

ON THE URGENT NEED FOR IMPROVING EDUCATIONAL SYSTEMS IN LATIN AMERICA

Sergio Costa Ribeiro¹

RESUMEN

En este trabajo, el autor sustenta que contrario a lo que se ha dicho por cinco décadas, el problema de los sistemas educativos en América Latina no es el abandono escolar sino la repetición. Agrega que es muy importante conocer qué es lo que los estudiantes aprenden, el grado de centralización del sistema, lo que es relevante para acceder a la promoción, cómo debería organizarse los currículos, el grado de participación de la comunidad, y la mejora de la información disponible y de las estadísticas. También enfatiza la existencia de una nueva revolución tecnológica que configura la situación de los productores y de los consumidores de tecnología, en la cual, aún aquellos que se encuentren en la posición de consumidores tendrán que contar con mayores habilidades y destrezas para operar la tecnología. La liberación del comercio, por otra parte, impone la necesidad de una inversión importante en educación básica.

A partir de la visión global anterior el autor concentra su análisis en el caso del Brasil, en donde considera que se han subestimado las tasas de repetición, al comprobar las inconsistencias que arrojan los datos producidos por las estadísticas educativas vis-à-vis de los datos que arrojan los censos.

En su trabajo presenta un análisis de esta situación basándose en el llamado método PROFLUXO. Ese método provee una alternativa para analizar el flujo de estudiantes por grado y nivel del sistema educativo. En una investigación realizada en el Brasil en 1988 al analizar la población escolar de 7-14 se encontró que casi todos los niños estaban matriculados, excepto un 5.3 por ciento localizado en el nordeste brasileiro. Los resultados de la investigación y la aplicación del método le permite concluir que no se trata de un problema nacional de falta de acceso, sino más bien de un problema de la calidad de la enseñanza.

Para el autor el factor determinante del acceso al nivel secundario es el socioeconómico. Además este nivel se considera preparatorio para la universidad. Ello, a su juicio, permite explicar por qué la educación técnica no es considerada una de las opciones más atractivas para los estudiantes.

A nivel universitario, considera que ha habido una hipertrofia en los estudios de postgrado y sustenta que el desafío en este nivel es el poder contar con docentes dispuestos a enseñar en las escuelas primarias y secundarias. Agrega que en este nivel la educación privada es de mala calidad y considera que en general el pago

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de los maestros en Brasil es muy bajo, todo lo cual tiene una influencia importante en la educación de la población en general, así como también en la de las élites.

SUMMARY

The author contends that, contrary to the belief widely held for five decades, the problem with educational systems in Latin America is not student dropout but rather student repetition. Furthermore, he states that it is of the utmost importance to determine exactly what students are learning, the extent to which the system is centralized, what is relevant in helping students move up in school levels, how curricula should be organized and the degree of community participation, as well as the improvement of available information and statistical data. He claims that a new technological revolution is shaping the situation of producers and consumers of technology, in a way that even the consumers will need to acquire advanced skills and talents, if they are to make proper use of that technology. On the other hand, the liberalization of trade dictates that a substantial investment should be made in basic education.

Parting from this global vision, the author concentrates his analysis on the case of Brazil where, given the discrepancies between educational statistics and census data, he considers that repetition rates have been underestimated. The paper presents an analysis of this situation using what is known as the PROFLUXO method. This method provides an alternative for analyzing student flow rates by grade and level in the education system. A 1988 survey in Brazil revealed that all children between seven and fourteen years of age were enrolled in school, except for 5.3 percent residing in the northeast of the country. Research findings based on this method suggest that there is no national problem of access to the educational system; the problem is rather one of educational quality.

For the author the determining factor to access to secondary education is socio-economic. Besides, this level is seen as preparation for the university, and this, in his view, explains why students do not rate technical education as one of the more attractive options.

At the university level, postgraduate studies have grown out of proportion. The author contends that the challenge at this level is to find teachers who are willing to teach in primary and secondary schools. He also states that the quality of private education at the university level is inferior, and teachers in general are very poorly paid in Brazil. All of which has a considerable impact on the education of the population at large, as well as on that of the privileged sectors of society.

RÉSUMÉ

Dans cette étude, l'auteur affirme que, contrairement à ce qui a été avancé pendant cinq décennies, le problème des systèmes éducatifs d'Amérique latine n'est pas celui de l'abandon scolaire mais celui du redoublement. Il ajoute qu'il est très important que l'on sache ce que les élèves apprennent et que l'on connaisse le degré de centralisation du système, ce qui est pertinent pour le passage de classe,

la façon dont les cursus devraient être organisés, le degré de participation de la communauté et l'amélioration des informations et des statistiques disponibles. L'auteur souligne également le déroulement d'une nouvelle révolution technologique qui redéfinit la position des producteurs et des consommateurs de technologie. En effet même les consommateurs devront faire preuve de plus d'aptitudes pour pouvoir l'utiliser. Par ailleurs, la libéralisation du commerce exige un investissement plus important dans l'enseignement de base.

Après avoir offert une perspective globale, l'auteur analyse le cas du Brésil où il estime que les taux de redoublement ont été sous-estimés compte tenu du manque de conformité entre les statistiques de l'éducation et les données des recensements.

L'auteur présente une analyse de la situation en se fondant sur la méthode dite PROFLUXO. Cette méthode offre un autre moyen d'analyser le flux d'étudiants par cours et par niveau au sein du système éducatif. A l'issue d'une enquête menée au Brésil en 1988 pour analyser la population scolaire de 7 à 14 ans, on a constaté que presque tous les enfants étaient inscrits à l'exception de 5,3 % d'entre eux qui se concentraient dans le nord-est du pays. Les résultats de la recherche et la méthode appliquée permettent à l'auteur de conclure qu'il ne s'agit pas d'un problème national de manque d'accès mais plutôt d'un problème de qualité de l'enseignement.

Pour l'auteur, le facteur déterminant de l'accès à l'enseignement secondaire est de nature socio-économique. Ce niveau est d'ailleurs considéré comme une préparation universitaire. Cela permet d'expliquer, selon lui, pourquoi l'éducation technique n'est pas considérée comme une des options les plus intéressantes pour les étudiants.

S'agissant de l'Université, il estime qu'il s'est produit une hypertrophie des études supérieures et il affirme que le défi à ce niveau est celui de trouver des enseignants disposés à travailler dans les écoles primaires et secondaires. Il ajoute qu'à ce niveau, l'enseignement privé est de mauvaise qualité et il estime qu'en général le salaire des enseignants brésiliens est très bas. Tout cela a une profonde incidence sur l'éducation de la population en général, ainsi que sur celle des élites.

RESUMO

Neste trabalho, o autor julga que, contrariamente ao que se vem dizendo nas últimas cinco décadas, o problema dos sistemas educacionais na América Latina não é a desistência escolar mas a repetência. Acrescenta que é importante conhecer o que os estudantes aprendem, o grau de centralização do sistema, o que é necessário para que se tenha acesso à promoção, como se deveria organizar os currículos, o grau de participação da comunidade e em que medida melhoram a informação disponível e as estatísticas. Também salienta a existência de nova revolução tecnológica que a situação dos produtores e dos consumidores de tecnologia configura, na qual, mesmo aqueles que se encontram na posição de consumidores terão de ser donos de maior capacidade e melhores aptidões para usar da tecnologia. A liberação do comércio, por outro lado, impõe a necessidade de importante inversão do ensino básico.

A partir dessa visão global, o autor concentra sua análise no caso do Brasil, em que, segundo ele, se subestimaram as taxas de repetência, ao comprovar as incoerências que apresentam as estatísticas educacionais quando comparadas com os dados censitários.

Seu trabalho apresenta uma análise dessa situação, baseada no chamado método PROFLUXO, que oferece uma alternativa para a análise do fluxo de estudantes por grau e por nível do sistema educacional. Numa pesquisa realizada no Brasil em 1988 sobre a população escolar de 7 a 14 anos de idade, constatou-se que quase todas as crianças estavam matriculadas, com exceção de 5,3%, no nordeste brasileiro. Os resultados da pesquisa e aplicação do método permitiram-lhe concluir que não se trata de problema nacional de falta de acesso à escola, mas de problema da qualidade do ensino.

Para o autor, o fator determinante do acesso ao nível secundário é sócio-econômico. Ademais, considera que esse nível seja preparatório para a universidade, o que, a seu ver, permite explicar por que não é o ensino técnico uma das opções mais atraentes para os estudantes.

No nível universitário, o autor é de opinião que houve uma hipertrofia dos estudos de pós-graduação e pensa que o desafio, nesse nível, consiste em poder dispor de professores que estejam dispostos a ensinar nas escolas primárias e secundárias. Acrescenta que, também nesse nível, o ensino privado é de má qualidade e que, em geral, a remuneração dos professores no Brasil é muito baixa, fatores esses que exercem grande influência na educação da população em geral, bem como na educação das elites.

Introduction

During the past few years the world has become increasingly aware of the effect that the rapid revolution in automation and the development of fast and cheap computer facilities is having on the relationship between capital and work force, and the consequent necessity of improving the education of the population as a whole.

The new international political alliances that are being structured are dividing our planet into new blocks that ignore ideologies and historical differences. This situation will produce two basic configurations of nations in the near future: producers and consumers of technology.

It is also becoming clear that for the less developed countries — even those that will not, for a long time yet, be considered as co-producers of new technologies developed in the industrialized countries, the need for the population to have better skills, even as consumers, is a question of belonging to the international community or not.

The new elected democratic governments that have taken power in recent years in Latin America are proposing a radical change in industrial and international trade policies. The policies implemented since the 1950s, of barring imports of manufactured goods, and trying to substitute them for local products are being abandoned. New practices defined as neo-liberalism are rapidly taking over. This of course, will imply lowering production costs and improving

product quality in order to compete internationally in a domestic market which represents, at least, in Brazil, over 90 percent of the gross national product.

From this perspective, the days of the traditional social structure of Latin American countries — based on a small, well-educated elite and a large mass of almost illiterate population including low paid workers are over. Latin America, with its sky-high international debt and low efficiency levels, will have to invest heavily in *Basic Education* for the next few decades in a way that has never been attempted. It is not yet clear to government policy-makers that education is the key to the success of such a radical political change. Efforts so far demonstrated in this direction are modest in ideas, projects and budget allocations.

One of the first things that has to be done in order to help policy makers in their decisions to improve education is to correct their diagnosis of the educational systems in Latin American countries. As will be shown in this paper, the lack of reliable information, mainly of statistical indicators and an absence of continuous and nationwide achievement test surveys, is a serious handicap for these countries.

As far as statistical information is concerned, as of the 1960s, several researchers² have shown that the indicators produced by the Ministries of Education in Latin American countries, in general, contain errors that have signaled toward false problems overlooking the real ones.

For almost five decades, educational statistics have emphasized that early school dropout was the most critical problem facing educational systems in Latin America. However, researchers have now shown that repetition is not only the most severe problem, but that it is also the main reason for dropouts and the consequent low education level of the population.

The need for a better knowledge and understanding of what the students are really learning in school is yet to be realized throughout Latin America. How centralized should the educational system be? What is relevant in the promotion criteria for each grade and how should the curriculum for the next generations be organized? On point a consensus is developing in Latin America: there is a need for a cognitive evaluation of the student body and the participation of local communities in improving school quality through the application of the results of such an evaluatory program.

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The Brazilian Case

The Elementary School System

For historical reasons, information on student flow rates in Brazil and throughout Latin America is based on school census made available annually by the Ministries of Education. In them, the rates of repetition, dropouts and promotion reported by school principals overestimate the dropout rates and underestimate repetition rates. The reasons for these inaccuracies are many; the most important ones being the following:

- a) With high rates of repetition, students who repeat a grade in a given school will probably enroll in another school as new students, or will enroll in the same school also as new students, in order to avoid the social stigma of repetition. This is especially true in the first grade because no previous enrollment documentation is required.
- b) The true number of repeating students may be purposely under-reported because a high rate of repetition may affect the image of the teacher and is likely to produce administrative interventions from the system management controller.

As a consequence of these and other related problems, the statistics produced by this methodology yield results that are inconsistent with demographic data. In 1982, for example, transition rates resulting from repetition and dropouts produced an enrollment figure of 5,174,000 new students in the first grade (in Brazil, elementary school has 8 grades) for the whole country, as shown in Table 1.³ Since there were 3.0 million people⁴ in the seventh year age cohort⁵ (the mean age of first enrollment), in 1982, and since the educational system is relatively stable, it would be impossible to enroll as many new students as 1.72 times an age cohort every year.

TABLE 1

OFFICIAL TRANSITION RATES
FOR 1982 IN BRAZIL

Grade	Repetition	Promotion	Dropout
1	0.296	0.449	0.255
2	0.207	0.703	0.090
3	0.169	0.738	0.093
4	0.134	0.818	0.048
5	0.227	0.634	0.138
6	0.199	0.700	0.102
7	0.170	0.730	0.100
8	0.123	0.764	0.114

3 Serviço de Estatística da Educação e Cultura, *Sinótese Estatística de Educação Básica 1981/1982/1983* (Brasília: SEEC, 1984), Tab. 3.2 e 3.5, p.35, 38, 85 e 88.

4 FIBGE Special Tabulations of the 1982 PNAD, Brazil.

5 An age cohort consists of all individuals born in the same year, ignoring mortality, an age cohort is composed of all individuals of a given age.

Several research groups have proposed alternative methodologies for circumventing this and other similar problems, using only the basic data that seems to be consistent in most countries: the enrollment figures. However, these methods depend upon the acceptance of at least one of the grade transition rates reported in the official statistics, which may be a risk.

In recent years a new method known as PROFLUXO⁶ has been developed based solely on a household sample survey or census data; it produces figures for transition rates that are consistent with other methods and seems to be much more precise and reliable. In addition, since it uses census or extensive survey data, we can break down these rates for a broad number of the population's characteristics that would be impossible to do with school census data alone. Table 2 reports the figures for the same set of rates produced by this new methodology.

TABLE 2

PROFLUXO MODEL TRANSITION RATES
FOR 1982 IN BRAZIL

Grade	Repetition	Promotion	Dropout
1	0.524	0.453	0.023
2	0.342	0.616	0.042
3	0.265	0.665	0.070
4	0.215	0.601	0.184
5	0.318	0.597	0.085
6	0.192	0.720	0.088
7	0.165	0.729	0.107
8	0.195	0.603	0.202

Comparing the values of Tables 1 and 2, it is immediately clear that the official statistics grossly underestimate repetition and overestimate dropout, especially at the first grade level. It can be seen that dropout figures at the first grade level are ten times lower than the official figures. PROFLUXO also automatically calculates the real number of new entrants in the school system. In 1982 this number was 0.93 of an age cohort of 2.8 million, which is in total agreement with demographic possibilities. This figure is just over half of the official one.

The consequences of errors of this magnitude are very important if one is trying to establish any sort of educational policy. To begin with, over counting

6 Philip R. Fletcher, *A Mathematical Model of School Trajectory: Repetition and Performance of First Level Schooling in Brazil* (Brasília: CNRH/IPEA, 1985).

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Philip R. Fletcher and S. Costa Ribeiro, "O Ensino de Primeiro Grau no Brasil Hoje," *Em Aberto*, Vol. 6, No. 3, 1987.

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The Brazilian Case

The Elementary School System

For historical reasons, information on student flow rates in Brazil and throughout Latin America is based on school census made available annually by the Ministries of Education. In them, the rates of repetition, dropouts and promotion reported by school principals overestimate the dropout rates and underestimate repetition rates. The reasons for these inaccuracies are many; the most important ones being the following:

- a) With high rates of repetition, students who repeat a grade in a given school will probably enroll in another school as new students, or will enroll in the same school also as new students, in order to avoid the social stigma of repetition. This is especially true in the first grade because no previous enrollment documentation is required.
- b) The true number of repeating students may be purposely under-reported because a high rate of repetition may affect the image of the teacher and is likely to produce administrative interventions from the system management controller.

As a consequence of these and other related problems, the statistics produced by this methodology yield results that are inconsistent with demographic data. In 1982, for example, transition rates resulting from repetition and dropouts produced an enrollment figure of 5,174,000 new students in the first grade (in Brazil, elementary school has 8 grades) for the whole country, as shown in Table 1.³ Since there were 3.0 million people⁴ in the seventh year age cohort⁵ (the mean age of first enrollment), in 1982, and since the educational system is relatively stable, it would be impossible to enroll as many new students as 1.72 times an age cohort every year.

TABLE 1

OFFICIAL TRANSITION RATES
FOR 1982 IN BRAZIL

Grade	Repetition	Promotion	Dropout
1	0.296	0.449	0.255
2	0.207	0.703	0.090
3	0.169	0.738	0.093
4	0.134	0.818	0.048
5	0.227	0.634	0.138
6	0.199	0.700	0.102
7	0.170	0.730	0.100
8	0.123	0.764	0.114

3 Serviço de Estatística da Educação e Cultura, *Sinópsis Estatística de Educação Básica 1981/1982/1983* (Brasília: SEEC, 1984), Tab. 3.2 e 3.5, p.35, 38, 85 e 88.

4 FIBGE Special Tabulations of the 1982 PNAD, Brazil.

5 An age cohort consists of all individuals born in the same year, ignoring mortality, an age cohort is composed of all individuals of a given age.

Several research groups have proposed alternative methodologies for circumventing this and other similar problems, using only the basic data that seems to be consistent in most countries: the enrollment figures. However, these methods depend upon the acceptance of at least one of the grade transition rates reported in the official statistics, which may be a risk.

In recent years a new method known as PROFLUXO⁶ has been developed based solely on a household sample survey or census data; it produces figures for transition rates that are consistent with other methods and seems to be much more precise and reliable. In addition, since it uses census or extensive survey data, we can break down these rates for a broad number of the population's characteristics that would be impossible to do with school census data alone. Table 2 reports the figures for the same set of rates produced by this new methodology.

TABLE 2

PROFLUXO MODEL TRANSITION RATES
FOR 1982 IN BRAZIL

Grade	Repetition	Promotion	Dropout
1	0.524	0.453	0.023
2	0.342	0.616	0.042
3	0.265	0.665	0.070
4	0.215	0.601	0.184
5	0.318	0.597	0.085
6	0.192	0.720	0.088
7	0.165	0.729	0.107
8	0.195	0.603	0.202

Comparing the values of Tables 1 and 2, it is immediately clear that the official statistics grossly underestimate repetition and overestimate dropout, especially at the first grade level. It can be seen that dropout figures at the first grade level are ten times lower than the official figures. PROFLUXO also automatically calculates the real number of new entrants in the school system. In 1982 this number was 0.93 of an age cohort of 2.8 million, which is in total agreement with demographic possibilities. This figure is just over half of the official one.

The consequences of errors of this magnitude are very important if one is trying to establish any sort of educational policy. To begin with, over counting

6 Philip R. Fletcher, *A Mathematical Model of School Trajectory: Repetition and Performance of First Level Schooling in Brazil* (Brasília: CNRH/IPEA, 1985).

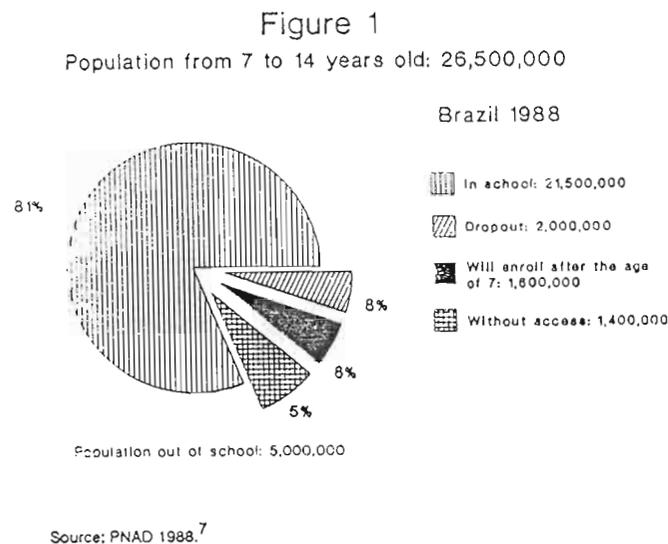
Philip R. Fletcher, "A Repetência no Ensino de 1 Grau: um Problema Negligenciado da Educação Brasileira," *Revista Brasileira de Administração Educação*, Vol. 3, No. 3, 1985.

Philip R. Fletcher and S. Costa Ribeiro, "O Ensino de Primeiro Grau no Brasil Hoje," *Em Aberto*, Vol. 6, No. 3, 1987.

Philip R. Fletcher and S. Costa Ribeiro, *Modeling Education System Performance with Demographic Data; An Introduction to the PROFLUXO Model* (Paris: UNESCO, 1989).

the number of new entrants in a school system will produce a much higher mean age value of students entering school for the first time than the real one. In actuality, what they are doing is double counting the number of students who had already spent one or more years in another school. This in turn, gives the wrong impression that families have problems enrolling their children at the proper age. On the contrary, by the age of 8 over 80 percent of the students who will eventually attend school are already in school.

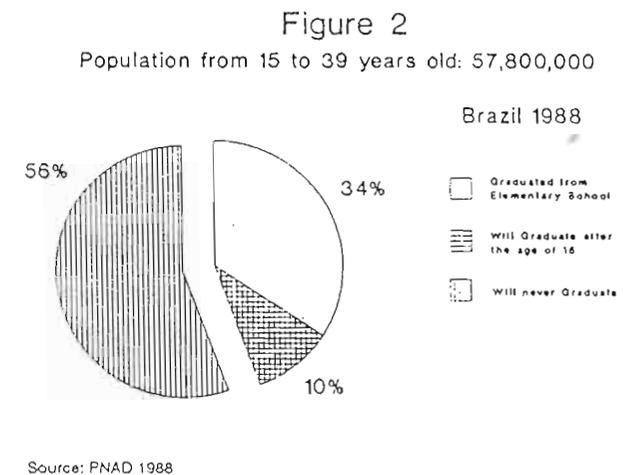
In Brazil, by law, all children ages 7 to 14 years of age should be in school. Figure 1 shows that access to school was almost universal by 1988. We see that only 5.3 percent of that population had not enrolled in school (1.4 million people). PROFLUXO shows that over 70 percent of them live in the poorest regions of the Brazilian Northeast. Thus, the problem of access to school in Brazil, instead of being a national problem, is a local one and should be treated as such. There is a great difference between the real number of children without access to school and the official number. That difference, depending on the source, may vary from 5 to 8 million.



The number of dropouts in this age range is low, and in disagreement with the official data. But if we measure the situation for the age range from 15 to 39 years old, we see in Figure 2 that only 35 percent of this population has graduated from elementary school and 10 percent will graduate after the age of 15. If we calculate the mean time, in years, that the whole population in its life

span spends in the 8 grades of elementary school, we arrive at a figure of 8.5 years for the year 1988, according to the PROFLUXO model. This is about 6 months more than what should be necessary for the whole population to graduate from this elementary level.

What these numbers actually tell us is that families in Brazil are making a strong effort to keep their children in school at least through elementary school and that repetition, not early dropout, is responsible for the situation depicted in Figure 2.



This analysis clearly shows what is at stake in Brazil's elementary educational system today: the quality of education. This is not a new problem. Data from 1941, analyzed by Teixeira de Freitas⁸ using a similar methodology, showed that although only 65 percent of an age cohort had access to school, the first grade repetition rate was 60 percent. Thus, Brazil really has not made any real progress in the past 50 years as far as repetition rates are concerned. However, we have succeeded in increasing the population's access to elementary school to almost universalization.

Another indicator value which is rapidly increasing is the mean number of grades completed by the whole population: from 5.1 grades in 1982 to 6.6 grades in 1988. This represents an increase of a quarter of a grade per year over the period.

Unfortunately, these positive figures tell us nothing about the real meaning of that progress. If we could measure what is really being learned by the students, perhaps by incorporating the real statistics for the flow of students, we could

8 M. A. Teixeira de Freitas, from "Dispersão Demográfica e Escolaridade," *RBE*, Vol. 1, No. 3, Rio de Janeiro, 1940, pp. 497-527, to "A Escolaridade Média no Brasil: Dados e Perspectivas," *RBE*, Vol. 1, No. 3, Rio de Janeiro, 1940, pp. 528-547.

learn if those results are due mainly to a lowering of the promotion criteria or not. We strongly suspect that similar phenomena are taking place throughout Latin America. It would be very interesting if this or other similar methods of analyzing the flow rates of students in school systems were put into practice by the Latin American Ministries of Education (including Brazil), thus perhaps leading to an awareness of the need to improve the quality of education in these countries. *The Secondary Educational System (High School)*

So far, we have analyzed the effect of repetition in the elementary school system of Brazil as a whole. Clearly, the selection process that occurs in elementary schools is by no means independent of the student's social and economic family background. On the contrary, that socio-economic level is the main explanatory factor for dropout rates in elementary schools.

Moreover, it is also clear that access to the secondary educational level is strongly affected by this factor even in Brazil's most affluent region, the Urban Southeast (States of Rio de Janeiro, São Paulo and Minas Gerais), as shown in Figure 3.

This condition produces a great distortion in the socio-economic status of secondary students. The vast majority of them regard this level of education just as a preparatory step for admission into college or the university, thus, almost all governmental attempts to foster technical schools have been frustrated due to this condition. Good technical schools, in their great majority, actually graduate technicians who go on to become the best university students, particularly in engineering.

Access to Secondary Education
Urban Southeast

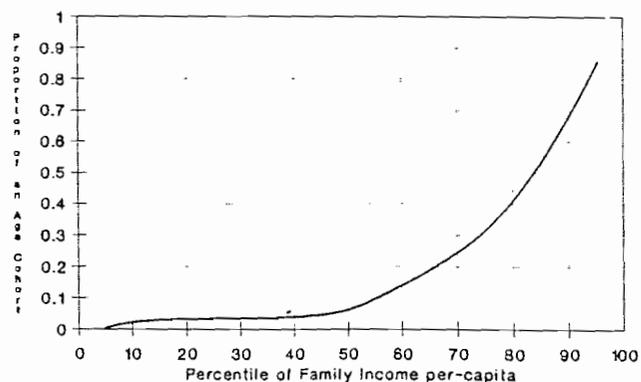


Figure 3

To increase the number of better trained technicians who enter the job market at the technical level, we would need to improve the social status of technical professions at the secondary level by offering better salaries to their graduates.

Nevertheless, the mean number of years spent by the Brazilian population in the usual 3-year secondary school level, was 1.0 year in 1982 and increased to 1.15 years in 1988. It is clear that Brazil is still struggling for better elementary education and that secondary education is "reserved" for the richest third of its population.

College or University Level

The access to higher education in Brazil today is limited to the richest quarter of the population. Only 25 percent of the total vacancies available are offered by tuition-free public universities and technical schools. The entrance examination limits admission into universities to about half of all high school graduates. These universities are mostly directed toward technical and professional careers with a complete absence of general education courses.

One of the consequences of modernization of any society is the emergence of new forms of labor. Craftsmanship is becoming again an important part of the non-collective work force. Instead, during the past twenty years, Brazil has devoted all of its efforts for development of higher education toward graduate schools, and has assumed the leadership in this level of education in Latin America. Today, Brazil has close to forty thousand students enrolled in graduate courses, and at least one third of them become trained at a level of excellence comparable to the best levels in industrialized nations. Even so, it is still a small number for a nation of 140 million people.

Today, one of the greatest challenges facing the higher education training system of Brazil is to find good students to occupy teaching positions in elementary and secondary schools. The entrance examination of the public universities—which usually have the best teaching-training courses—prevent the admission of applicants who receive low test grades. Consequently, those students eventually will graduate from private schools which, in general, are of a very low level of quality in Brazil. Of course, salaries are very low for these teaching professions and do not attract the good students as it did in the past.

If this condition continues for a long period of time, the whole educational system is in serious danger of seeing the complete destruction of its capacity to educate the whole population or even tomorrow's elite.