for students in primary schools per 1,000 inhabitants fell from 160 in 1838 to 132 in 1843.

⁵³ In his 1843 report to the provincial house the Governor of Chocó, José Vicente López, remarked that it had not been possible to reestablish the schools destroyed in the war of the supremes, mostly due to the shortage of funds and the scarcity of teachers.

⁵⁴ See Jaramillo, J. (1979)

⁵⁵ See Report of the Secretary of the Interior and Foreign Relations of the United States of Colombia, Carlos Nicolás Rodríguez, to the 1877 Congress. The different reports of the States’ superintendents of public instruction mentioned the harmful effects of the 1876 war on public instruction, and the manner in which they checked the advances which had begun to take place since 1870 as a result of the new legislation. See, for example, the report of the Superintendent of Public Instruction of the sovereign State of Santander, Rodrigo González to the 1879 sessions of the legislative assembly.

⁵⁶ See the seventh annual report of the Secretary of Public Instruction of the sovereign State of Cundinamarca, Dámaso Zapata, 1878.

⁵⁷ Like the statement by the Superintendent of Public Instruction of the State of Santander, Pedro Elías Otero, found in his 1878 report, that if it had not been for the war 18,000 students should have attended school in the State of Santander in 1878, instead of the 10,500 which the figures reported. In fact, more than 13,000 students attended primary schools in 1872.

⁵⁸ See the report of the Superintendent of Public Instruction of the State of Santander, Pedro Elías Otero, to the 1878 sessions of the legislative assembly.

⁵⁹ As the Governor of the state of Cundinamarca mentioned in 1888, as a result of the war almost of the public schools had been closed. In some cases the schools were turned into barracks. See the report which the Governor of the sovereign State of Antioquia presented to the 1867 legislature.

run by religious communities, teachers joined the armies and schools became barracks. It was not only in Colombia that such wars had a negative impact on education. As Rausch (1976) points out, frequent civil conflicts likewise prevented Mexico and Venezuela from achieving important advances in the field of education. By contrast, Argentina, which was relatively unaffected by such violence, showed major advances in public education.

4. Economic factors

During the 19th century, most of the population was concentrated in rural areas and mainly devoted to agricultural activities. According to the 1870 Census, 54% of the working population was employed in agriculture; cattle-raising and fishing, 23% were artisans, 14.7% servants, 2.7% merchants, 2.6% miners and 3.3% engaged in other activities.⁶⁰ In addition, as J.O. Melo (1979) notes, 70% of the men worked in extractive enterprises. As a result of this structure, which did not produce a high aggregate value, productivity was low and there was little demand for skilled labor. With the coffee boom at the end of the century, a class of independent peasant-farmers arose; however, their level of schooling was very low.

In terms of both the supply of and demand for educated persons, the economic structure of the nineteenth century did not provide the economic incentives that would have encouraged the working population to obtain a higher level of education. It was only in the mid-20th century that the economic structure of Colombia was transformed and the industrial, communications and services sectors began to displace that of agriculture.

As Galor, O. and Moav, O. (2006) indicate, in an international context, the complementary nature of physical and human capital only became apparent during the second stage of the industrial revolution, when the need for strengthening the latter arose. Thus, in the second stage, the demand for skills rose and literacy increased as a result, which was associated with the universal application of primary education and its strengthening of the productivity of work. By contrast, in the first stage of the industrial revolution, capital stocks rose without an increase in the supply of skilled labor.

⁶⁰ See Melo, J. O. (1979).

In addition, most parents lacked an incentive to send their children to school. The benefits that would be obtained from a better education were not tangible to them, while the economic costs of their abandoning work for study were apparent. In this way the price parents had to pay to send their children to school, namely, that they would stop working was considered to be too high. Due to the non-compulsory nature of education during most of the century, most parents preferred their children to work in the countryside, since such peasant children provided a free source of manpower which helped the families to support them.⁶¹ Parents did not consider that education of their children to be useful, since they did not see a relation between what they learned at school and what they did at work. Therefore they did not send their children to school or got them to leave it, preferring them to work.⁶² Thus, in the words of the Secretary of Public Instruction of the Cundinamarca state, the schools only attracted students from the social class that understood the need for education, rather than the great bulk of the population.⁶³

Furthermore, most schools were located in urban zones, which meant that many children did not have access to education. Also, due to the above-mentioned poor transport facilities, it was very difficult and expensive for a child to travel from the countryside to urban zones in order to study at school. This factor was so important that the 1842 law even included a provision that exempted families who lived at a distance of more than half a league from the nearest school from the obligation to send their children to such schools. The measure also applied to children who had to cross rivers or other geographical barriers that would have dangerous for them if they lay on their route to and from their homes and schools.⁶⁴ Unfortunately, no significant improvements to the country's transport infrastructure were made in the course of the nineteenth century.⁶⁵

On the other hand, throughout the nineteenth century, each change of the political regime, even of the government, implied a change in the way in which education was financed, which meant that sources of financing varied a great deal and were highly unstable, as well

⁶¹ In his message to the 1869 legislature about public instruction in the city of Popayán, Ramón Pérez, the President of the state of Cauca, remarks that one of the problems of education had to do with “the negligence of parents who do not want to do without the work of their children, preferring their ignorance to this insignificant sacrifice”.

⁶² See Rausch, J. (1976).

⁶³ See Second annual report of the Secretary of Public Instruction of the sovereign State of Cundinamarca, Dámaso Zapata, 1872.

⁶⁴ See the Law of 26 June 1842.

⁶⁵ See Pachón, A. and Ramírez, M.T. (2006).

as insufficient. In the end, these factors became one of the main causes of the slow progress of education in Colombia.⁶⁶

According to the Secretary of State in 1836, Lino de Pombo, the main sources of revenue for primary schools in the 1830's were the executive branch of the government, the patriotism of citizens, popular corporations and the subsidiary taxes paid by the inhabitants of the parishes. This is an indicator of the great instability which the resources available to education suffered from in the country. In fact, in 1838 De Pombo remarked that the initiatives to expand the education of the masses had been checked by a lack or reduction of resources, which led to frequent crises in which the possibility of providing more support to the education of the poor came into conflict with the government's wish to channel revenues intended for education into ends which it considered to be more urgent.

One of the most unstable sources of financing was the subsidiary tax which the inhabitants of the parishes of each province had to pay, which were mainly destined for the salaries of the teachers. In the official reports of the governors in 1843, most complained about the ineffectiveness and instability of such taxes and the difficulty of collecting them.⁶⁷ For example, the Governor of Neiva called the tax an odious, precarious and unreliable one and criticized the dependence of education on it.⁶⁸

One of the main problems of this subsidiary tax, besides the lack of resources, was the lack of incentives to pay it, considering, as has been mentioned, that most of the population thought that education was useless.

Furthermore, as well as causing fiscal crises, the frequent civil wars that occurred during the nineteenth century led a good part of the central government's budget to be spent on the military sector, to the detriment of others, like education. As is shown in Table 6, between 1832 and 1850, more than 50% of the budget went to the army and navy, and less than 1% to education. In a similar way, at the end of century the expenditure on the army and navy was considerably higher than that on education (Table 7). For example, as the Minister of

⁶⁶ In contrast with Colombia, the United States, from its beginnings, established a highly decentralized educational system, based on school districts, which still persists. For more details on the financing and organizing of the educational system of the United States, see Goldin (1999).

⁶⁷ See the report of the Governors of Antioquia, Buenaventura and Neiva to the 1843 sessions of the Provincial House.

⁶⁸ See the Report of the Governor of Neiva, Miguel Ortiz, to the 1843 sessions of the Provincial House.

Public Instruction noted in 1896, many of the resources that were supposed to be allocated for the promotion of education wound up being spent on the prosecution of the civil war.⁶⁹

Table 6
Total budget, budget for army and navy, and education, 1832-1850

Year	Budget			Share of total budget	
	National Total \$	Army and Navy \$	Education \$	Army (%)	Education (%)
1832	2,327,310	1,304,362		56.05	
1833	2,448,733	1,225,288	21,703	50.04	0.89
1834	2,337,171	1,243,054	16,808	53.19	0.72
1835	2,844,287	1,315,325	17,552	46.24	0.62
1836	2,337,836	1,399,603	16,798	59.87	0.72
1837	2,517,044	1,447,886	16,712	57.52	0.66
1838	2,559,284	1,469,826	16,712	57.43	0.65
1839	2,366,347	1,061,868	16,169	44.87	0.68
1840	2,221,243	1,228,588	16,169	55.31	0.73
1841	3,742,100	1,185,146	16,169	31.67	0.43
1842	2,972,549	1,502,854	15,919	50.56	0.54
1843	3,195,700	1,506,679	11,141	47.15	0.35
1844	2,908,205	1,279,808	15,619	44.01	0.54
1845	3,057,437		26,255		0.86
1846*	54290967*				
1847	28,218,920				
1848	26,020,612		373,514		1.44
1849	34,385,697				
1850	21,894,000		327,370		1.50

Source: Data taken from tables 5 and 6 of Montenegro, Arrieta, A. (1984). Note: * From 1846 onwards the pesos are real

Substantial resources⁷⁰ were needed to carry out the different educational reforms that were contemplated during the century. For example, the resources for the realization of the reforms in the second half of the century were meager. Fiscal revenues mostly depended on the cycle of foreign trade, which meant that the country's revenues were very unstable. As can be seen in Table 7, spending on education, as a proportion of total government expenditure, remained low and relatively stable during the period between 1870 and 1900. By contrast, military spending increased and reached nearly 30% of total expenditure at the beginning of the *War of a Thousand Days*.

⁶⁹ See the Report which the Minister of Public Instruction, Rafael Carrasquilla, presents to the 1896 ordinary sessions of the Congress of Colombia.

⁷⁰ According to Loy (1879), President Salgar (1870-1872) allocated nearly \$200,000 for education, equivalent to 4% of the 1871-72's budget.

Table 7
National expenditures in Colombia, 1869 - 1900 (\$)

	1869-1870	1875-1876	1876-1877	1883-1884	1899-1900
Interior Political Department	186,719	240,195	279,804	317,753	1,898,758
Justice Department	25,060	28,632	27,832	42,254	4,853,392
Social Welfare Department	74,000	231,500	184,270	109,840	588,860
Mail and Telegraph Department	104,710	399,926	450,681	566,276	3,120,000
Foreing Relations Department	36,354	73,512	158,918	214,366	858,080
Army and Navy Department	356,374	782,245	864,352	1,332,336	9,700,848
Public Instruction Department	200,108	319,032	320,952	450,330	2,024,434
in primary education		200,000	226,580	166,061	674,720
Treasury Department	142,480	72,324	79,518	154,242	1,902,180
National Debt Department	1,646,817	1,345,177	1,375,514	1,898,598	3,773,514
Department of Deamortized Properties	27,700	10,300	7,181	20,216	746,380
Finance Department	500,756	914,441	1,189,435	1,084,147	3,300,642
Development Department	124,700	1,934,219	2,599,400	769,571	3,755,285
Public Work Department	44,000	96,000	109,500	88,000	485,000
National Territories Department				22,038	
National Agriculture Department				47,600	500
Prisons Department					
Total Expenditure	3,469,778	6,447,503	7,647,357	7,117,567	37,007,873
Expenditure on education/Total Expenditure (%)	5.8	4.9	4.2	6.3	5.5
Expenditure on primary education/Expenditure on public instruction		62.7	70.6	36.9	33.3
Expenditure on army and navy/Total Expenditure (%)	10.3	12.1	11.3	18.7	26.2

Source: Settlement of accounts for revenue and expenditure for the fiscal periods (1869-1870) (1875-1876) (1876-1877) (1883-1884) (1889-1900)

In order to obtain an idea of the dimension of educational expenditure in Colombia within an international context, it would be interesting to undertake a comparative study involving other countries, but the lack of information is an impediment to this task. Nevertheless, to give one example, in 1871 the Secretary of the State of Cundinamarca suggested a possible order of magnitude when he cited the following per capita spending (reckoned in thousands of inhabitants): \$3 for the United States, \$0.57 for Buenos Aires and \$0.063 for Cundinamarca, which would indicate that Colombia was considerably behind other countries of the Americas in educational spending.⁷¹

5. Demographic factors

During the nineteenth century, Colombian education showed a high degree of gender discrimination (Graph 5).⁷² In fact, in the years following Independence less than 15% of students enrolled in primary education were girls. This was due, in part, to the fact that education for girls was not

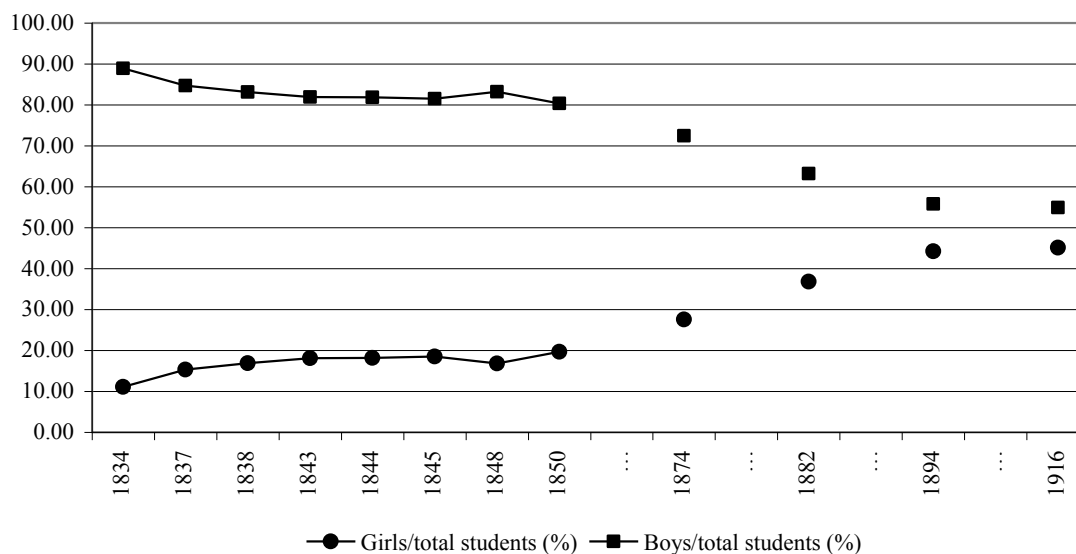
⁷¹ See Report of the Secretary General of the State, Narciso González, to the Governor of Cundinamarca, 1871-1872.

⁷² As Zuluaga, O. et. al (2004) states, “female education during the 19th century was always in an inferior condition to that of males, both in terms of quality and quantity, and women never had access to higher education”, p. 227.

mandatory (Table 3).⁷³ In general, girls had few educational opportunities, even those of the upper classes. Most of them attended private all-girls schools, generally of a religious character (Tables 8 and 8b), whose academic curriculum was different to that of the boys' schools. For example, apart from teaching them to read and write, the curriculum was devoted to religious education, sewing and well manners.⁷⁴ In 1836 Lino de Pombo wrote that "there are many private schools, especially for girls, due to the aversion to sending them to public schools."⁷⁵

The Secretary of Government of the State of Cauca further noted, in 1869, that of the 272 educational establishments in that State only 90 were girl's schools and only 23 of them were financed by public funds. As Table 9 shows, during the nineteenth century the number of girls who attended primary school never surpassed 1% of the total population. If we take into account the part of the population of school age, in 1850 the percentage of children in primary schools was only 0.5% of the total number of small children and youngsters (Table 9b).⁷⁶

Graph 5
Gap between boys and girls in primary education



Source: Table 2

⁷³ For example, the Decree of March 18, 1826 established that a primary school for boys should be created in every parish and one for girls in those where there were sufficient resources and it would be possible.

⁷⁴ See Ahern, E. (1991)

⁷⁵ By Lino de Pombo (1836) "Report of the Secretary of State of the office of the interior and foreign relations of the government of Nueva Granada to the 1836 Constitutional Congress".

⁷⁶ The group of youngsters and small children is taken as a proxy of the school age population, since the censuses of the mid-19th century do not break down the population into clearer age groups.

Table 8
Primary Education in Colombia
(public and private)

	Public Schools						Private Schools						TOTALS					
	Of boys		Of girls		Totals		Of boys		Of girls		Totals		Of boys		Of girls		Totals	
	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students
1837	534	19,991	44	1,177	578	21,168	193	2,098	279	2,805	472	4,903	727	22,089	323	3,982	1,050	26,071
1838	532	20,685	45	1,658	577	22,343	229	2,897	243	3,118	472	6,015	761	23,582	288	4,776	1,049	28,358
1843	428	16,914	27	1,445	455	18,359	378	4,526	364	3,407	742	7,933	806	21,440	391	4,852	1,197	26,292
1844	465	17,964	26	1,397	491	19,361	348	4,238	364	3,525	712	7,763	813	22,202	390	4,922	1,203	27,124
1845	434	17,936	24	1,482	458	19,418	307	3,929	331	3,472	638	7,401	741	21,865	355	4,954	1,096	26,819
1848	452	20,352	22	1,159	474	21,511	294	3,899	365	3,732	659	7,631	746	24,251	387	4,891	1,133	29,142
1850	476	20,049	25	1,629	501	21,678	247	3,107	371	4,036	618	7,143	723	23,156	396	5,665	1,119	28,821
...																		
1916		180,382		149,191		329,573		10,761		7,651		18,412		191,143		156,842		347,985

Source: Appendix 1

Table 8b
Girls enrolled in primary education
(By type of institution)

year	Total	% in Public	% in Private
1837	3,982	29.56	70.44
1843	4,852	29.78	70.22
1844	4,922	28.38	71.62
1845	4,954	29.92	70.08
1848	4,891	23.70	76.30
1850	5,665	28.76	71.24
...			
1916	156,842	95.12	4.88

Source: Table 7 and Ramirez and Téllez (2007)

Table 9
Students in Primary Education in Colombia (approximation)
(By gender and population)

year	Students		Population			Boy students / Men (%)	Girl students/ Women (%)	Boy students / Total pop. (%)	Girl students/ Total pop. (%)
	Boys	Girls	Men	Women	Total				
1834	18,095	2,258	809,808	875,670	1,685,478	2,23	0,26	1,07	0,13
1843	21,938	4,852	924,531	1,007,153	1,931,684	2,37	0,48	1,14	0,25
1850	23,156	5,665	1,088,628	1,155,102	2,243,730	2,13	0,49	1,03	0,25
1874	61,205	23,288	1,408,552	1,482,085	2,890,637	4,35	1,57	2,12	0,81

Source: See appendix 1

For 1834, the information on the 1835 population is used; for 1851 that of 1850; and for 1874 the information from 1870.

Table 9 b
Students in Primary Education in Colombia (approximation)
(By gender and population of small children and youngsters)

year	Students		Population of youngsters and small children			Boy Students/Popula tion of youngsters and small children men (%)	Girl Students/Populatio n of youngsters and small children women (%)	Boy Students/Total population of youngsters and small children (%)	Girl Students/ Total population of youngsters and small children (%)
	Boys	Girls	Men	Women	Total				
1834	18,095	2,258	363,982	359,239	723,221	4,97	0,63	2,50	0,31
1843	21,938	4,852	452,183	431,712	883,895	4,85	1,12	2,48	0,55
1850	23,156	5,665	525,492	497,309	1,022,801	4,41	1,14	2,26	0,55

Source: See appendix 1

For 1834 the information on the 1835 population is used; for 1851 that of 1850. The population of youngsters and small children correspond to those under the age of 16.

It was only in the 1870's and 1880's that the percentage of girls attending primary schools began to increase, which may have been partly due to the 1870 reform which made education compulsory. And it was only towards the end of the century that the gender gap began to close: by 1894 45% of primary school students were girls. However, it is important to remember that although the number of girl students rose, that of the boys fell, perhaps as a consequence of the civil wars at the end of the century, and this was responsible for the increased percentage of girls. The Colombian experience contrasted with that of the United States, where gender neutrality was, as has been mentioned, one of the great virtues of the American educational system during the nineteenth century. According to Goldin, C. and Katz, L. (2003), by around 1850, American boys and girls under the age of 15 were being educated in a similar way, in terms of years of education and attendance rates. In addition, the figures for 1880 show that gender neutrality in the United States continued into secondary education. According to the authors, it was only at the age of 15 or 16 that boys accounted for a higher percentage of the school population than girls, but the difference was not substantial.

In the context of Latin America, in the middle of the nineteenth century the gender gap in education in Colombia was similar to but a little higher than that of Chile (Table 10). However, the gap began to close earlier in Chile and by 1890 48% of the students enrolled in primary education were girls. The gender difference in Colombia was similar to that of Ecuador and Guatemala, for example, where the percentage of girls attending primary school was less than 40% of the total number of enrolled students in 1890.⁷⁷

In addition, the social gap was another characteristic which marked education in Colombia. The social structure established in colonial times, which in a certain manner was maintained after Independence, also influenced the nature of the country's educational system. Kalmanovitz, S. (2003) gives a detailed description of the social organization of the 19th century, which may be summarized as a relation of servitude between peasants and landlords. What is more, as Safford, F. (1989) indicates, the hierarchical structure of society meant that a large part of the population did not consider education to be a tool for social

⁷⁷ For Ecuador, see the Report of the Minister of Ecclesiastical Affairs, Public Instruction, Social Welfare and Charity, and Statistics to the 1890 Constitutional Congress. For Guatemala see the Report which the Secretary of State of the Office of Public Instruction presents to the 1890 Legislative Assembly of the Republic of Guatemala.

ascent. This social structure benefited an elite minority, which was able to gain access to a higher level of education.

Table 10
Students in Primary Education in the Republic of Chile
(attendance by gender)

year	Boys	Girls	Total students	Girls/ total students (%)	Boys / total students (%)
1852	17,553	5,603	23,156	24.20	75.80
1855	21,586	7,236	28,822	25.11	74.89
1856	22,667	7,896	30,563	25.84	74.16
1859	27,288	12,369	39,657	31.19	68.81
...
1864	26,450	16,198	42,648	37.98	62.02
1865	32,445	18,362	50,807	36.14	63.86
...
1885	41,414	35,326	76,740	46.03	53.97
1886	45,054	36,913	81,967	45.03	54.97
1887	45,289	37,436	82,725	45.25	54.75
1888	45,319	38,284	83,603	45.79	54.21
1889	50,036	44,267	94,303	46.94	53.06
1890	49,783	45,039	94,822	47.50	52.50
1891	45,586	43,495	89,081	48.83	51.17
1892	51,423	48,643	100,066	48.61	51.39
1893	53,591	49,120	102,711	47.82	52.18

Source: Report which the Minister of State of the Department of Justice, Religion and Public Instruction presented to the National Congress of Chile, 1863-66, 1880-82, and 1894.

Finally, given the experience of other nations, another factor that might have been responsible for the poor development of education in Colombia was the modest number of foreigners who immigrated to the country. As mentioned above, Argentina achieved one the greatest advances in the field of education in comparison with other Latin American countries. Some authors, like S. Engerman, *et al.* (2002), attribute this fact to the relative homogeneity of its population and the higher level of European immigrants who reached the country, many of whom not only had a higher educational level than native Argentines,⁷⁸ but also demanded a higher level of education, which acted as an incentive for the State to provide a better public education.⁷⁹ It is not surprising that the European migration to Latin America should have been mainly directed to Argentina. According to

⁷⁸ According to Newland, C. (1991), literacy rates were 13% for the whole of the population and 46% for foreigners in Chile in 1854, while in Argentina in 1895 the literacy rate (only reading and estimated for the population older than the age of eleven) were 47% for the native born and 65% for foreigners.

⁷⁹ See Rausch, J. (1976)

William, J. (1999) in 1873-82 the salaries of unskilled workers in Argentina were 74.2% of those in Great Britain, while they were only 17.3% in Colombia.

Other countries which received a large number of immigrants, especially from Europe, were Chile and Uruguay; countries also achieved a greater progress in education than Colombia (Graph 2). In addition, the higher number of foreigners in those countries helped to establish a relatively neutral position on religion in schools.⁸⁰

By contrast, very few foreigners reached Colombia. As Stafford, F. (1989) remarks, the immigrants from developed countries were few during the 19th century. Despite efforts to attract foreigners by offering them fast nationalization, land grants and tax exemptions, foreigners did not arrive in the country, due, among other reasons, to Colombia's political instability, meager resources, narrowness of markets and economic limitations, all of which failed to provide a sufficient incentive to invest or work in the country.⁸¹ In 1851, the Europeans and Americans living in Colombia barely reached 0.02% of the total population.

In short, the Colombian educational system was characterized by its discriminatory, elitist and exclusive nature, which was very different to that implemented in the United States in the nineteenth century, which, according to Goldin, C. (1999) was generally permissive in allowing children and youngsters to enter each level of education independently of their age, social status and gender. That is, it was an egalitarian system.

IV. THE EDUCATION ON A REGIONAL LEVEL

1. The evolution of regional education

The regional differences in primary education were not considerable in Colombia at the beginning of the century. In all of the country's States the percentage of the respective State's total population made up of primary school students was very low, less than 2.0% in all cases. However, major regional differences began to be seen in the middle of the century and they were maintained until the mid 1880's. For example, while the percentage of the overall population made up of primary school students was 5% in Antioquia in 1874, it did

⁸⁰ See Ossenbach, G. (2004)

⁸¹ For more details, see Safford, F. (1989). At the end of the 1860's, the president of Santander promoted the immigration of foreigners to his territory, but the enterprise had little success.

not reach 0.5% in Panamá (Graph 6). Antioquia and Cundinamarca managed to place themselves considerably above the national average, whereas Panamá, Boyacá and Santander showed the lowest ratio of primary school students to population throughout the century.

In general, with the exception of Antioquia, which achieved a level of school attendance considerably higher than the average for the regions, the other states did not show importance advances during that century, although the regional differences narrowed with the passage of time. In Antioquia the student/total population ratio was nearly double that of the national average and the gap between that region and the one with the second highest indicator, Cundinamarca, was nearly two percentage points (Table 11). The reports of the presidents and secretaries of government and public instruction of the State of Antioquia in the second half of the century clearly show that the leaders of Antioquia were concerned about the expansion of education in their territory. They identify education as a factor which would allow the State to make its products more competitive and encourage industry, by, for example, making a better use of technology and machinery. For this reason, investment in education was higher than in other regions.⁸² It is important to note that during the second half of the century, Antioquia showed the smallest gender gap and the highest indicators for girls attending primary schools as a percentage of the total population (Table 12).⁸³

Significant regional differences are also to be seen in the figures for expenditures on education in the course of the century, which relates, in the end, to the educational performance of each region. In 1834, the money spent on public education as a percentage of the total spending of the provincial treasuries was highest in Cundinamarca and Antioquia, States which devoted more resources to education (Graph 7). In a similar way, in 1891, towards the end of the century, Antioquia continued to be one of the States that devoted the most resources to education.⁸⁴ By contrast, Boyacá suffered from an

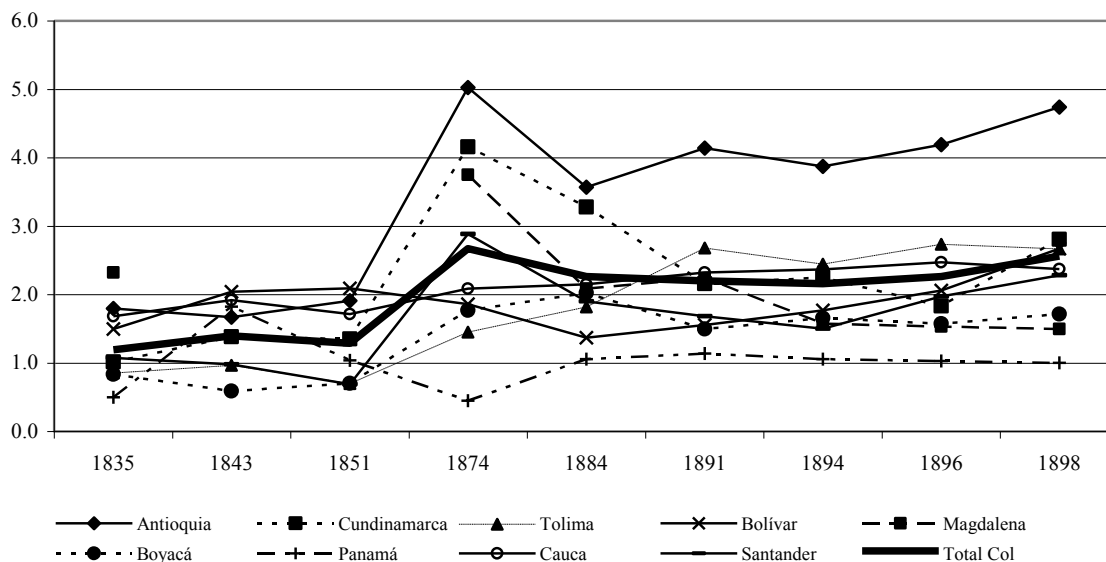
⁸² See, for example, the Message of the Citizen President of the sovereign State of Antioquia, Pedro Berrío, to the 1869 and 1873 legislature, and the Message of the President of the sovereign State of Antioquia, Recaredo de Villa, to the 1875 legislature.

⁸³ The President of the State of Antioquia mentioned in 1875 that it was indispensable to take great care with the education and instruction of women, through all the means within the reach of the Government, with the aim of providing women with useful and well-paid occupations and professions.

⁸⁴ Unfortunately for 1891, Cundinamarca does not report information on spending and the data for Santander seem to be unreliable since the information is pretty incomplete.

unfortunate fiscal situation, which was reflected on the low levels of school attendance among its population.

Graph 6
Students in primary education by State
(% of the population of the respective State)



Source: The data on students is taken from Appendix 1. Those on population from J.O. Melo (1979) for the years 1835,1843,1851,1870,1883,1887 and 1898. For the years in which figures are not available an intercensal growth was estimated.

Table 11
Students in primary education compared to the total population of the respective State (%)

Years	Antioquia	Cundinamarca	Tolima	Bolívar	Magdalena	Boyacá	Panamá	Cauca	Santander	Total for Colombia
1835	1.79	1.01	0.85	1.50	2.32	0.84	0.50	1.68	1.07	1.19
1843	1.67	1.38	0.97	2.04	3.57	0.59	1.82	1.92	0.98	1.40
1851	1.91	1.35	0.70	2.09	3.69	0.70	1.04	1.71	0.69	1.29
1874	5.03	4.16	1.45	1.86	3.75	1.77	0.45	2.09	2.88	2.67
1884	3.57	3.28	1.82	1.37	2.09	2.02	1.05	2.15	1.90	2.26
1891	4.14	2.16	2.68	1.56	2.24	1.50	1.14	2.32	1.68	2.20
1894	3.87	2.25	2.45	1.77	1.57	1.66	1.06	2.37	1.50	2.16
1896	4.19	1.83	2.73	2.06	1.53	1.57	1.03	2.47	1.97	2.26
1898	4.74	2.81	2.67	2.67	1.49	1.72	1.00	2.37	2.28	2.56
1905	6.67	4.40	3.34			2.34				4.80
1912	8.68	4.50	3.30	2.98	3.20	3.05		4.57	3.7	5.2
1918	10.5	5.00	4.70	3.37	3.40	4.84		5.97	4.5	5.8

Source: Graph 4 for the 19th century data, and Ramírez and Téllez (2007) for the data for 1905, 1912 and 1918.

Table 12
Primary education by State and girls students by population

Year	Antioquia				Cundinamarca				Tolima			
	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)
1835	2,564	272	158,017	0.17	2,361	233	255,569	0.09	1,318	22	157,173	0.01
1843	2,687	478	189,534	0.25	3,066	797	279,032	0.29	1,631	137	183,148	0.07
1848	3,383	714	243,888	0.29	3,578	730	319,000	0.23	1,710	250	208,108	0.12
1874	12,105	7,686	365,974	2.10	13,801	4,945	413,658	1.20	3,115	525	230,891	0.23
1894	9,393	10,834	620,000	1.75	8,319	5,174	630,000	0.82	4,617	4,214	380,000	1.11

Year	Bolívar				Magdalena				Boyacá			
	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)
1835	1,927	469	160,000	0.29	1,213	214	61,388	0.35	2,335	80	288,872	0.03
1843	2,548	966	172,000	0.56	1,408	819	62,411	1.31	1,800	161	332,000	0.05
1848	3,029	779	182,000	0.43	1,957	544	67,764	0.80	2,478	222	381,000	0.06
1874	3,384	1,548	246,000	0.63	2,968	867	88,928	0.97	7,352	1,912	498,541	0.38
1894	3,605	2,775	375,000	0.74	960	1,013	132,000	0.77	6,941	3,965	685,000	0.58

Year	Panamá				Cauca				Santander			
	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)	Boys	Girls	Population	Girls / Population (%)
1835	573	0	115,179	0.00	3,362	175	210,359	0.08	2,645	360	280,000	0.13
1843	1,765	211	119,102	0.18	4,386	763	268,607	0.28	2,647	520	324,000	0.16
1848	1,084	349	138,108	0.25	4,215	904	312,000	0.29	2,817	399	382,000	0.10
1874	865	200	221,000	0.09	7,708	2,217	435,078	0.51	9,907	3,388	433,178	0.78
1894	1,927	1,480	340,000	0.44	10,934	6,482	800,000	0.81	4,503	4,676	640,000	0.73

Note: For the year 1848 the population from the 1851 census was used; for 1874 that of the 1870 one; and for that of 1894 that of 1898, which means that the ratio of girl students to population may be a subestimate.
Source: See appendix 1.

Table 12b
Primary education by State and Girl students by population of youngsters and small children (Y and SC)

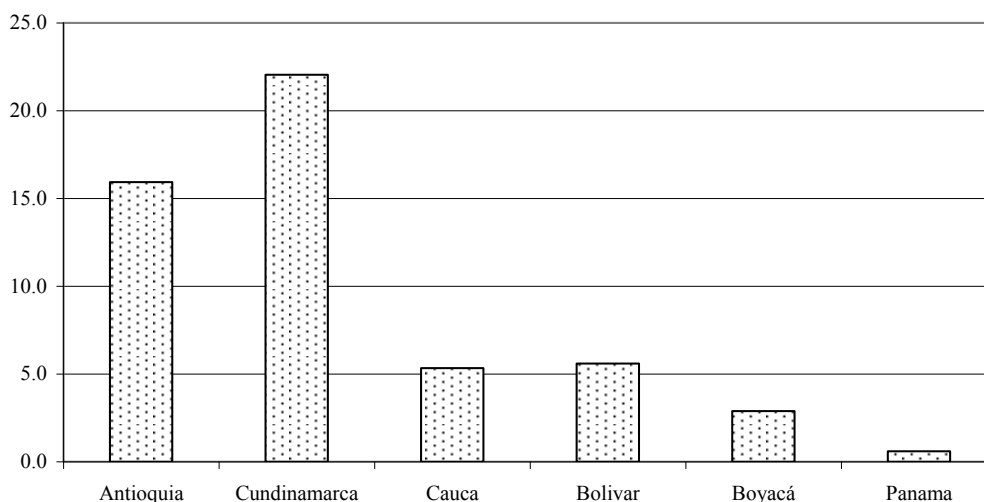
Year	Antioquia				Cundinamarca				Tolima			
	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ op. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)
1835	2,564	272	40,505	0.67	2,361	233	54,025	0.43	1,318	22	36,789	0.06
1843	2,687	478	48,546	0.98	3,066	797	64,073	1.24	1,631	137	45,376	0.30
1848	3,383	714	62,579	1.14	3,578	730	73,741	0.99	1,710	250	51,590	0.48
1874					13,801	4,945	125,177	3.95				

Year	Bolívar				Magdalena				Boyaca			
	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ op. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)
1835	1,927	469	36,520	1.28	1,213	214	13,400	1.60	2,335	80	58,761	0.14
1843	2,548	966	42,251	2.29	1,408	819	14,035	5.84	1,800	161	75,417	0.21
1848	3,029	779	46,043	1.69	1,957	544	14,758	3.69	2,478	222	87,364	0.25
1874									7,352	1,912	121,943	1.57

Year	Panama				Cauca				Santander			
	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ op. Y and SC (%)	Boys	Girls	Population Y and SC	Girls/ Pop. Y and SC (%)
1835	573	0	25,999	0.00	3,362	175	40,934	0.43	2,645	360	57,049	0.63
1843	1,765	211	28,824	0.73	4,386	763	64,181	1.19	2,647	520	69,480	0.75
1848	1,084	349	31,265	1.12	4,215	904	77,483	1.17	2,817	399	80,669	0.49

Note: For the year 1848 the population from the 1851 Census was used. Pop. Y and SC is the population under the age of 16.
Source: Censuses and 1874 report of the general director of public instruction.

Graph 7
 Spending on public instruction/total spending of the provincial treasuries
 in 1834 (%)



Source: 1834 Report of Francisco Soto, secretary of State in the office of Finance, to the constitutional congress of la Nueva Granada

As is seen in Table 13, Boyacá had the lowest share of the total revenues of the nation; by contrast, Antioquia's share of the total revenues was the highest. According to Table 14, educational expenditure as a percentage of total expenditure showed a marked increase in Antioquia in the second half of the nineteenth century, rising from 1.5% in 1865 to nearly 12% in 1891. The Table also highlights the large expenditure on war.

Table 13
 Share of each State in total revenue (%)

State	1848	1873/74	1882
Antioquia	25.11	18.87	21.15
Bolivar	15.58	9.60	8.09
Boyacá	4.76	5.80	4.41
Cauca	13.42	7.51	18.54
Cundinamarca		20.96	19.82
Magdalena	11.26	3.75	5.67
Panama	4.33	15.11	6.39
Santander	16.88	11.22	11.29
Tolima	5.19	7.18	4.64

Source: Estimates based on Table 4.10 (Regional Revenues) of J.O Melo (1994), pag. 152

Table 14
Expenditures in Antioquia (\$)

	1864-1865	1866-1867	1870-1871	1872-1873	1891
Governments and interior	70,266	1,117,247	140,013	132,121	182,432
Justice	40,665	62,948	72,612	86,503	183,600
Public works	35,374	82,859	237,938	639,763	262,840
Public instruction	6,484	14,776	60,741	70,512	189,082
Social welfare	59,485	50,446	27,629	25,931	46,600
Finance	44,298	65,201	93,118	132,050	150,548
War	167,904	0	10,688	67,706	221,260
Others					363,270
Totals	424,476	393,477	642,739	1,154,586	1,599,632
Expenditure on education/ Total expenditures (%)	1.5	3.8	9.5	6.1	11.8
Expenditure on war/ Total expenditures	39.6	0.0	1.7	5.9	13.8

Source: Report of the secretary of finance and development in 1879 and 1881 and Report of the administrator of finance (1892)

The high rate and growth of expenditure on education in Antioquia may have been another reason why this State showed the highest educational level. Furthermore, from the time the State was founded it displayed a strong entrepreneurial spirit and devotion to commercial activities. As President Mariano Ospina remarked 1860, from the time of its foundation Antioquia placed an emphasis on establishing institutions, including educational ones, which would give security to its inhabitants and their property.⁸⁵ According to Tables 15 and 15b spending on students generally registered a marked increase between 1875 and 1888. It rose, on average, from \$7.4 per student in 1875 to \$14 in 1888.

In addition, during the 19th century, farmers who owned their properties had more incentives to educate their families due to the need to administer their lands and farms. Given its economic structure, the proportion of landowners in the total population was higher in Antioquia than in the rest of the country, which possibly meant that there was a stronger demand for education in that State.

⁸⁵ In addition, as Urrutia (1979) states, the region of Antioquia became the center of coffee-growing at the end of the 19th century and the foreign earnings deriving from those resources gave its inhabitants the opportunity to participate in export and import activities, while the emergence of the textile industry turned Antioquia into one of the most prosperous regions.

Table 15
Expenditures per student in 1875

State	Expenditures (\$)	Students	Expenditures per student
Antioquia	166,030	20,557	8.1
Bolívar	20,000	4,932	4.1
Boyaca	40,536	9,264	4.4
Cauca	49,192	10,109	4.9
Cundinamarca	153,322	16,926	9.1
Magdalena	13,496	2,968	4.5
Panamá	13,258	1,065	12.4
Santander	123,987	13,295	9.3
Tolima	28,958	2,822	10.3

Source: Report of the general director of primary instruction of the Union in 1876

Table 15b
Expenditures per student in 1888

State	Expenditures (\$)	Students	Expenditures per students
Antioquia	182,529	16,485	11.1
Bolívar	50,930	1,860	27.4
Boyaca	120,182	8,901	13.5
Cauca	76,488	nd	nd
Cundinamarca	100,983	14,188	7.1
Magdalena	59,848	nd	nd
Panamá	49,400	2,727	18.1
Santander	113,946	9,749	11.7
Tolima	61,899	4,959	12.5

Source: Report of the director general of primary instruction in 1890

Finally, from the information for the State of Cundinamarca in 1874, it may be inferred that the rate of school enrollment at the end of the 19th century was very low.⁸⁶ Only 30% of the boys of school age attended primary school (Table 16). The situation of the girls was even worse, since only 18% of girls between the ages of 7 and 13 went to school. However, these data overestimate the situation of primary education in the country, since Cundinamarca was one of the States which showed the highest educational indicators during the nineteenth century. In Santander, for example, only a sixth of the children of school age, of both sexes (estimates based on the population between the ages of 7 and 15)

⁸⁶ It is very difficult to calculate the rate of school attendance in the nineteenth century because of the lack of information about the composition of the population in terms of age.

attended school in 1874,⁸⁷ and in el Cauca, a little less than 10% of youngsters received primary education in 1869.⁸⁸

When comparing education in the regions at the end of the century, in 1892 the Minister of Public Instruction highlighted the fact that Antioquia, more than any other State, knew how to extend education to all of its inhabitants by establishing schools in every municipality. However, he noted that because of the poverty which prevented some families from sending their children to school, not all of the State's children knew how to read and write.⁸⁹

Table 16
Students in the State of Cundinamarca in 1874

Year	Students		Population between 7 and 15 years old		% of students between 7 and 15 years old		Total students	Total population between 7 and 15 years old	Total students / population between 7 and 15 years old (%)
	Boys	Girls	Boys	Girls	Boys	Girls			
1874	13,801	4,945	33,951	27,410	40.65	18.04	18,746	61,361	30.55

Source: Report of the director of Public Instruction to the sovereign State of Cundinamarca in 1881.

Note: The population corresponds to the census realized by the State of Cundinamarca in 1873.

In international terms, by the end of the century the percentage of the total population made up of school students in Antioquia was similar to that of the Latin American average, but substantially lower than that of Europe or the United States and less than that of Argentina, Uruguay and Costa Rica. In the other States the percentage was comparable to that of countries like Bolivia, Brazil and Peru (Graph 2).

2. *An analysis of regional convergence*

As we have mentioned, the regional educational indicators seem to converge at the end of the century.⁹⁰ To analyze the convergence among the States with regard to the ratio

⁸⁷ See the report of the Superintendent of Public Instruction of the State of Santander, Pedro Elías Otero, to the 1878 sessions of the legislative assembly.

⁸⁸ See the report of the President of the State of el Cauca, Ramón Pérez, to the Legislative Assembly.

⁸⁹ See the Report which the Minister of Public Instruction, José Trujillo, presents to the 1892 ordinary sessions of the Congress of Colombia.

⁹⁰ The lack of figures on income during the nineteenth century prevents us from carrying out an empirical analysis of the effect of education on the economic growth of the country or the opposite relationship. For an analysis of the role of education in Colombian economic development, especially in industrialization, at the beginning of the twentieth century, see Urrutia (1979), who studies the regional differences in the educational field and compares them with regional differences in terms of industrialization.

between primary school students and total population two of the most common definitions found in economic studies were employed: σ convergence and β convergence.⁹¹

If the regional differences of the indicator for the students/total population tend to narrow over time, then we would say that there would be a σ convergence. In this article we use, as a measurement of difference, the standard deviation from the logarithm of that indicator and the coefficient of variation⁹² for the nine years for which we have information about the nine States.⁹³

As Graph 8 shows, the difference between States rose considerably until 1874, but then it then significantly fell, which suggests that the school students/total population indicator converged in the σ sense, particularly from the 1880's onwards. In a similar way, the coefficient of variation rose between 1851 and 1874, but considerably fell from the 1880s onwards.

Additionally, to determine if there was a convergence of the percentage of girls on a regional level, Graph 9 presents the standard deviation and coefficient of variation of the ratio between girls in primary education and the overall population. It is seen that regional differences narrow in the course of the century if the coefficient of variation is taken into account. However, this trend is not so clear if the standard deviation is used. According to the latter, differences considerably increase between 1835 and 1843, fall in 1848, increase in 1874 and fall at the end of the century.

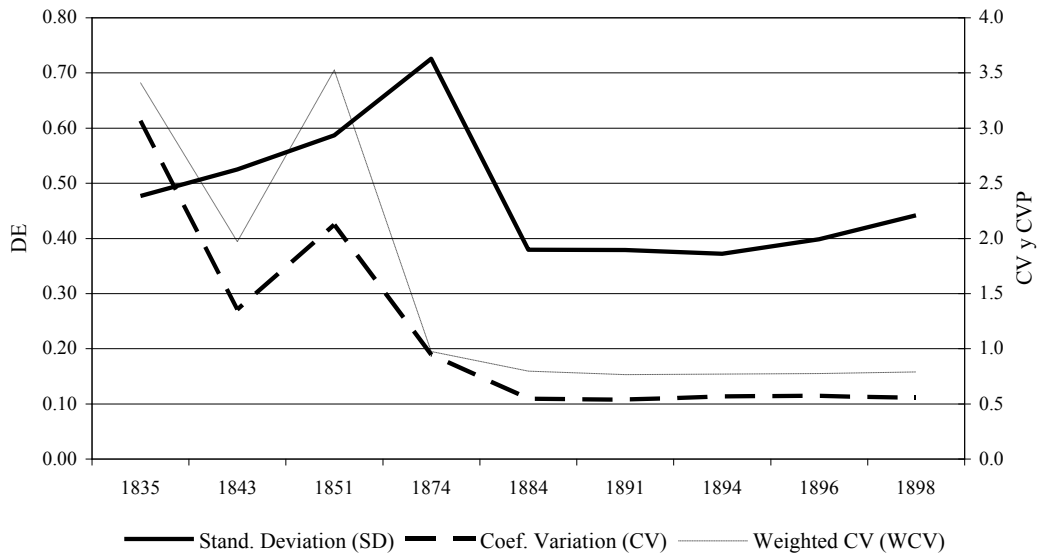
For its part, if the ratio between students and total population grows more in the regions which began with a lower indicator there would be a β -type convergence. That is, there is a β convergence among regions if an inverse relation between the growth rate of the students-population ratio and the initial level of that indicator is shown.

⁹¹ Terminology used in Barro y Sala i Martin, X. (1995) to study the convergence of per capita income among nations or regions. Here we employ this methodology to analyze the convergence of educational indicators.

⁹² The coefficient of variation is the standard deviation divided by the mean of the educational indicator

⁹³ We were able to compile information by State for the years 1835, 1843, 1851, 1874, 1884, 1891, 1894, 1896 and 1898.

Graph 8
 Convergence of the indicator of the ratio between primary school students
 per State and total population of each State



Source: Authors' estimates

Table 17 shows the results of the regression between the annual growth rate in the number of primary school students in relation to the population and the logarithm of the initial level of that indicator. A panel-type estimate was made, which included information from the 9 regions and 8 years for which there is information about the period between 1835 and 1898. The β coefficient resulting from the regression is negative and significant, which suggests the existence of a β -type convergence.⁹⁴ In addition, the regression between the annual growth of the number of girls in primary education in relation to the population and the logarithm of the initial value of this indicator yields a significant and negative β coefficient, which suggests that the number of girls in primary education as a percentage of the population converged among regions in the nineteenth century.⁹⁵

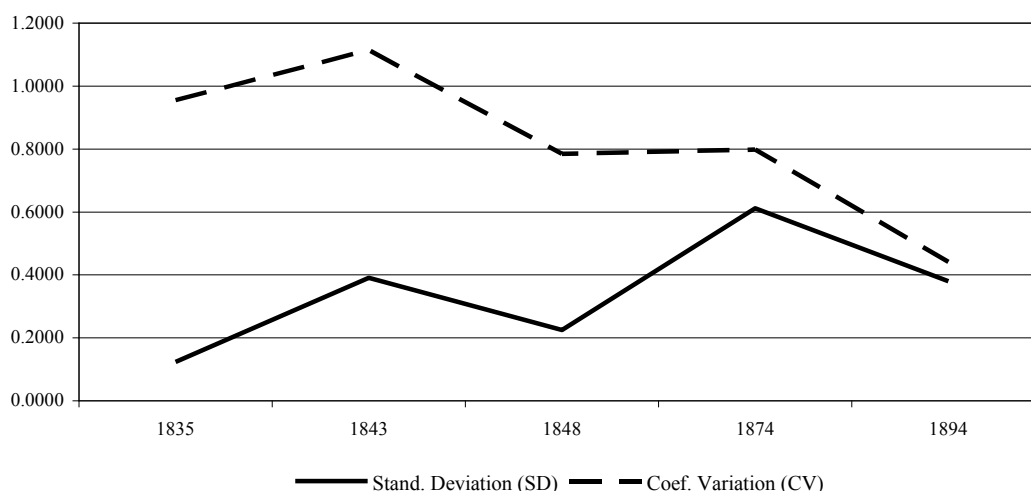
As may be seen in Table 18, the percentage of girls in the total number of students was, in most cases, less than 10% in the 1830's. What are surprising in this period are the large

⁹⁴ The 2.6% annual convergence rate obtained is similar to the rate of convergence for per capita income among regions found in the literature (see Sala I Martin, X., 1994). In addition, regressions were carried out for sub-periods, which show that the greatest convergence appeared in the 1874-1899 period.

⁹⁵ The panel estimate in this case includes information about the 9 States for the years 1835, 1843, 1848 and 1894.

percentage of girls in Bolivar and Magdalena in comparison with the other States, and the very low percentage of girls in Boyacá and Tolima.⁹⁶ At the end of the century, the percentages tend to converge, although Boyacá continues to have the lowest share.

Graph 9
Convergence of the indicator of the ratio between girls in primary education per State and total population of each State



Source: Authors' estimates

Table 17
 β convergence of regional education: panel estimate

Dependent variable: Annual growth of the number of boy students in primary education by State in relation to the population: 1835-1898

Independent Variable:	β	Standard Error	Statistical T	Probability	R ²
Log (number of students/population at beginning of each period)	-0.0266	0.0127	-2.1029	0.0391	0.159
Number of Observations: 72 # of Years: 8 # of States: 9					

Source: Authors' estimates

Dependent variable: annual growth of the number of girls in primary education by State in relation to the population: 1835-1894

Independent Variable:	β	Standard Error	Statistical T	Probability	R ²
Log (number of girls students/population at beginning of each period)	-0.0799	0.0245	-3.2586	0.0026	0.2434
Number of Observations: 36 # of Years: 4 # of States: 9					

Source: Authors' estimates

⁹⁶ We have not found reasons to explain this performance either in the literature or the primary sources.

Table 18
Students in primary education by State and gender

Year	Antioquia				Cundinamarca				Tolima			
	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)
1834	3,076	332	3,408	9.74	3,253	333	3,586	9.29	1,096	22	1,118	1.97
1835	2,564	272	2,836	9.59	2,361	233	2,594	8.98	1,318	22	1,340	1.64
1836	2,574	386	2,960	13.04	2,703	422	3,125	13.50	1,651	63	1,714	3.68
1837	3,343	409	3,752	10.90	2,649	527	3,176	16.59	2,084	82	2,166	3.79
1838	3,068	593	3,661	16.20	2,351	591	2,942	20.09	2,922	285	3,207	8.89
1843	2,687	478	3,165	15.10	3,066	797	3,863	20.63	1,631	137	1,768	7.75
1844	2,363	581	2,944	19.74	2,905	678	3,583	18.92	1,459	151	1,610	9.38
1845	2,909	593	3,502	16.93	3,066	915	3,981	22.98	1,158	186	1,344	13.84
1848	3,383	714	4,097	17.43	3,578	730	4,308	16.95	1,710	250	1,960	12.76
1874	12,105	7,686	19,791	38.84	13,801	4,945	18,746	26.38	3,115	525	3,640	14.42
1894	9,393	10,834	20,227	53.56	8,319	5,174	13,493	38.35	4,617	4,214	8,831	47.72

Year	Bolívar				Magdalena				Boyacá			
	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)
1834	1,366	606	1,972	30.73	1,111	214	1,325	16.15	1,905	41	1,946	2.11
1835	1,927	469	2,396	19.57	1,213	214	1,427	15.00	2,335	80	2,415	3.31
1836	3,095	1,161	4,256	27.28	1,452	458	1,910	23.98	2,479	122	2,601	4.69
1837	2,088	945	3,033	31.16	1,016	489	1,505	32.49	2,235	331	2,566	12.90
1838	2,422	1,257	3,679	34.17	1,064	591	1,655	35.71	2,756	231	2,987	7.73
1843	2,548	966	3,514	27.49	1,408	819	2,227	36.78	1,800	161	1,961	8.21
1844	2,343	799	3,142	25.43	1,590	489	2,079	23.52	2,018	253	2,271	11.14
1845	1,987	724	2,711	26.71	1,982	577	2,559	22.55	2,418	222	2,640	8.41
1848	3,029	779	3,808	20.46	1,957	544	2,501	21.75	2,478	222	2,700	8.22
1874	3,384	1,548	4,932	31.39	2,968	867	3,835	22.61	7,352	1,912	9,264	20.64
1894	3,605	2,775	6,380	43.50	960	1,013	1,973	51.34	6,941	3,965	10,906	36.36

Year	Panamá				Cauca				Santander			
	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)	Boys	Girls	Total Students	Girls/total (%)
1834	617	0	617	0.00	2,851	359	3,210	11.18	2,820	351	3,171	11.07
1835	573	0	573	0.00	3,362	175	3,537	4.95	2,645	360	3,005	11.98
1836	1,018	283	1,301	21.75	3,918	608	4,526	13.43	3,199	479	3,678	13.02
1837	983	267	1,250	21.36	4,380	580	4,960	11.69	2,814	355	3,169	11.20
1838	983	267	1,250	21.36	4,661	606	5,267	11.51	3,355	355	3,710	9.57
1843	1,765	211	1,976	10.68	4,386	763	5,149	14.82	2,647	520	3,167	16.42
1844	1,765	405	2,170	18.66	5,090	954	6,044	15.78	2,669	612	3,281	18.65
1845	1,056	325	1,381	23.53	4,398	848	5,246	16.16	2,891	564	3,455	16.32
1848	1,084	349	1,433	24.35	4,215	904	5,119	17.66	2,817	399	3,216	12.41
1874	865	200	1,065	18.78	7,708	2,217	9,925	22.34	9,907	3,388	13,295	25.48
1894	1,927	1,480	3,407	43.44	10,934	6,482	17,416	37.22	4,503	4,676	9,179	50.94

Source: Appendix 1

V. CONCLUSIONS

The slow educational progress that Colombia experienced during the nineteenth century prevented the massification of primary education. In fact, at the end of the century less than 30% of children of school age attended primary schools, which thus meant that Colombia belonged to the group of countries with the lowest educational level in the world. Different factors were responsible for this performance, some of which had to do with the fact that, given its prevailing economic, political and social organization, Colombia did not show a suitable structure of incentives for the expansion of education in the country. Even worse, in the course of the century there were no changes in this structure of incentives.

The economic structure of the nineteenth century, rural and agrarian, was especially unable to offer the economic incentives that might have enabled the population to obtain a higher level of education, since those kinds of activities did not require skilled manpower. The price families had to pay for the opportunity to send their children to school was likewise high, since these children were source of cheap or unpaid labor and families could not afford to let them leave their work. The social structure benefited an elite minority, which did have access to a higher level of education. However, for the majority of the population, education was not considered to offer a possibility of scale socially, which meant that there were few incentives to pursue it. It was just the opposite: parents did not see the usefulness of it, since they found that what was taught at school had no relation to work in the countryside. Thus, for many parents, teaching children to do rural jobs was more important. The same applied to the teachers: few people found incentives to educate themselves so that they could be teachers, since teachers were poorly paid and rarely on time and in many cases society did not regard the profession to be a prestigious one. This was responsible for the lack of qualified teachers, which led, in turn, to the poor quality of education.

The political situation also played a part. Its fragmentation, along with the several civil wars and conflicts between Church and State, were impediments to a rational organization and regulation of the country's educational system during the century. When the government changed or a civil war ended the educational system in force was modified, which also implied a change in the way in which education was financed, leading, in turn, to a high degree of variability and instability in the sources of financing. These conflicts checked investment in education and resources intended for education were channeled into the wars. On a regional level, with the exception of Antioquia, which achieved a level of school attendance considerably higher than the average for the regions, the other States did not show important advances, although regional differences did narrow through time.

Finally, the country's lack of resources, complex geography and precarious transport infrastructure, among other factors, also played a part in Colombia's failure to advance to mass primary education during the nineteenth century.

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APPENDIX 1

Compilation of the Data Base

The compilation of educational statistics for 19th century Colombia was a complex process, mainly because of the country's political instability in that epoch and its consequences in terms of its administrative divisions. The great majority of the information we have used comes from primary sources and in general these were limited to the official reports and memorandums which public officials presented to the Congress. These documents were consulted in the Luis Ángel Arango Library, the National Library and the General Archive of the Nation. All of the available documents of the period were examined, but it is possible that others, which exist in other municipal libraries or private archives, did not come to our notice. Please consult references, in the section on primary sources.

In 1819, following the military defeat of the Spanish, the República de la Gran Colombia (Republic of Great Colombia) was founded, a confederation which tried to unite the present territories of Venezuela, Colombia, Panama and Ecuador into a single nation and was divided into the Departments of Cundinamarca, Quito and Venezuela. Before this date, it is not possible to speak of a national State, much less one that compiled educational statistics. If there exists information for the 1820's, its meagerness and dispersion give it little utility, since it would be impossible to break down the figures. Gran Colombia began to break up in 1830, giving way in 1832 to the República de la Nueva Granada, made up of the territory that would successively be known as the "Confederación Granadina" (Grenadine Confederation, 1858), the "Estados Unidos de Colombia" (United States of Colombia, 1863) and the "República de Colombia" (1886). In the course of the century, the country was divided into territories, cantons, parish districts, provinces, federal States, sovereign States and departments, each of which compiled its own statistics, hence the difficulty in obtaining an overall view of the information.

In order to be able to carry out the regional analysis and facilitate comparisons over time we decided to choose the nine departments into which the country was divided at the end of the 19th century and regroup the information in such a way that all of data would be consolidated into only nine territorial entities, as is shown in Table A1. It is important to point out that some of these areas belonged first to one State and then to another (as in the case of Mompo) and that in some cases the new political division divided an area and placed one part of it under the jurisdiction of one State and another part under the jurisdiction of another State. However, due to the complexity of the subject and above all, to the impossibility of breaking down the information

with the required precision, it was necessary to choose a method that would allow us to analyze an administrative division that would be homogeneous over time. Partly due to this kind of instability the politico-administrative division of the country, few studies of Colombian economic history have managed to present a disaggregated statistical analysis, which is why an important contribution of this article is to incorporate regional differences into an analysis of the history of education in 19th century Colombia.

In the same manner, the structure of the Colombian educational system changed significantly in the course of the century, which meant that the information was published in a discontinuous and irregular manner. Prior to 1880 educational matters were the responsibility of the Office of the Interior and Foreign Relations and were initially in charge of the Secretary of State and then, beginning in 1846, the Secretary of Government of each province and, in turn, of each canton. In 1870 the Dirección Nacional de Instrucción Pública (National Directorate of Public Instruction) was established, under the Ministry of Interior. Law 10 of 1880 created the Secretary of Public Instruction and later on law 7 of August 25, 1886, created the Ministry of Public Instruction. However, the creation of agencies exclusively devoted to the field of education did not necessarily mean that the information became more detailed or that statistics were published with more regularity.

Table A.1.1

Politico-administrative Division of Colombia in the 19th century

1836-1845	1847	1851	1852	1853	1858-1861	1861-1886	1886-1900
Antioquia	Antioquia	Antioquia	Antioquia Medellín Córdoba	Antioquia Medellín Córdoba	Antioquia	Antioquia	Antioquia
Bogotá	Bogotá	Bogotá	Bogotá Zipaquirá Cundinamarca Tequendama	Bogotá Zipaquirá Cundinamarca Tequendama	Cundinamarca	Cundinamarca	Cundinamarca
Mariquita Neiva	Mariquita Neiva	Mariquita Neiva	Mariquita Neiva	Mariquita Neiva		Tolima	Tolima
Cartagena Mompox	Cartagena Mompox	Cartagena Mompox	Cartagena Sabanilla Mompox	Cartagena Sabanilla Mompox	Bolívar	Bolívar	Bolívar
Santa Marta Riohacha	Santa Marta Riohacha	Santa Marta Riohacha Valle Dupar	Santa Marta Riohacha Valle Dupar	Santa Marta Riohacha Valle Dupar	Magdalena	Magdalena	Magdalena
Tunja Casanare	Tunja Casanare	Tunja Casanare Tundama	Tunja Casanare Tundama	Tunja Casanare Tundama	Boyacá	Boyacá	Boyacá
Veraguas Panamá	Veraguas Panamá	Veraguas Panamá (Fábrega)	Veraguas Panamá Azüero Chiriquí	Veraguas Panamá Azüero Chiriquí	Panamá	Panamá	Panamá
Cauca Chocó Pasto Buenaventura Popayán	Cauca Chocó Pasto Buenaventura Popayán Túquerres Barbacoas	Cauca Chocó Pasto Buenaventura Popayán Túquerres Barbacoas Santander	Cauca Chocó Pasto Buenaventura Popayán Túquerres Barbacoas Santander	Cauca Chocó Pasto Buenaventura Popayán Túquerres Barbacoas Santander	Cauca	Cauca	Cauca
Pamplona Socorro Vélez	Pamplona Socorro Vélez	Pamplona Socorro Vélez Ocaña Soto	Pamplona Socorro Vélez Ocaña Soto	Pamplona Socorro Vélez Ocaña Soto García Rovira	Santander	Santander	Santander

Source: Report of Secretaries of State and secretaries of the Interior year, for several years

The absence of an integrated educational system also meant that on some occasions the data were not homogeneous and therefore the information might have been imprecise. One example of this is the fact that in some cases the number of enrolled students was reported and in others the number of those who attended school and in only a few cases was there information about both figures. This work took into account the information about attendance when it was possible to

differentiate it. When this was not possible, the published data were used, which might lead to overestimates.¹

Similarly, the information may become distorted, depending on the date on which the data was compiled. The school year usually began in January, February or even March, but reports might have been made at any time of the year and in some cases they reported the most recent data and in others, the data at the beginning of the school year, which was larger. It was also common for officials to complete the Tables with the latest reported data when there was a lack of information and they did not always make a note of it, even though the same number may be found for several consecutive years. It is important to emphasize that official information was not always that precise.

Another problem in grouping the data had to do with the information provided by private educational institutions, since they were not obliged to report on their situation and therefore did not necessarily form part of the official reports. In general, the statistics on private education were underestimated, given that only data that were sufficiently complete to be representative of a given locality were taken into account, while isolated information was ignored. This problem becomes more serious towards the end of the century, when the information was reported in a more centralized by the Ministry of Public Instruction and only global figures were given.

It is important to point out that the best information was found for the period of 1834-1850. In that period the information is much more complete and disaggregated. The different reports give the number of students and schools by gender, as well as the private or public status of schools and the number of students who attended each one. This information is presented both on a national and regional level. Unfortunately, the information about the educational sector in the second half of the nineteenth century is pretty incomplete and specification by gender and type of institution is scarce.

The most critical problem is the lack of data for the period between 1852 and 1874. It must be mentioned that it was impossible to fill the informational void found in the data base for this period. Not only are official reports on this period scarce, but they say little about the situation of schools and include almost no statistics. One explanation for it may be the great political turmoil of the period, which was marked by the promulgation of several constitutions, civil wars, a war with

¹ It is not possible to estimate its magnitude because the ratio of attendance to enrollment may vary a great deal, depending on whether the school was rural or female, or was in a specific region, and it generally tended to increase in the course of the century.

Ecuador and changes in the political system. Although that situation wasn't that exceptional in 19th century Colombia, it may have been responsible for the difficulty of obtaining more information.

Perhaps the only secondary source that exists is the work realized by F.J. Vergara y Velasco, head of the Nacional Library, who was responsible for compiling information about Public Instruction in the 19th century and used as his source different official reports from that century. This work forms part of the book "Estadística general de la República de Colombia" (General statistics of the Republic of Colombia), by Henrique Arboleda, published in 1905. As may be seen in Table A2 of the book, there is a similar lack of information for the same period, which may indicated that the information was not compiled by any official agency.

Table A. 1. 2
Chart of persons educated in the 19th century and of the revenues invested in this enterprise

Year	Public School	Boys	Girls	Private Schools (male and female students)	Secondary Instruction	Higher public and private instruction	Total number of students	total expenditures	Notes
1833	530	15169	1841				17010		Incomplete, data on people lacking
1834	615	18095	2236				10331		Incomplete
1835	690	18298	1825			2307	22420		Incomplete
1836	578	19990	1177	4903		2889	28939		Incomplete
1837	592	18890	1439	5248		3102	28679		Incomplete
1838	1060	19899	1602	5607		3043	30151	12536	Incomplete
1839	512	19477	1705	5399		3161	29742	9831	Incomplete
1842	427	13038	896	4214		1883	19031		Incomplete
1843	462	16683	1434	7027		1355	26499		Incomplete
1844	491	17936	1397	7763		1002	28098		Incomplete
1845	458	17964	1482	7401		1420	28267	18211	Incomplete
1846	371	15620	1349	6953		1794	25720	166330	Incomplete
1847	475	20352	1155	7611		1351	31769	183944	Incomplete
1848	468	17785	1046	5587		2718	27136	195110	Incomplete
1849	397	15835	1108	3994			20937		Incomplete
1850	371	13834	1268	4525		2085	21712	102167	Incomplete
1852	461	15553	2668	3716		1526	23463	68822	Incomplete
1869	151	5098	1347	1417		1181	9043	52445	Information only for Cauca
1872							20064		Information only for Antioquia
1873		17828	5590	3192		566	27176		Information only for Cauca and Santander
1874						524	71047	373891	Incomplete
1881		38723	32347			1262	72332	315898	Incomplete
1882	1470	44349	30395			344	75088		Incomplete
1884							68380	447791	Incomplete
1889		29384	23538				70394		Incomplete
1890	1666	57870	41345				99215		Incomplete
1891	1822	57330	47110			1469	106209	1420000	Incomplete
1893	1917	51199	40163	7556	5085	460	104463	1414268	Incomplete
1895	1612	50116	45382	3682	4549	420	104149	1334000	Incomplete
1897	2262	71452	58230	7800	6000	585	144067	1972612	Incomplete

Source: F.J. Vergara and Velasco (head of National Library), in *Estadística General de la República de Colombia*. Enrique Arboleda.

Although the work of Vergara y Velasco is a very good reference, we believe that the information found in it is complete and shows inconsistencies, since the author only utilized reports on a national level, without taking advantage of the valuable information found in local reports. Therefore, in our work, we decided to assemble the data base on education, when it was possible,

by adding the specific information of each region to thus obtain the national total. This method also allowed us to present the departmental totals which we mentioned above.

Finally, for international comparisons, we also made use of primary sources published in official reports of other Latin American countries which were donated by their governments or exchanged with those of our country. Although it was not possible to obtain reports for many years, we did encounter information that valuable and useful for comparing the internal situation of our country with that of our neighbors at given points of time.²

In shorth, the main problem that we faced when we came to construct the data base for this paper was the discontinuity of the information and the difficulty that arose when we set out to organize it, for which reason we were forced, on many occasions, to leave out very valuable information about a certain region and/or year.

² See references in the section of *primary sources*

APPENDIX 2

Table A.2.1

Students in primary education in Latin America per 10,000 inhabitants, for selected countries

Year	Argentina			Mexico			Bolivia			Guatemala			Ecuador			Uruguay			
	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	
1840							2,130						4,874						
...																			
1852																			
1853																			
1854																			
1855																			
1856																			
1857																			
1858																			
1859																			
1860																			
1861																			
1862																			
1863																			
1864																			
1865																			
...																			
1870	45,242	180	252	300,000	922	325	150			108			101					34	
...																			
1876					991														41
1877					1,003														42
1878					1,015														44
1879					1,027														45
1880					1,040														46
1881					1,052														48
1882			511	486,796	1,065	457													50
...																			
1885					1,104														56
1886					1,118														59
1887	227,450	350	650	531,711	1,131	470	50		45,085	122	370								61
1888					1,145								53,000						64
1889					1,159				52,708										66
1890	254,608	359	709	571,202	1,173	487							56,126						69
1891					1,190														71
1892					1,208														73
1893	276,983	409	678	573,908	1,226	468	27,764	119	233	57,380	145	395	58,308	127	458	66,869	75	922	894
...																			
1900	379,194	469	808	740,221	1,361	544		170		130				140					92

Sources:

Argentina: Report of the Minister of Justice, Religion and Public Instruction for 1870. The information for 1882, 1900 was taken from Richard Easterlin (1981)

Mexico Report which the Secretary of State and of the Office of Justice and Public Instruction presents to the Congress of the union in 1869, José M. Iglesias. The information for 1882, 1900 was taken from Richard Easterlin (1981)

Bolivia Report presented to the Constitucional Chambers in 1840 by the Highest Official of Foreign Relations as the responsible official for the Ministry of Public Instruction.

Guatemala Report which the Secretary of State in the office of Public Instruction presents to the Legislative Assembly of the Republic of Guatemala.

Ecuador Report to the Constitutional Congress of 1890 by the Minister for Ecclesiastical Affairs, Public Instruction, Justice, Social Welfare and Charity, and Statistics.

Chile Report of the Minister of Justice and Public Instruction of the Republic of Chile to the Congress. 1894. The information for 1876, 1877, 1878 and 1879 is taken from the Report presented to the National Congress in 1880 by the Minister for Justice, Religion and Public Instruction. J. Gandarillas, 1881. M. Garcia de la Huerta, 1882. J. Eugeni.

Report presented to the Congress of 1863 by the Minister of State in the department of Justice, Religion and Public Instruction. Chile

Brazil Richard A. Easterlin (1981), pp. 1-19. Appendix, Table 1.

Venezuela The information for 1888 is from the Statistical Yearbook of the United States of Venezuela for 1889; the data on population are from the Statistical Yearbook of the United States of Venezuela for 1889, and from 1891 onwards are from Maddison. The data for 1887 and 1893 were taken from: Report of the Commissioner of Education, published in Washington in 1891, 1894.

In general, the data on population for all the countries were taken from: Angus, Maddison, Historical Statistics for the World Economy: 1-2003 AD, <http://www.ggcd.net/maddison/>, taken from internet, March 2007

Appendix 2 –Table A.2-1 - Continuation
Students in primary education in Latin America per 10,000 inhabitants, for selected countries

Year	Chile			Brazil			Costa Rica			Paraguay			Venezuela			Peru		
	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants	Students	Population	Students /10,000 inhabitants
1840			118															
...																		
1852	23,156	146	159															
1853			148															
1854			151															
1855	28,822	153	188										156					
1856	30,563	156	196															
1857			158															
1858			161															
1859	39,657	163	243															
1860			166															
1861	35,975	169	213															
1862			171															
1863	47,717	174	274															
1864	42,648	177	241															
1865	50,807	180	283															
...																		
1870			194			119												
...																		
1876	66,174	213	310															
1877	63,815	216	295															
1878	61,373	220	279															
1879	49,279	223	221															
1880	49,195	226	217															
1881			230															
1882			233			207												
1885	76,740	243	315															
1886	81,967	247	332															
1887	82,725	250	330		1,343		790			560		99,358	221	450				210
1888	83,603	254	329									100,026	224	447				
1889	94,303	257	367															
1890	94,822	261	364			218												
1891	89,081	264	337															
1892	100,066	268	374															
1893	102,711	271	379	305,193	1,400	218	17,500	24	733	25,594	48	533	104840	231	453	71,435	270	264
...																		
1900			296			258												

Sources:

Argentina: Report of the Minister of Justice, Religion and Public Instruction for 1870. The information for 1882, 1900 was taken from Richard Easterlin (1981)

Mexico Report which the Secretary of State and of the Office of Justice and Public Instruction presents to the Congress of the union in 1869, José M. Iglesias. The information for 1882, 1900 was taken from Richard Easterlin (1981)

Bolivia Report presented to the Constitucional Chambers in 1840 by the Highest Official of Foreign Relations as the responsible official for the Ministry of Public Instruction.

Guatemala Report which the Secretary of State in the office of Public Instruction presents to the Legislative Assembly of the Republic of Guatemala.

Ecuador Report to the Constitutional Congress of 1890 by the Minister for Ecclesiastical Affairs, Public Instruction, Justice, Social Welfare and Charity, and Statistics.

Chile Report of the Minister of Justice and Public Instruction of the Republic of Chile to the Congress. 1894. The information for 1876,1877,1878 and 1879 is taken from the Report presented to the National Congress in 1880 by the Minister for Justice, Religion and Public Instruction. J. Gandarillas, 1881. M. Garcia de la Huerta, 1882. J. Eugeni.
 Report presented to the Congress of 1863 by the Minister of State in the department of Justice, Religion and Public Instruction. Chile

Brazil Richard A. Easterlin (1981), pp. 1-19. Appendix, Table 1.

Venezuela The information for 1888 is from the Statistical Yearbook of the United States of Venezuela for 1889; the data on population are from the Statistical Yearbook of the United States of Venezuela for 1889, and from 1891 onwards are from Maddison
 The data for 1887 and 1893 were taken from: Report of the Commissioner of Education, published in Washington in 1891,1894.

In general, the data on population for all the countries were taken from: Angus, Maddison, Historical Statistics for the World Economy: 1-2003 AD, <http://www.ggcd.net/maddison/>, taken from internet, March 2007

Table A. 2.2
Students in primary education in Europe, 10,000 inhabitants, selected countries

Year	France			Germany			Italy			Holland		
	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants
1830	2,331,000	3,330	700		2,805		645,390	2,151	300		263	
...												
1837	2,690,035	3,436	783		3,001			2,250			279	
...												
1840		3,490	846		3,113			2,294			289	
...												
1843	3,164,297	3,538	894		3,209			2,339			298	
...												
1846		3,583			3,306			2,384			307	
...												
1850	3,322,423	3,635	914		3,375			2,446		369,118	310	1,191
...												
1860		3,730	930		3,605			2,608		410,359	332	1,237
...												
1861		3,739		2,826,550	3,644	776	1,109,224	2,625	423		334	
...												
1862		3,752			3,679			2,642			337	
...												
1863	4,336,368	3,771	1,150		3,718			2,661			340	
...												
1864		3,786			3,760			2,681			343	
...												
1865		3,802			3,796			2,702		437,259	346	1,264
...												
1866	4,515,967	3,808	1,186		3,819		1,409,607	2,726	517		348	
...												
1870		3,844			3,923		1,604,978	2,789	576	474,448	361	1,314
...												
1871		3,773			3,946			2,806			364	
...												
1872	4,722,754	3,768	1,253		3,969			2,823			366	
...												
1875		3,822			4,090		1,931,617	2,863	675	509,690	379	1,346
...												
1876	4,716,935	3,840	1,228		4,149			2,884			383	
...												
1877		3,858			4,203			2,907			388	
...												
1879		3,891			4,305			2,943			399	
...												
1880		3,905			4,350			2,953		540,995	404	1,338
...												
1881	5,341,211	3,919	1,363		4,383		1,976,135	2,967	666		408	
...												
1882		3,934			4,411			2,990			413	
...												
1883		3,947			4,440			3,011			418	
...												
1884		3,963			4,478			3,037			423	
...												
1885		3,973			4,508		2,175,681	3,064	710	593,656	428	1,388
...												
1886	5,526,365	3,986	1,387	4,847,010	4,551	1,065		3,086			433	
...												
1887		3,989			4,600			3,105			438	
...												
1888		3,992			4,654			3,124			443	
...												
1889		4,000			4,708		2,241,220	3,147	712		449	
...												
1890		4,001			4,761		2,333,795	3,170	736	642,978	454	1,418
...												
1891	5,556,470	3,998	1,390	4,938,154	4,813	1,026		3,189			459	
...												
1895		4,010			5,036		2,585,245	3,269	791	690,566	480	1,438
...												
1896	5,531,418	4,019	1,376	5,254,702	5,111	1,028		3,286			487	
...												
1900		4,060			5,439			3,367		739,810	514	1,439
...												
1901	5,550,284	4,064	1,366	8,966,107	5,521	1,624	2,655,036	3,388	784		522	

Sources: Students of Flora P. et al. (1983): "State, Economy and Society in Western Europe 1815-1875". Vol 1 and Population in A. Maddison, 1-2003 AD, <http://www.ggdc.net/maddison/>, taken from internet, March 2007

The information on Spain and the United Kingdom on total primary education, as well as that corresponding to 1830, 1840 and 1850 of the other countries. Are taken from Richard Easterlin (1981).

The data on students in Spain in 1846 and 1885 come from E. Levasseur (1893) "Comparative statistics of primary education", American Statistical Society.

Table A. 2.2 (continuation)
Students in primary education in Europe, 10,000 inhabitants, selected countries

Year	Norway			Sweden			Spain			England and Wales		
	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants	Students	Population (thousands)	Students /10,000 inhabitants
1830		112			289		521,640	1,304	400	2,172,600	2,414	900
...												
1837		121			308			1,366			2,597	
...												
1840		124			314			1,394			2,675	
...												
1843		129			324			1,422			2,751	
...												
1846		134			334		663,611	1,450	458		2,827	
...												
1850		139			348		799,808	1,489	537	2,840,415	2,718	1,045
...												
1860		160			386		1,037,065	1,564	663		2,889	
...												
1861		161			392			1,570			2,913	
1862		163			397			1,575			2,940	
1863		165			402			1,581			2,963	
1864		167			407			1,586			2,984	
1865		169			411			1,592			3,009	
1866		171			416			1,598			3,032	
...												
1870	236,759	174	1,365		417		1,378,705	1,620	851		3,140	
1871		175		555,595	419	1,327		1,626			3,169	
1872		176			423			1,632			3,187	
...												
1875	244,998	180	1,359		436			1,649			3,284	
1876		183		663,424	441	1,505		1,655			3,320	
1877		185			446			1,660			3,358	
...												
1879		190			456			1,677			3,430	
1880	247,303	192	1,289		457			1,686			3,462	
1881		192		667,844	457	1,462		1,695			3,494	
1882		192			458		1,787,811	1,704	1,049	3,897,304	3,521	1,107
1883		192			459			1,714			3,545	
1884	257,411	193	1,334		462			1,723			3,572	
1885		194			466		1,843,183	1,732	1,064		3,602	
1886		196		731,303	470	1,556		1,742			3,631	
1887		197			473			1,751			3,660	
1888		198			474			1,760			3,688	
1889		198			476			1,768			3,718	
1890	294,956	200	1,477		478		1,878,691	1,776	1,058	4,726,859	3,749	1,261
1891		201		753,173	479	1,571		1,784			3,780	
...												
1895	319,860	208	1,536	779,838	490	1,593		1,816			3,922	
1896		211			494			1,824			3,960	
...												
1900	336,230	223	1,508	741,518	512	1,449	1,927,151	1,857	1,038	5,790,509	4,116	1,407
1901		226			516			1,866			4,154	

Sources: Students of Flora P. et al. (1983): "State, Economy and Society in Western Europe 1815-1875". Vol 1 and Population in A. Maddison, 1-2003 AD, <http://www.ggdc.net/maddison/>, taken from internet, March 2007

The information on Spain and the United Kingdom on total primary education, as well as that corresponding to 1830, 1840 and 1850 of the other countries. Are taken from Richard Easterlin (1981).

The data on students in Spain in 1846 and 1885 come from E. Levasseur (1893) "Comparative statistics of primary education", American Statistical Society.

Table A.2. 3
Students in primary education in the United States
(10,000 inhabitants)

Year	Students	Population (0000)	Students / 10,000 inhabitant
1830	1,986,047	1,324	1,500
...			
1850	4,244,349	2,358	1,800
...			
1870	6,871,523	4,024	1,708
...			
1880	9,867,505	5,046	1,956
...			
1882	10,117,552	5,303	1,908
...			
1890	14,231,000	6,330	2,248
...			
1892	14,469,000	6,592	2,195
1893	14,906,000	6,723	2,217
1894	14,987,000	6,854	2,187
1895	15,346,000	6,985	2,197
1896	15,623,000	7,116	2,195
1897	15,904,000	7,247	2,195
1898	15,894,000	7,378	2,154
1899	16,225,000	7,509	2,161
1900	16,423,000	7,639	2,150
1901	16,471,000	7,789	2,115
1902	16,511,000	7,947	2,078
1903	16,821,000	8,095	2,078
1904	17,020,000	8,249	2,063
1905	17,231,000	8,415	2,048

Sources:

The data for 1830, 1850, 1870 and 1882 was taken from R. Easterlin (1981)

The data for 1870, 1880 y 1890 come from E. Levasseur (1893)

From 1890 onward were taken from Goldin (1999), which include the students from kindergarten to 8th grade.

The data form population come from A. Maddison, <http://www.ggd.net/maddison/> march 2007.