

# Rural School Transportation in Brazil as an Essential Factor For The Education Policy

Willer Luciano Carvalho, Yaeko Yamashita, Joaquim José Quilherme de Aragão

**Abstract—** The Brazilian Constitution guarantees the right to education for all children and adolescents, may they reside in rural or in urban areas. In order to ensure this right, the federal, state and municipal governments are equally obliged to provide the resources needed to ensure the school access and permanence of the pupils. The provision of free and efficient school transportation for all students in the public school network stands out among such resource needs. Particularly, the Brazilian educational system has rendered children from rural areas increasingly dependent upon public transportation, as some of the policies implemented over the years (e.g. concentration of the school services in the core city of the municipality) have augmented the distances for the rural children. In some cases, they must commute for over four hours between their homes and schools. In addition, public authorities have not always been able to guarantee safe, adequate transportation that responds to the needs of the children living under the particular conditions of the rural areas. Faced with this scenario, this study portrays the conditions of the physical access to the school imposed upon the children living in rural areas, which jeopardize their social inclusion process that should be assured by the education system.

**Index Terms—** Education policy, rural school transportation, school transportation.

## I. INTRODUCTION

School services are an important factor of social inclusion and life quality in the Brazilian rural zones. Therefore, the inequalities in school access cause shortage of opportunities to a big portion of the national population that has no conditions to claim many of essential rights, among them, the access to education. In fact, for a long time the governments have not given proper attention to the conditions and needs of the rural areas. Subsequently, a large number of families have preferred to migrate to the urban areas in order to get access to education and other social services, in order to ensure better life conditions for their children.

The following rural exodus has promoted the swelling of urban centers, bringing up high levels of unemployment and poverty. Recently, many policies have tried to rescue this important social aspect, looking for ways to guarantee education to people living in rural areas of the country.

Examples of these policies are the programs “The Way to the School” and the National Program of Supporting School Transport – PNATE. The first program has promoted the renewal of the fleet of vehicles used for rural school transport; and the second consists in the general and additional transfer of financial resources to the state and municipal governments for school transport dispenses [1].

This paper delivers a general picture of the historical perspective and the present conditions of the educational services in the Brazilian rural areas (Sections 2 e 3), and also of the particular problem of the physical access and transportation conditions in rural education (Sections 4 and 5). Section 6 closes the paper with conclusions.

## II. EDUCATIONAL POLICY FOR RURAL AREAS IN BRAZIL

In spite of being a country with a strong agrarian economy, the efforts related to education were focused in the emerging middle classes of the towns and cities, relegating the educational needs of the rural population to abandonment. Historically, these needs have never been a serious concern for the rich farmers and landowners, which held slaves and rural workers in their properties. By the way, the right to education on the countryside was not contemplated in the Constitutions of 1824 and 1891 [2].

The emergence of rural education in Brazil only happened in the 20th century, more precisely around 1920, as a consequence of an intense migratory process from rural areas to the towns and cities during this period. It was expected that rural education could be a strategy to hold back this wave of migration. For this aim, a network of schools, albeit isolated and insufficient in number, was built in the rural zone [3]. These schools were small, had poor physical conditions and delivered also a poor educational service by low-paid and poorly trained teachers without any administrative and pedagogic support [4].

When Vargas gripped on the Presidency following the Revolution of 1930, he introduced a educational policy for the rural area, which was part of a project for the modernization of the countryside and was financed by North American cooperation organisms [5]. This educational policy was thought as a leverage for increasing the agricultural productivity.

In legal terms, countryside education got a first ruling in the Constitution of 1934, which assured the funding for school service for the countryside as a responsibility of the authorities. Later on, with the promulgation of the Law for Guidelines and Bases of Brazilian Education (Law no. 4.024

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from December 1961), rulings for fundamental school education in the rural zone were introduced. The municipal governments were held responsible for the construction of the schools, for contracting and training the teachers and for defining the educational management procedures [6].

During the military period, the deep political changes in the country were reflected in the education resort. A new Law of Basic Guidelines for Education (Law no. 5692/71) was promulgated, which conceded some attention to rural education; however, the rulings ignored actual aspects of the social and cultural reality of the rural communities [7].

Only with the Constitution of 1988, the mandatory and free access to education was considered as a straightforward subjective right (article 208) [6]. By the article 227 of this new Constitution, the fundamental rights to live, to health, to food, to education, to leisure, to proficiency, to culture, to dignity, to respect, to freedom and to family life were conceded to every child and young citizen [8].

A new Law of Guidelines and Bases of Education from 1996 recognizes the right to social cultural diversity and also the right to equal but also to specifically appropriated treatments, and this led to a better definition of the operational guidelines for the rural education [9].

However, many of the educational policies designed under an urban optic, disregarding specificities of the rural zone. One of such policies was the so-called process of “nucleation of the Brazilian” educational system, whereby small school and classes in the rural area should be substituted by major school centers generally located in an urban area, or outside the urban area and between major farms and the communities [10].

The idea behind the process of “nucleation” was to improve the educational system and to equalize the conditions of the rural school with the urban school. By grouping the teaching units in one location, it would be easier to assure the whole set of single-level classes, substituting the multi-level ones, to improve the infrastructure of the schools (classroom, library, etc.) as well to contract better qualified teachers [9].

The following figures can deliver an idea of the changes suffered by the educational system in the rural areas:

- The total number of establishments for elementary education dropped from 225.520 schools from basic education in 1997 to 197.468 in 2009 (Fig. 1);
- With respect to the school located in the rural area, the reduction rate between 1997 and 2009 has attained 40% for the schools in rural area, between 1997 and 2009;
- Thus the percentage of “genuine” rural schools in the educational system dropped from over 60% in 1997, to slightly over 40% in 2009.

Total of Basic Education Schools (Urban + Rural)

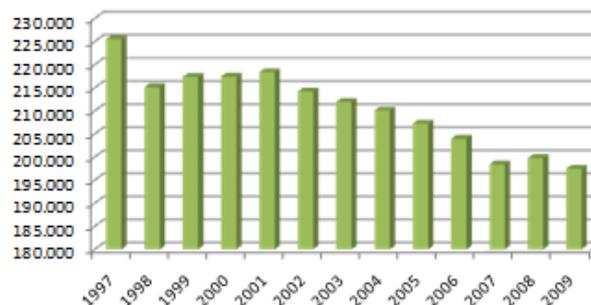


Fig. 1: Total of Basic Education Schools (Urban+ Rural) [11]

However, this process gave rise to critics, as the pupils would be taken out from his rural environment; also it became difficult to give an uniform teaching to students from different backgrounds in one establishment [10]. On the top of this, the nucleation policy made the rural zone student even more dependent from school transport. On the other hand, the contact of the rural children with the urban ones led to the loss of local rural culture. Among several studies on the nucleation policy, Vendramini (2004), Kremer (2006), Sales (2007) e Castro and Souza (2007), compare the advantages and disadvantages of this model.

Further in 2001, a National Plan of Education was promulgated, which included among its guidelines special considerations for rural school, foreseeing the progressive extinction of multileveled schools. In 2003, a National Fund for Educational Development – FNDE was created as an autarchy of Ministry of Education – MEC. This autarchy has been in charge of developing the National Program for Supporting School Transport, which was then turned effective by the Law n. 10,880/03. This program has the objective to guarantee the access and permanence of the pupils of the elementary public school that are residing in rural areas and use school transport, and ensures financial support by the State governments as well by the governments of the Federal District and of the cities [12].

On 15th March .2007, the Brazilian government released the Plan for Educational Development – PDE with the focus in the quality of the elementary education For this aim, the PDE specified quality goals for the elementary education and foresaw reinforced assistance to cities with a low education index [13].

Among the subsidiary programs of the PDE there was the so-called program “The Way to the School”, which was entirely dedicated to the school transport for pupils of the elementary education which were living in rural zone. This program has as priorities the renewal of the vehicle fleet used for school transport in Brazil, its standardization, the reduction of costs of the vehicles, as well transparency in the process of its acquisition. Safety and service quality considerations were in the foreground [12].

### III. THE SITUATION OF THE RURAL EDUCATIONAL SYSTEM IN BRAZIL: SOME FIGURES

There is a deep inequality in the educational system between rural and urban areas. Accordingly to the data of the

Ministry of Education and the National Institute for Educational research (INEP), approximately 75% of the students registered in rural areas coursed the classes of fundamental education in the year 2009 (Table I), which testimonies the relevance of fundamental education for the population of the rural areas. However, the figures on the table show also failure in the provision of high and technical education in these areas, leading to a premature abandonment of the school education by this population, or to a forced displacement to an urban center in order to continue the studies.

TABLE I: Number of registrations by location, stage and educational degree [11]

	Urban 2009	Rural 2009
<b>Fundamental Education</b>	<b>45.900.077</b>	<b>6.680.375</b>
Pre-school education	5.857.863	904.768
Fundamental education	26.826.440	4.932.518
High school	8.060.799	276.361
Special Education	197.269	1.988
Young and adult education	4.128.456	532.876
Professional Education	829.250	31.864

The strong dependence of the population of the rural areas from the state-owned education establishments is also visible in the Fig. 2, due to its too low acquisitive power for attending private establishments.



Fig. 2: Fundamental Education Registration by category of establishment [11]

Another aspect that comes out from the MEC/INEP studies is that from the age of 15 onwards the population attending school in the rural areas is almost half of the verified number in urban areas. Furthermore, the mean life period attending school in the rural area is 4 years, while in urban areas this figures goes up to 7 years [13]. These figures may reflect the need of the population in the rural areas to start soon with the work life, in order to sustain the families. A better distribution of the school establishments or the melioration of its accessibility could produce some progress in this context. Unfortunately, the nucleation policy argued above may have turned school attendance more difficult.

A further feature of the inequality between the rural and urban areas is the difference in the illiterateness from the age

of 7 years and up (Fig. 3).

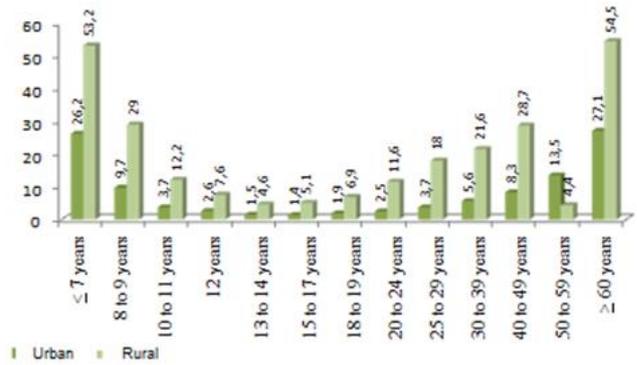


Fig. 3: Illiterateness tax per household type and age class in Brazil in 2004 (%) [14]

The Table II shows the illiterateness index for the population 10 years old onward in the rural areas was still over 40% in 1991. In 2008, this index had dropped to 21% in the rural area, while in the urban area, the index was 8% (IBGE, 2008). One may conclude that despite the progress, the index is still high in the rural area and much higher than in the urban area [1].

TABLE II: Illiterateness Tax for Population 10 years old and over [1] [15]

Area	1991	2000	2008
Urban	13,80%	10,30%	8,20%
Rural	40,10%	29,80%	21,00%
<b>Total</b>	<b>19,70%</b>	<b>13,60%</b>	<b>10,20%</b>

Another important shortcoming in the school system of the rural areas is school delay, which again is higher than in the urban areas (Fig. 4).

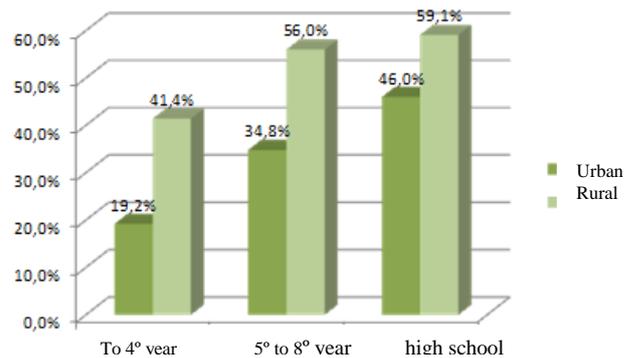


Fig. 4: School delay in the urban and rural areas in 2005 [13]

Due to the regional disparities within the Brazilian territory, these figures may vary strongly between the regions. For example, the school delay issue presents different figures accordingly to the regions: whereas in the North and Northeast regions the taxes were 53,7% and 44,5%, respectively, for the beginning levels, and 65,2 and 63,4% for the final levels of the rural fundamental school, the South region showed 15% for the beginning levels and 31,5% for the final level (figures of 2005). [1].

The scenario presented proves the necessity to improve the

education level mainly for rural areas residents, in order to correct the inequalities pointed. However, on main issue is the larger demand of transport in order to guarantee students access education units, which have been affected by longer periods spent inside the vehicles.

This generally precarious situation for the rural population are even worse for the indio population, the population of the “quilombas” (remaining communities of former fugitive slaves), and the unsettled landless workers.

#### IV. THE ACCESSIBILITY PROBLEM OF THE RURAL SCHOOLS

The nucleation policy described above has transferred to school transport the responsibility to guarantee to the students the access to school, although the actions on the transport side should be complemented by a proper restructuring of the network of the school establishments, in order to enable school permanence and good learning conditions.

In fact, a domiciliary survey organized by [16] could state that the lack of schools near home, the shortage of school places as well deficiencies of the school transport are main reasons for school dropout. This survey has shown that almost 15% among individuals between 7 and 14 years old do not go to school; among those between 15 and 17 years old, this percentage drops to 5% (Table III). These are high percentages for a country that is trying to develop social equality.

TABLE III: Percentage of students not going to school [16]

	GROUPS OF AGE	
	7 to14 yrs.	15 to 17 yrs.
<b>BRAZIL</b>	14,7%	5,3%
<b>North</b>	20,9%	6,7%
<b>Northeast</b>	12,9%	5,3%
<b>Southeast</b>	15,1%	4,4%
<b>South</b>	8,4%	6,1%
<b>Midwest</b>	19,0%	5,8%

A similar study has been done by the Getúlio Vargas Foundation [17], upon the data of the National Domiciliary Survey (PNDA) which were related to education. In this study four big groups of factors that make students drop out from school were identified: bad accessibility to school; the need of work and generate income; the lack of interest; and other remaining causes (see Table IV).

TABLE IV: Influencing factors for dropping out of school (urban and rural area) and respective percentage [17].

Influencing Factors	(%)
Poor school accessibility	<b>10,9%</b>
Need to work and income generation	27,1%
Intrinsic lack of interest	40,3%
Other reasons	21,7%

With respect to school evasion due to poor accessibility, the research by FGV (*ibid.*) has revealed seven conditioning factors, they are [17]:

- Disease or physical disability of students;
- Lack of school places;
- Distance to school from home;
- Lack of school transport service;
- School does not deliver higher degrees;
- Problems with students documentation;
- Unavailability of accompanying person.

Table V: illustrates the respective percentages for each cause, for the years 2004 and 2006 [17].

Factors of lack of accessibility	2004 (%)	2006 (%)
Disease or physical disability	45,97	45,10
Lack of school places	17,77	15,75
<b>Distance to school from home</b>	<b>17,04</b>	<b>12,55</b>
<b>Lack of school transport</b>	<b>12,49</b>	<b>10,23</b>
School does not deliver higher degrees	-	6,92
Documentation problem	6,68	9,45
Unavailability of accompanying person	0,06	-
Total of accessibility restrictions	100	100

Another study dealing with school access difficulties in rural areas was brought up jointly by the National Confederation of Agriculture and Livestock (CNA), the National Service for Agricultural Education (SENAR), and the Brazilian Institute of Public Polls and Statistics (IBOPE). By this study [18], aspects more strictly related to the transport conditions were identified as largely responsible for the difficulties suffered by the youth of the rural area (see Table VI).

Therefore, it is evident how relevant the rural school transport conditions are for the registration and for the permanence of students from rural areas in the school system. Especially the long distances and travel times were pointed out as main deterrence factors for the children.

Table VI: Factors that cause difficulties studying in schools (rural zone) [18].

Factors causing difficulty of school Access	%
<b>TRANSPORT</b>	<b>42</b>
• Lack of school transport service	9
• Dangerous river crossings	2
• Poor roads conditions	13
• Distance to school	19
<b>POOR SCHOOL INFRASTRUCTURE</b>	<b>31</b>
<b>LACK OF SCHOOL STAFF AND ORGANIZATION</b>	<b>11</b>
<b>FAMILY ISSUES / INDIVIDUAL REASONS</b>	<b>11</b>
<b>OTHER FACTORS</b>	<b>5</b>

Another aspect to be considered is that this nucleation policy did not ensure a melioration of the educational services even in the centralized establishments, due to the continuing geographic isolation of many municipalities, which turns difficult its supervision and encourages dropping out [19].

### V. 5. CHARACTERISTICS OF SCHOOL RURAL TRANSPORT IN BRAZIL

Despite of the relevance of the subject, there is a lack of studies and surveys on school transport in Brazil and on its conditions for the students from rural zone. On the national level, one of the first studies had been done by the Brazilian Transport Planning Company – Geipot, during the year of 1995 [19].

According to the Scholar Census 2009, from the totality of the population attending elementary education (52.580.452), 14% were living in the rural area and in need of school transport. Brazil had that year 8.098.191 students attending elementary education in rural areas or in urban areas and using the rural school transport supplied by state or municipal authorities [11]. From this number, 5.115.678 were students actually living in rural zone (17 % were attending State schools and 83% municipal schools; see Table VII).

Table VII: Number of students from elementary education transported by the authorities (2009) [11].

Urban	Rural				TOTAL
	Federal	State	Municipality	Private	
2.982.513	2.393	1.925.269	3.158.222	29.794	8.098.191
36,83%	0,03%	23,77%	39,00%	0,37%	100,00%

The main problems of the rural transport in Brazil are: a) long distances; b) poor roads; c) inappropriate and old vehicles; d) overcrowding and e) lack of regulation. Long walks made by students are a reality in school rural transport. These walks take the students directly to school or at to a next stop for the school transport. In the rule, the students walk about 12 km, taking more than 1 hour [20]. Along the rural routes, the pupils are exposed to attack of animals (snakes, bees or even jaguars), and are also exposed to weather changes, from inclement sun to pouring rain. (Fig. 5).



Fig. 5: Children commuting to school [21]

But also the daily trips inside the vehicles are long. In a research made by FNDE on 200 routes in 17 visited municipalities of the five Brazilian regions, there were routes with over 140 km [20] [22].

With respect to commuting times, the same research showed that the majority (65%) of the routes took above 60 minutes, and only 10% took less than 30 minutes (Fig. 6). On

the other side, 13,7% of the routes took more than two hours, and there are even those which took more than 4 hours from home to the school [23]. In these last cases, school transport time exceeded the time the students stayed in class. These figures may conclude the high level of discomfort, stress and subsequent prejudice for the learning process.

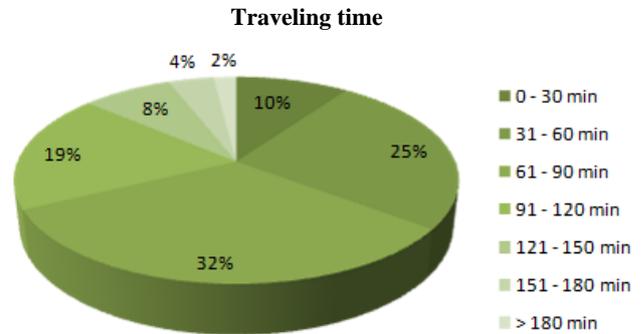


Fig. 6: Traveling times inside the vehicle [23]

The distance and commuting time problem may be worsened by simple lack of appropriated rural road infrastructure, which is severely underinvested. In some cases, children are even near to the schools, but they have not access to them because of the lack of proper road and bridges. Another fact is that 98% of roads used by rural school transport in Brazil are not paved and also suffer from poor maintenance (see Fig. 7) [24].



Fig. 7: Poor road conditions [21]

On the top of all that the majority of vehicle is in a severely precarious condition, is old and lack mandatory security devices; in many cases, the vehicles used are simply inappropriate for this type of service (Fig. 8).



Fig. 8: Precarious conditions of the vehicle used in Rural School Transport [21]

In the national survey organized by Ceftru and FNDE [20], information from over 2.200 municipalities was collected, which showed that the average age of the vehicles used in rural school transport is over 15 years (Fig. 9). In all regions of the country vehicles with age over 70 years were also

identified.

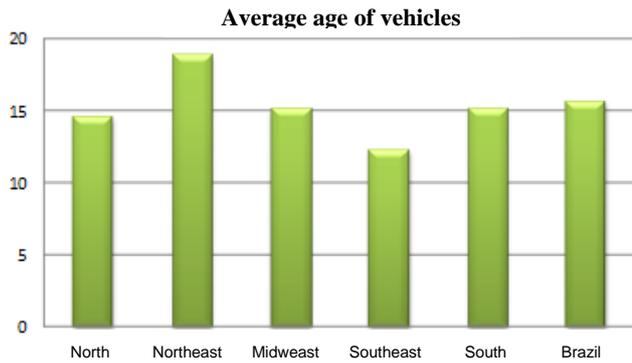


Fig. 9: Average age of STER road vehicles [20]

The rural school transport uses a diversity of means of transportation and types of vehicle, as road vehicles and water transportation as well non-motorized transportation (Fig. 10)



Fig. 10: Means of transportation and vehicles used by the rural school transport [21]

In the pie chart depicted in the Fig. 11 it can be seen that more than 20% of the trips are made in inappropriate vehicles for school transport, as trucks and pick-ups, which at most are subject to some sort of adaptation in order to embark the pupils.

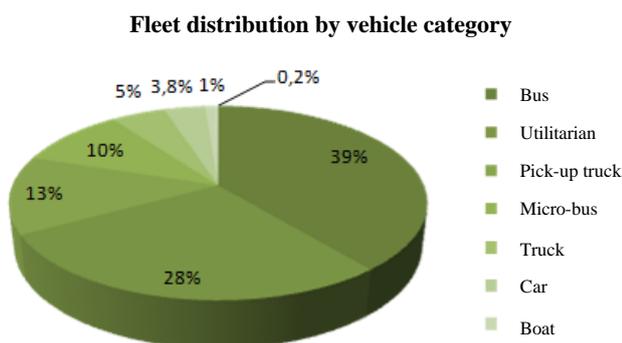


Fig. 11: Distribution of the fleet used by rural school transport by vehicle category [20]

Additionally, the vehicles ride in the average with a number of passengers 1,2 times above their capacity (Fig. 12) [25].



Fig. 12: Occupation above capacity in the vehicles in rural school transport [21]

## VI. CONCLUSIONS

The Brazilian rural communities present a strong dependence from free of charge public services supplied by the authorities, and they are guaranteed by Brazilian Law. But due to the large dimensions of the country, this fulfillment of the targets are still hindered. This spatial aspect and also the spatial policies of the government affect severely the population inhabiting isolated rural areas.

The present paper has analyzed the particular situation of the system for elementary education in the rural areas in Brazil, whereby along the poor quality aspects of the school system the long distances and the difficult accessibility conditions hinder the population to fruit from the services they need and even contributes to a still high dropout rate and permanence of low educational levels. A debatable albeit well-intended nucleation policy for the school system in the rural areas has even worsened the situation with respect to the physical accessibility to the school.

In this context, the school transport system has a key role to at least lessen the difficulties of school access. Some reported policies are bringing progress in this service, although it cannot be alone bear the responsibility for the inconvenience of the school living in rural communities.

This paper is part of a more comprehensive research program on rural school transport, which was contracted by the National fund for Educational Development (FNDE) and brought up propositions for the melioration of the school transport infrastructure (especially with respect to the vehicles) and also of its management (planning, contracting and control of the services). These propositions will be reported in detailed manner in next contributions.

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