

## Study on the Modernization and Development of the Logistic Basis of State-Run Pre-university Education Units in Bucharest

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### Abstract

*The economic and political counter in our country has a marked impact on the quality of the educational act and the material equipment of the pre-university education units.*

*This article addresses the issue of change in the field of education as well as the important drivers for change.*

*Changes in the organization of the national education system and the reform require effective management of the way schools are run and organized, both in terms of the quality of teaching and in terms of modernizing and developing the logistical basis of educational establishments.*

*The present paper is a needs analysis of the modernization and development of the logistic basis of the pre-university education units in Bucharest, as well as the identification of factors that determine the quality and efficiency of the management of school institutions.*

**Key words:** Equipment, budget, resources, education, planning

**J.E.L. classification :** I20

### 1. Introduction

The school, regarded as an institution with its own organizational culture, is the place where the educational process is continuous, both for students and their teachers. In Romania, the legislative framework governing the financing of pre-university education is the National Education Act No 1/2011 and the Decree No 169/2019 for amending and supplementing the Government Decision No 72/2013 on the approval of the methodological norms for determining the standard cost per pupil/preschool and establishing the basic financing of State pre-university education establishments, Which is provided from the state budget, from amounts broken down from the T.V.A. by local budgets, based on the standard cost per pupil/preschool.

For the financing of national education, a minimum of 6% of the gross domestic product of the year is allocated from the state budget and local public authorities budgets annually. In addition, educational establishments and institutions can obtain and use their own revenues autonomously.

According to the national Education Act No. 1/2011, as amended and supplemented later, the State provides basic financing for all pre-school children and for all pupils in the primary, secondary, vocational and upper secondary education of the State, private or accredited denomination, as well as for students in the special post-secondary education of the State. The basic financing is made within the standard cost per pupil/pre-school, according to the methodology developed by the Ministry of Education and Research.

The Ministry of Education and Research has the right of initiative in the fields of financial policy and human resources in the field of education and collaborates with other ministries, local authorities, associations representing the authorities of local public administration, parents' representative associations and associations

The basic financing approved annually by the state budget law is distributed among communes, towns, municipalities and sectors of Bucharest by the general directorates of the county public finances and the Bucharest Municipality, with the technical assistance of the county school inspectorates and the School Inspectorate of Bucharest Municipality.

## 2. Literature review

The quality of the educational act is influenced by the curriculum, the relationships that the school has with the Community (local councils, parents, economic agents), and the resources available to it:

- human resources, as well as continuous training and development of teachers in pre-university education, directorate for the institutional development of the school;
- financial resources as an investment in quality educational management;
- modernizing and developing the logistic basis of educational establishments, context of achieving educational objectives.

Infrastructure is defined as a fundamental relations system of a macro-system, which shows the importance of all elements supporting the quality of education delivered in a school. Moreover, "education and training infrastructure is a key factor in the education process, which has a direct effect on pupils" (*Strategy on modernizing Education infrastructure, 2017-2023*, <https://www.edu.ro/consultare-public%C4%83-strategia-privind-modernizarea-infrastructurii-educa%C5%A3ionale-2017-2023-proiect>).

As Romania "benefits" from low investment in education, an integrated approach is needed to prioritize infrastructure investments: It must meet demographic, social, financial, economic and educational challenges.

There are regulations for the functioning of school establishments, their accreditation and periodic evaluation, which concern:

- "Suitability of the number of classrooms, laboratories, school workshops, conference rooms, inter alia, to the projected school plan.
- The suitability of laboratories, cabinets, school workshops and conference rooms, inter alia, at the level of education, the profile of the educational establishment and the subjects covered by the school plan.
- Existence of own space for the school library/information and documentation center or agreement on the use of the library in another educational establishment.
- The existence of communication and information technology.
- The accessibility of school spaces and auxiliary spaces for all pupils, including those with special needs" (Nedelcu et al, 2009, p.8)

The physical basis of schools (buildings, equipment of classrooms, presence of laboratories, sports halls, provision of educational facilities and curriculum-secondary schools) is important for the quality of teaching. The importance of material resources is enhanced by the professional quality of the human resource (teachers who carry out teaching using teaching materials), but also by the management carried out by the director of the educational establishment.

An integrated management vision of the school's educational offer, of the human, financial and material resources of the school adds value to the quality of the teaching act achieved in that school. This is an important variable in the performance of school.

## 3. Research methodology

In order to improve the management activity of the teaching units under the authority, the Bucharest School Inspectorate elaborated a study, which had as main objective the analysis of needs on the modernization and development of the logistic basis of the educational units in Bucharest, focusing on the following directions:

- I. Physical wear of buildings, intended for educational establishments
- II. The material base of educational establishments
- III. The operating hours of educational establishments

IV Situation of schools where rehabilitation/expansion projects are carried out in the school year 2019 - 2020

V. Risks and challenges in the school funding project

The study was implemented in 419 educational establishments in Bucharest, and the respondents were their managers. Considering the time and budget limitations, but also because of the large geographical area of the research (6 sectors of the City of Bucharest), the method selected for contacting the potential response, was the method of sending the questionnaire by e-mail. The questionnaire was complemented by explanations of the importance of the research. It has been available online. The questionnaire was submitted at the educational establishments and centralized between January and February 2020.

The final number of respondents was 412, representing a response rate of 98%. The sample shall cover all levels of pre-university education (kindergarten, primary, secondary and high school) as shown in Table 1.

Table no. 1 Numerical structure of state-run pre-university education units in Bucharest, 2018-2019 school year

State school establishments, school year 201-2019		S1	2.2	S3	S4	S5	S6	TOTAL Bucharest
Kindergartens	mass education	18	20	21	18	20	27	124
	special education	1						1
	Total	19	20	21	18	20	27	125
Secondary schools	mass education	26	29	29	23	25	25	157
	special education	4	3	1	3	1	1	13
	Total	30	32	30	26	26	26	170
High schools	mass education	26	23	14	14	9	14	100
	special education		2					2
	Total	26	25	14	14	9	14	102
Professional schools	mass education							
	special education		2				1	3
	Total		2				1	3
Post-secondary schools	mass education		1					1
	special education							
	Total		1					1
Children's clubs		1	1	1	1	1	1	6
Sports clubs		1	2	1	1	1	1	7
Art schools		2	2	1				5
Total units	mass education	74	78	67	57	56	68	400
	special education	5	7	1	3	1	2	19
	Total	79	85	68	60	57	70	419

Source: State of Education in Bucharest, 2018-2019 school year

#### 4. Results

The collection, processing and analysis of information and the research areas concerned have produced the following results:

**Direction I. Physical wear of buildings (buildings), intended for educational establishments.** The classification of buildings, with the destination of educational units in Bucharest, was followed by the construction year. In order to carry out this analysis, the first phase identified the total number of educational units distributed across all 6 sectors in Bucharest (Table 2), out of those that answered the questionnaire (412 units).

Table no. 2 Sector breakdown of state-run pre-university education units in Bucharest

Educational establishments/ Sector	Expressed in numerical terms	Expressed in %
TOTAL	412	100%
District 1	73	18 %
District 2	90	22 %
District 3	65	16 %
District 4	62	15 %
District 5	54	13 %
District 6	68	16 %

Source: Autors' calculations

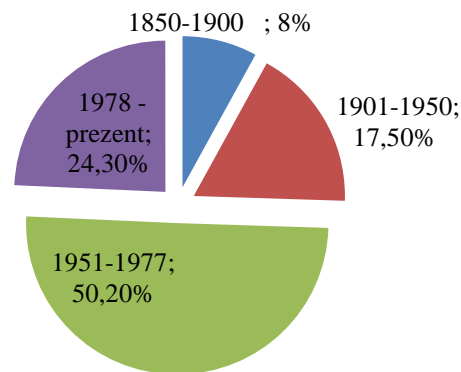
As the school must be primarily a physical space for ensuring the safety of pupils and teachers working in it, this research has aimed at centralizing educational establishments after the year of construction, including the buildings built in the next periods (according to Table 3 and Figure 1).

Table no. 3 Educational establishments in Bucharest after the year of construction

Year of construction	Educational units/numerical	Educational establishments/ expressed %
TOTAL	412	100%
Between 1850 and 1900	33	8 %
Between 1901 and 1950	72	17,5 %
Between 1951 and 1977	207	50,2 %
Between 1978 – present	100	24,3 %

Source: Autors' calculations

Figure no. 2 Distribution of educational units in Bucharest after the year of building construction



Source: Autors' calculations

According to the data obtained, only 24,3% (100 schools) of school premises are new buildings built after the 1977 earthquake in Bucharest, the remaining 75,7% (312 schools), old buildings, 8% of which (33 schools), they represent heritage buildings more than 100 years old

The results show we are concerned about this phenomenon which can be explained by the lack of interest and involvement of all decision makers (local town halls, inspectorates, school management, parents, other partners with an impact on education). On the allocation of funds for the construction of new pre-university education establishments, so necessary in Bucharest.

**Direction II. The material base of educational establishments.** The questionnaire included a section dedicated to the material equipment of educational establishments, covering the following aspects – number of buildings, number of laboratories existing in the school, if the school has a sports hall (distinct body of the building), if it has a sports base, canteen and dining room. The results obtained have been centralized and are summarized in Table 4 (4.a,4.b, 4.c, 4.d).

*Table no. 4.a Material base - building bodies*

<b>Building bodies</b>	<b>Educational units/numerical</b>	<b>Educational establishments/ expressed %</b>
TOTAL	412	100%
1 building body	229	55,6 %
2 building bodies	121	29,3 %
3 building bodies	55	13,3 %
More than 3 bodies	7	1,8 %

*Source:* Autors' calculations

It can be noted that the share of units with a single building body is 55,6% of all educational establishments, whereas on the opposite side units with more than 3 building bodies represent a low percentage, i.e. 1,8% (7 units).

*Table no.4.b Material base - laboratories*

<b>Laboratories</b>	<b>Educational units/numerical</b>	<b>Educational establishments/ expressed %</b>
TOTAL	412	100%
They have no laboratories	119	29 %
1 - 2 laboratories	93	23 %
three to four laboratories	96	23 %
more than 4 laboratories	104	25 %

*Source:* Autors' calculations

The analysis of the results, shows that in 29% of the schools in Bucharest there are no laboratories, an indicator that can be explained by the fact that pre-school establishments (kindergartens) are included here. Although schools have laboratories for the best course hours, they are often not used for their intended purpose, because in superimposed schools, laboratories shall be converted into class rooms where all the course hours of the class/classes concerned take place.

*Table no. 4.c Material base – Sports Hall (distinct building) / sports base*

<b>Body sport building</b>	<b>Educational units/numerical</b>	<b>Educational establishments/ expressed %</b>
TOTAL	412	100%
It does not have a body sport building	<b>229 units</b>	<b>56 %</b>
	125 kindergartens	30%
	104 schools	26%
1 body sport building	176	43%
2 body sport building	7	1 %

*Source:* Autors' calculations

According to the data obtained, educational establishments without a sports hall account for 26% of the total state-run pre-university education establishments in Bucharest (excluding kindergartens). Pupils and specialized teachers at these facilities shall take physical and sporting education classes in poorly equipped classrooms and not suitably sized in terms of the number of pupils and the physical activities they perform.

Table no.4.d Material base – canteen and dining room

Material basis	Canteen (numerical and %)	Dining room (numerical and %)
Do not have canteen/dining room	276 (67 %)	263 (64%)
I have the canteen / dining room	136 (33 %)	149 (36%)

Source: Autors' calculations

From the statistical data stored, it would mean that on average 30% of the educational establishments in Bucharest (both primary and secondary) have canteens and dining rooms, but this percentage is not relevant, The Bucharest city is known to have 125 pre-school units in place, which are equipped, by their activity specificity, with the SIS dining room. This means that only 11 units (3%) have canteen and 24 (6%) educational establishments (other than kindergartens) have the dining room.

This phenomenon is a worrying phenomenon and has no great prospects for the expansion of the "School after School" project to all educational establishments in Bucharest. The School after School program is a complementary program to the compulsory school program, which offers opportunities for formal and non-formal learning to enhance skills, to remedy and to accelerate learning through educational, leisure and leisure activities. This is a project of the Ministry of Education and Research, regulated by OMECTS No 5349/2011, amended and supplemented by OMEN No 4802/2017.

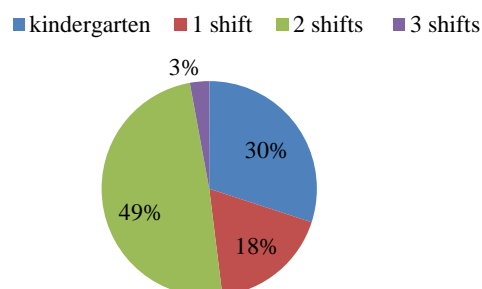
**Direction III. The operating hours of educational establishments.** This direction targeted in the research under study has allowed us to indentify to what extent possible, that in an average time horizon, we can implement the **"School in one shift" project**. The following data were centralized following the replies received under this section (Table 5 and Figure 2).

Table no. 5 Number of exchanges in which educational establishments operate

Number of shifts	Educational units/numerical	Educational establishments/ expressed %
TOTAL	412	100%
1 shift	73	48,1 %
2 shifts	202	49 %
3 shifts	12	2,9 %
Kindergartens	125	30%

Source: Autors' calculations

Figure no. 3 Number of exchanges in which educational establishments operate after level of study



Source: Autors' calculations

As can be seen, only 73 educational establishments (excluding kindergartens) operate in a single shift, at 18%, and more than half of primary, secondary and secondary schools operate in 2 or 3 exchanges. The results obtained under this section, combined with the small number of educational establishments built in recent years, justify the overcrowding of schools in Bucharest by the lack of investment projects in the construction of new educational establishments, which would allow courses to be organized in one exchange and more leisure activities with pupils.

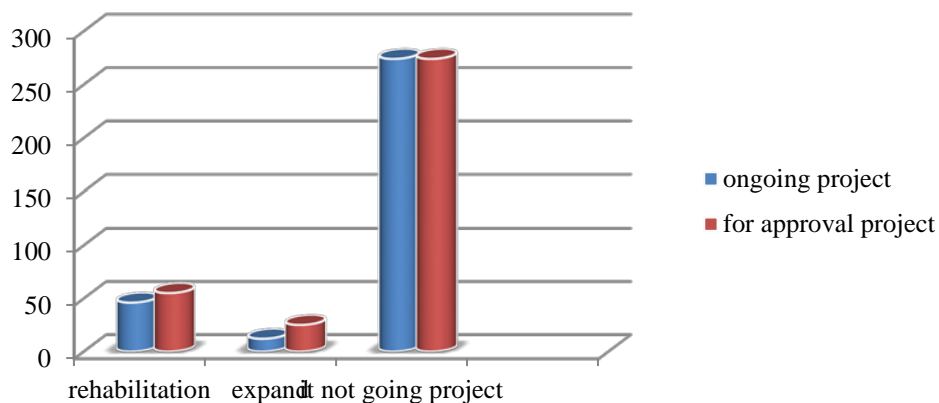
**Direction IV. Situation of schools where rehabilitation/expansion projects are carried out in the school year 2019-2020.** As educational establishments can attract investment funds, for rehabilitation or expansion, allocated from the budget of the local councils of the 6 sectors in Bucharest, we consider this is a very important one, as it highlights the cite of the managerial act at the level of the education organization's leadership. (Table 6 and Figure 3)

Table no. 6 – State of rehabilitation/expansion projects in schools – 2019-2020 school year

Types of projects		
Rehabilitation	In progress	46 (11,2 %)
	For approval	55 (13,3%)
	<b>Total</b>	<b>101 (24,5%)</b>
Expand	In progress	12 (3 %)
	For approval	25 ( 6 %)
	<b>Total</b>	<b>37 (9%)</b>
<b>It not going project</b>	<b>Total</b>	<b>274 (66,5%)</b>

Source: Autors' calculations

Figure no. 4 State of rehabilitation/expansion projects in schools – 2019-2020 school year



Source: Autors' calculations

As can be seen from the results, in 24,5 % of the educational establishments in Bucharest in the school year 2019-2020, rehabilitation works are being carried out and only 37 schools (9%) are carrying out expansion projects - projects approved in 12 schools and projects submitted for approval in 25 schools. Approving and carrying out projects to extend educational establishments would allow them to conduct their classes in only one exchange and/or to uncover the large-scale classes of pupils. The survey results show that there is no overall common objective of investing in the modernization and development of the logistic base of schools, both from managers of many educational establishments and from the sector's municipalities, there is no overall common objective of investing in modernizing and developing the logistic base of schools, which is also demonstrated by the fact that in 274 (66,5%) schools no moderation/enlargement project is carried out in the school year 2019-2020.

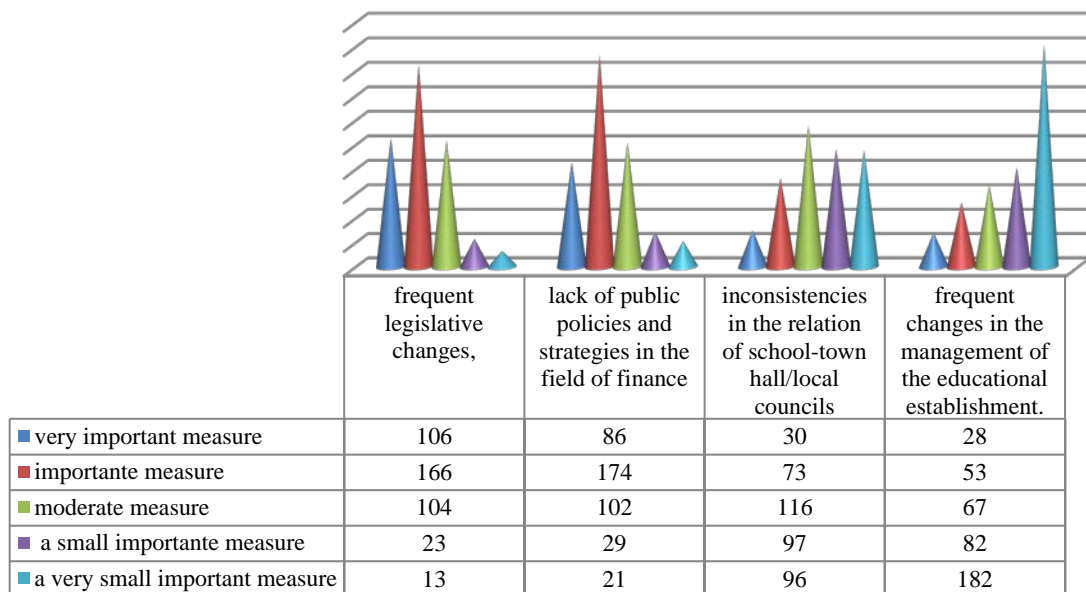
**Direction V. Risks and challenges in the school funding project.** In the School's Institutional Development Plan (PDI), drawn up over a period of 4 years, the Director of the educational establishment can, in addition to the objections and educational standards that the school wants to achieve, propose targets for investment in the modernization of the logistics and the material base of the educational establishment. The school funding project is a milestone in the drive process of the unit. The risks arising from the school funding project, may lead to disruption in the consistent management process.

The most important risks and challenges identified, are as follows (Figure 4): frequent legislative changes, lack of public policies and strategies in the field of finance, inconsistencies in the relation of school-town hall, local councils, frequent changes in the management of the educational establishment.

From the data collected, it is noted that of thye 4 indicators considered, the frequency of legislative changes has a very significant and significant impact on the school funding project (272 schools) and the opposite, very little and to a small extent, 264 school managers consider that frequent changes in the management of the educational establishment do not represent a risk in the school funding project.

The absence of public funding strategies and policies is also seen by school directors as a risk factor of high importance in the school funding project. The same data shows that the school has a good relationship with the city hall and local councilor, as this indicator is not considered by managers, with a high risk potential for the future financing.

Figure no. 5 Risks and challenges in the school funding project



Source: Autors' calculations

## 5. Conclusions

The purpose of this research is to determinate the relationship between the performance of the educational act and the modernization and development of the logistic basis of the state-run pre-university education units in Bucharest. The research identified possible risks affecting the reduction in pupils' learning performance. Among the risks identified, the most commonly mentioned by educational managers are: lack of continuity in high-level activity of decision-makers, the high fluctuation of the school population at Bucharest city level, excessive bureaucracy of documentation necessary to submit financing projects for investments in rehabilitation/expansion of schools and unfair competition from private education establishments through double funding (state and tax funding).



## 6. Acknowledgement

The research has a positive impact on the actors involved in education (Bucharest School Inspectorate, education units, policy factors) , because the results of the research will be used in the future directions and strategies of educational management implemented at Bucharest Municipality level.

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