



ROMANIA
MINISTRY OF NATIONAL EDUCATION
“1 DECEMBRIE 1918” UNIVERSITY, ALBA IULIA
DOCTORAL SCHOOL
ACCOUNTING

SUMMARY OF THE DOCTORAL THESIS

*The Innovating Role of Managerial Accounting in the
Performance Assessment in the Romanian Pre-
University Education System*

Thesis advisor:

Prof.univ.dr. Sorin C. BRICIU

Ph.D. Candidate:

Ec. Raul Ioan BURDEA

Alba Iulia

2014

CONTENTS:

1. Motivation, topicality and appeal of the research theme.....	3
2. The economic and social context of the research.....	6
3. The epistemological positioning and the delimiting of the area of research.....	7
4. The hypotheses of the research.....	10
5. The methodology of the research.....	11
6. The general structure of the research.....	13
7. The synthetic contents of the research.....	15
8. Conclusions, personal contributions, limits and perspectives of the research.....	18
9. Selective bibliography.....	26

THE INNOVATING ROLE OF MANAGERIAL ACCOUNTING IN THE PERFORMANCE ASSESSMENT IN THE ROMANIAN PRE-UNIVERSITY EDUCATION SYSTEM

Key words: *education system, budgetary financial resources, financing, allotment, budgetary constraints, performance, managerial accounting, optimization, costs, decentralization, autonomy, quality, learning outcomes, reform, expenses, financial indicators, performance assessment, education efficiency, cost-benefit analysis, investments, reliability centers, income and expenses budget, FAM, RCM, statistical modeling, cost function.*

1. Motivation, topicality and appeal of the research theme

After the 90's, the Romanian education system has gone through a series of transformations, with positive and negative effects, but the goal of these transformations was not to conceptually redefine this system according to the needs of a society in a continuous dynamic. Redefining the education system must start from the real needs of the society, embodied in values, knowledge or skills.

The limit of the budgetary financial resources, the problem of financing the Romanian pre-university education, as well as the allotment of financial resources is, in recent years, a major issue of the education institutions, confronted with major budgetary constraints and also of the institutions through which the financing is conducted.

Throughout the six years of my management of the accounting-financial department of the Satu Mare County School Inspectorate, I was able to identify in detail the major issues of the pre-university education system at the county level, problems that can be generalized to the national level. Thus, we could determine the research area and we were able to substantiate the main working hypotheses.

Presently, the allotment of the financial resources is done according to a single parameter – cost per pupil – determined at the national level, *the interest for the development of the present research theme was generated by the need to determine an equitable way of financing the education institutions, according to their specific characteristics*. In the meantime, *we wish to analyze efficient ways to use these financial resources allotted*.

Furthermore, we mention that the choice of Satu Mare County as object of the case study was made due to the direct involvement of the author in the management structures of the Satu Mare County School Inspectorate.

The education system is one of the strategic areas at the social as well as the economic level, if we consider the importance of the human resources within it. Therefore, we consider important the theme of the thesis “*The Innovating Role of Managerial Accounting in the Performance Assessment in the Romanian Pre-University Education System*”, from a theoretical as well as a practical point of view.

From the theoretical point of view, the thesis wants to add to the area of defining and assessing the performance of the pre-university education system through methods specific to managerial accounting, showing the importance of these methods and establishing a general framework to approach this theme. From the practical point of view, the results of the research offer a concrete answer to the questions regarding the optimization of the means of the financial resources allotment as well as of those concerning the performance quantification at the level of the education system, in terms of costs.

There is a significant difference between the political speeches or the erudite discussions concerning the education systems in general and the actual situation in our country. This is one of the reasons why the Romanian education system is confronted with unexpected challenges, to which the response reaction is sudden and, most of the time, accidental.

In this context, it is explainable why the reforms have successes that alternate with stagnations. Consequently, the position and the role of the education institutions is uncertain and changing. This is a consequence of the gap between speeches and reality, and occasionally, there is a big difference between education policy and its promotion in the socio-economic context of the moment.

Romania has taken a step towards the decentralization of school management with the introduction of the financing per pupil, beginning with January 2010. The change was rather dramatic, if we consider the previous financing system, when the headmasters did not influence the budget in any way. The old system was very convenient, meaning that from the school's perspective, the teachers were a free resource: as long as there were enough pupils to justify a new class, the salaries of the teaching staff (and expenses associated to these) were provided by the government. In this context, the headmasters had no interest in organizing larger classes and did not worry about certain compromises concerning the teaching staff (hiring younger teachers, more inexperienced, but paid less than more experienced and better trained teachers, paid better according to the valid regulations).

The final objective is in fact the achievement of a superior quality level in education (through giving more accountability to local actors in making decisions). The change was meant to introduce a system of incentives for the schools in order to ensure the improvement in using resources, an important part of the decentralization plan promoted by the respective ministry. The latter admitted that a more flexible financing must be a basic element of a coherent decentralization strategy. A greater autonomy for schools cannot be achieved if the resource allocation is subjected to rigid norms.

The change of the financing system will not, in itself, improve the quality of education; a fundamental change is needed, in the accountability relationships of the pre-university education sector. To this end, the political decision makers can use a wide range of options, more or less rudimentary, some of the quicker and easier to apply than others. All these options present risks and compromises that must be taken into account in order to prevent possible unwanted effects. Nevertheless, we consider that the basis for the accountability relationship is the assessment of the pupils through the learning outcomes, which will have to play a more prominent role.

Due to the complexity and the social implications generated by the Romanian pre-university education system, we consider that the theme "*The Innovating Role of Managerial Accounting in the Performance Assessment in the Romanian Pre-University Education System*" has **topicality** and its approach needs practical experience, research work, documentation and perseverance respectively.

2. The economic and social context of the research

The education system cannot be analyzed without understanding its position relative to other systems, for example the main economic and social systems.

The strong economic crisis in the first decade of the 21st century, together with the effects of the globalization and the pressures to use resources more efficiently, or the aging of the population lead to the implementation of the Europe 2020 strategy (17th June 2010) which presents to the member states a new economic vision meant to lead to a durable economy which can support social inclusion and cohesion. The main headings of the strategy concern an economic development based on innovation and knowledge, the durability of the economic growth and the encouragement of inclusion. For the education system, two objectives were set: the decrease of the school dropout rate to 10% and a 40% rate of higher education for the population of ages between 30 and 34.

At the national level, relative to the approach in the present thesis, there are two main objectives¹:

- Efficient investments in the education systems at all levels;
- An integrated approach which allows the improvement of the results in the education system, which imply the basic competences and reduce early school dropout.

Traditionally, education means transmitting and receiving knowledge, which leads to the forming of a public opinion and the preservation of the social consensus. Nevertheless, in the contemporary world there are new functions for the education institutions, one of them concerning the recruitment and the appointment of the individual in various roles or economic positions in society. This fact is also the reason for which, in developed countries as well as in countries in development, the education acquired special roles, decisively influencing the progress of society, facilitating but also at times hindering economic development.

General education, vocational education or lifelong learning have a vital role in the economic and social context of a country. From the perspective of the European Union, the

¹ *Tinerii și incluziunea pe piața muncii din România – nevoi, așteptări, soluții, obstacole*, disponibil la http://www.robcc.ro/media/diverse/FINAL_Studiu%20ANBCC%20-%20Tinerii%20si%20incluziunea%20sociala%20pe%20piața%20muncii%20ARIAL%20MARE.pdf

education system has to achieve three goals – ensuring quality and efficient education, giving access to education to all individuals and the international opening of the education system, which must be applied to specific components of the education system like the basic skills of the pupils, the continuous training of the teaching staff and the integration of the information and communication technologies, the efficiency of the investments, the mobility of the pupils, the civic education of the pupils, the learning of foreign languages or the flexibility of the education system in order to ensure education for everyone.

The national education law ensures a primary position for education in Romania and gives the fundamental elements of the education policies:

- The equal right of all citizens of Romania to access all levels and forms of education regardless of their social or financial status, race, sex, nationality or political position;
- The promotion by the state of the principles of a democratic education and the guarantee of the right to differentiated education, based on educational pluralism for the benefit of the individuals;
- The promotion by the state of the principles of lifelong learning.

The national education system is open, including public and private education, and it is free at the level of the minimum compulsory education (10 grades).

3. The epistemological positioning and the delimiting of the area of research

The starting point of the present scientific enterprise was the intention to enrich the knowledge in the approached field, quantified in elements of novelty and realism of the formulated hypotheses. The dimensions reflected in the results of the research, which constitute the novelty element, are theoretical as well as methodological and empirical. The approached problem, together with the ways of structuring the hypotheses and with the scientific precision of the demonstrations, constitutes the quality criteria of the thesis. The quality of the research is

ensured by the coherence between the objectives of the research, the research methods used and the qualitative and quantitative analyses², elements described in detail in the present thesis.

Using an epistemological method facilitates the thorough knowledge of the analyzed system as well as the logical structuring of the research from the stating of the questions concerning the causes of the studied phenomena and the ways to approach the research theme, to the statement of the conclusions that support the validity of the hypotheses as well as the conclusions concerning the possibilities to continue and further the research.

From the epistemological point of view, the critical analysis or the constructive reflection formed the basis for the drafting of the new scientific knowledge. The conclusions were supported with the help of observation and speculation, the main aspects of the interactive and iterative research. For specific techniques, for observation we have used data and information gathering, their categorization and inductive generalization, and for speculation we have used establishing hypotheses, modelling hypotheses and deductive generalization.

The accomplishment of the research was doubled by the epistemological reflection, present in the identification of the main characteristics of the achieved endeavor, specifically in establishing the positivist or constructivist trend that the research belongs to, in delimiting the research type and the used reasoning types.

In order to include the present research in one of the existing trends, we will present in short their main characteristics. According to the positivist trend, an objective reality of the studied medium is presumed, towards which the researcher is neutral, a quantitative methodology is used to test the hypothesis, deductive logic is used to draw up the conclusions and the results of the research are verifiable, confirmable and refutable³. The constructivist trend is based on the hypothesis of the progressive construction of the particular representation of reality and it is characterized by a reality that is built, by the lack of neutrality of the observer as well as by an interpretative and exploratory character of the research.

Taking into consideration the description of the two trends of research and our own endeavor, we can claim that the latter lays at the interference of the two trends. The initial stage

² Thiétart R.A. (1999) *Méthodes de recherche en management*, Dunod, Paris, p. 122

³ Martinet C. A. coord. (1990), *Epistémologies et Sciences de Gestion*, Economica, Paris, p.82

of the research is encompassed by the positivist trend. Subsequently, the applicative research determined its orientation towards the constructivist trend, reality was reconstructed and explanations and evaluations were generated.

The area of the research was delimited by the Romanian pre-university education system, analyzed at the national as well as at the county level, on the model of the system existing at the level of Satu Mare County. The object of the research was represented by the education institutions, with the allotment of financial resources at their level. The education institution as a provider of education services is relevant from the economic point of view as well as from the point of view of the social responsibility it holds, through the generated outputs. The approached area is of particular interest due to the significant differences between the cost per pupil established through regulatory documents and the concrete one, calculated at the level of the various education institutions. Thus are explained the current problems of the budgetary constraints existing at the level of the education institutions, which motivated us to start the research, in hope of identifying methods relevant and adapted to the present context for the differential allotment of financial resources.

The objective of the research is defined by the way in which the managerial accounting offers specific tools to handle and increase performance. Along the research we have tried to underline the way in which the science of managerial accounting can offer solutions to treat the budget problems at the level of the pre-university education, through the concrete illustration of the way in which its methods can be used and through the modelling of a cost function that allows an efficient allotment of resources. Thus, the result of the research endeavor is based on the analysis of the ways in which the managerial accounting offers solutions to the problems in the education system, on the concrete ways specific to the managements of the financial resources in the education system that can be applied, as well as on the ways in which the performance this system can be improved.

Although the process required time, in the beginning being contested, the methods specific to the managerial accounting gained ground in the area of the public systems, especially in education and health. This was facilitated by theoretical research which resulted in methods specific to these systems, frequently different from those applicable in the areas of private providers of products and services. Although the market of education services providers is

different from a classical market, determining the cost of these services and the identification of the input and output system of this market offers information that allows the efficient management of the resources of this system, financial, human or material.

Undoubtedly, determining the cost of an adequate education and the associated costs is a difficult but necessary process in every country. The existence of several methods does not facilitate the process, the difficulty lying in using one or the other, the choice of the best method being delegated to those who make the decisions concerning the allotment of the financial resources and who must also determine the best method relative to the national characteristics of the education system.

Regardless of the used method, the results must be interpreted not in terms of overfunding the inefficient education institutions, but of transforming the education system in such a way that the increase of its quality and of the efficiency of the education institutions can be ensured. Also, the allotment of the resources necessary for education must always take into account the efficient use of those resources. The existing gap between resources and needs is evident and it also resulted from the empirical study, an important cause being the way in which the allotment of the sums from the state budget takes place, based on formulae that cannot encompass the complexity and the specificity of all education institutions.

4. The hypotheses of the research

Scientific knowledge must originate in a series of questions that try to outline the hypotheses of the research. Thus, the research started from two main questions regarding the degree in which managerial accounting can be used in the pre-university education system through certain specific methods as well as the way in which using these methods contributes to the increase in the performance of the pre-university education system. Also, throughout the research supplementary questions were formulated concerning the definition of the notion of education system performance, the ways in which this performance can be quantified in accordance with different variables as well as the possibilities of modelling a function to substantiate the efficient allotment of financial resources to the education institutions.

Based on the previous questions, the research was directed by a set of hypotheses meant to scientifically relate the studied phenomena. Thus, the epistemological system of the research was built around the following hypotheses:

I1: There is a temporal effect that results in the increase of the deficit of resources relative to the needs of the education system.

I2: The notion of performance of the pre-university education system is much more complex than the notion of financial performance, and the other aspects of the performance have a significant effect its degree.

I3: Using methods specific to the managerial accounting singularized relative to the elements specific to the pre-university education system leads to the increased efficiency of the allotment of financial resources.

The present research was aimed not only to validate or invalidate the previously stated hypotheses, but also to create a complete picture of the approached problem, which allows the achievement of the set objectives. The coherence of the hypotheses and their conformity to the observed reality required several types of checks – from the point of view of logic, of their compatibility and of the experimental reality.

5. The methodology of the research

The analysis of the relevant literature identifies from the point of view of the methodology three research categories: pure or fundamental research, applicative research and empirical (technological) research. The fundamental and the applicative research are complementary. In the case of the fundamental research the results take the shape of inventions, discoveries or theoretical models of certain phenomena, while the applicative research generates solutions that explain the analyzed theoretical models. The research is completed by the empiric research, through which we test statistically various hypotheses or results obtained from the other forms of research. Thus the position of the empiric research is a positivist one relative to the studied neutral or causal phenomena⁴.

⁴ Savall H., Zardet V. (2004), *Recherche en Sciences de Gestion: Approche Qualimétrique*, Economica, Paris, p.62

Validating the hypotheses of the research was possible through using scientific reasoning in order to generate ideas from which conclusions took shape. The deductive, inductive and adductive reasoning were the specific forms of scientific reasoning used.

The deductive reasoning was applied by establishing hypotheses, selecting the data necessary to the methods identified as being adequate to the validation of the formulated hypotheses and determining the degree of validity of the hypotheses based on the logical deductions already made.

Based on the inductive reasoning, which gave new results at the theoretical level (norms or principles that can be extrapolated), we tried to identify rules derived from the observations of the object of study and to formulate hypotheses based on these observations.

The third form of reasoning, the adductive one, requires from the researcher a more or less conscious interpretation of the observations conducted on the object of the research. Because in the case of the inductive reasoning the discovery has an explanatory character and can be tested in order to formulate norms, it must take place before the adductive reasoning.

The present research used iteratively the first two forms of reasoning (inductive and deductive) during the observation of the studied phenomena and the drawing up of the conclusions, the analysis being made from general to specific and vice versa.

The case study was based on the data supplied by the Satu Mare County School Inspectorate as well as on the data supplied by the analyzed education institutions. Thus the analyses of the educational activity at this level, of the financing methods and of the performance of education system relative to the degree of financing were possible.

The main research paths were the documentary research and the applicative research. For the documentary research we used over 200 bibliographical sources, relevant books and articles of Romanian as well as foreign authors, legislation and resources available on the web. This type of research constitutes the basis of the applicative research, which provided detailed knowledge of the phenomena analyzed theoretically and allowed the assessment of the formulated hypotheses' degree of validity.

By analyzing the main trends of epistemology – positivism and constructivism – we can observe their link to qualitative as well as quantitative methods. The combined use of these methods is a qualimetric⁵ approach of the scientific endeavor.

Within the empiric study, we established the specific way in which an analysis of the costs in education must be conducted and we worked out a study model of the dynamics of the relationships between the cost per pupil, the performance of the pupils, the number of teaching staff and their salaries, the number of pupils belonging to minorities. As results, we validated the hypothesis that educating pupils belonging to minorities is more costly due to the small size of the classes and the high need of staff. Also, in the rural area the cost per pupil is higher. Another result is related to proving that managerial efficiency is reflected significantly in the decrease of the cost per pupil.

The results of the statistical modelling showed that reaching a certain level of performance does not necessarily require supplementary resources but an efficient distribution of the existing sums. The managerial efficiency is the one that can lead to the increase in the performance of the pupils, without the need to increase the sums invested in education. The central point of the research was the outlining of the general concept of performance of the education system as well as of the specific concept of economic and financial performance relative to the available resources, using qualitative methods of analysis.

6. The general structure of the research

The main objective of the research concerns the analysis of the performance of the pre-university education system through methods specific to managerial accounting, establishing the importance of their use and forming the basis of a general approach of this subject.

The particular objectives during the case study were:

- Establishing the techniques of statistical analysis of the performance of the Romanian education system relative to other education systems (macro-economic analysis), and

⁵ Savall, H., Zardet, V., (2004) *op. cit* , pag.103

means of defining the performance of this system at the specific level of an administrative unit (micro-economic analysis);

- Exemplifying the way in which the analysis can be made and evaluating the education costs with the help of the specific methods of managerial accounting;
- Determining the relationship between the input and output variables of the education system.
- Econometric modeling of a function of the cost specific to the education system.

The present research tried to identify the theories and elements that will lead to a scientific basis of the answers to the questions based on the established hypotheses.

The first question of the research was linked to the degree in which managerial accounting could be applied in the pre-university education system through specific methods. As shown in the theoretical part of the paper as well as in the case study, managerial accounting is the main tool in managing costs and performance, to this end being able to use general cost analysis methods like the cost efficiency analysis, the analysis of cost utility, the cost-benefit analysis, the cost feasibility analysis or methods for cost analysis specific to the education system, like the FAM, the RCM, the production function and the education associated cost function, etc.

The second question of the research was about the way in which applying the methods of management accounting to the pre-university education system contributes to the raise in performance of this system. Simultaneous to finding the answer to this question, there has been a theoretical fundament of the concept of performance in the education system as well as an exemplification of the way in which it can be quantified in relation to the variables specific to the system. Determining a function of the cost wanted to prove the way in which the performance of the education system could be increased through the efficient allotment of the available resources.

We consider that the performance indices of the school institutions used in their assessment do not offer a clear picture of their efficiency and do not allow an assessment of all the components of performance in education. Therefore, we need to use the specific managerial accounting methods in order to find a solution for the economic as well as the social issues.

The thesis was structured in five chapters, in which we studied closely known aspects of the pre-university education system as well as certain aspects less exposed to the public, the dimension and the impact of the change in the Romanian pre-university education in the context

of the decentralization of the financing system and of the promotion of an education policy based on performance as an indicator of the quality of pre-university education.

7. The synthetic contents of the research

The first chapter of our endeavor, *“The Pre-university Education in Romania – concepts, orientations, directions of the reform”* focuses on the problem of reforming the national education system through the consecutive implementations of several initiatives and specific processes, unfortunately, most of them lacking in the consistency and the perseverance necessary for a large scale reform. However, we must admit that there have also been positive tries, tremendous efforts and action plans, but despite them, the perspective of the education system is heterogeneous, like a mosaic, and in places contradictory⁶.

Romania has taken a step forward towards the decentralization of the management in schools when the financing per pupil was introduced, beginning with January 2010. The logic on which this type of decentralization relies is linked to the accountability of the school headmasters and the school autonomy. The new implemented financing system is a major improvement compared to the old system, namely: it is more transparent, it offers more flexibility in schools regarding the management of the resources in the schools (classes with more pupils) and in specific geographic locations (meaning that they encourage school consolidation) as well as it ensures an improvement in the equity from the point of view of the financing.

“Conceptual Approaches of the Managerial Accounting in the Context of its Application in the Pre-University Institutions”, the second chapter of the paper, shows managerial accounting as a primordial managing tool, needed for measuring, assessing and improving performance in schools. Our approach focuses on adapting the concepts specific to the managerial accounting in the competitive context of our days, to the activity in the pre-university education institutions, whose primary mission is to ensure education for the young population, to prepare future generations, to train young professionals, to quality teaching and research.

⁶ Crisan A. (coord.) (2006), *Patru exercitii de politica educationala in Romania*, Ed. Humanitas Educational, Bucuresti, p.42.

The expansion of the expenses with education and teaching, as well as the care for the public money, determined a more frequent monitoring of the costs, and the re-analyzing of the methods through which they are determined. In this context, it is very important to know the typology of expenses in order to link the expenses to the costs, to put into practice methods of the managerial accounting respectively.

The third chapter of our undertaking, “*Methods and Techniques of Managerial Accounting, Relevant for Performance Assessment in the Romanian Pre-University Education*”, focuses on the concept of performance in the pre-university education, having various connotations, according to the area it characterizes. But this must necessarily relate to the creation of value through the fulfillment of the established objectives, the result express according to the nature of the performance and the achievement potential, comparing the result with the reference basis or the competition.

The means of measuring performance has intrigued theoreticians and practitioners alike, by approaching the complex problematic of the performance managing systems, which also include quantification means. The traditional performance assessment systems, based on financial indices have proven their inefficiency beginning with the 80's when new approaches of management appear, like total quality management (TQM) or the just in time method (JIT). Because managerial accounting shapes the entity from the economic perspective, in order to reach the objectives of measuring performance⁷, it is obvious the primary role played by its methods and techniques in the undertaking concerning performance assessment.

Chapter four of the thesis, “*Methods and Techniques of Performance Assessment in the Pre-University Education*”, shows ways of performance assessment of the education system, from an economic, and implicitly, accounting perspective. They must begin by identifying and quantifying the system outputs. Since the pre-university education system works based on the public funds allotted, it is natural that it has a certain series of responsibilities assessed in terms of system outputs. Educational efficiency can be defined as the qualitative and quantitative education of the pupils, to which we add the development of society, of culture and of the work market.

⁷ Bouquin H. (2004), *Comptabilite de gestion*, troisieme edition, Economica, Paris, p.59

The goal of assessing performance within the education system from the point of view of economics is to monitor the way in which resource allotment takes place at the national, regional, local, etc., level, to analyze the factors influencing the costs structure of the system or of the education institutions and to investigate the manner in which the education financing system functions and its effects. The analysis of cost efficiency as well as the cost-benefit analysis is methods of assessing the used resources in the case of alternatives and quantification of costs. Unlike the method of cost and benefit method, within the analysis of cost efficiency we only take into account only alternatives whose outputs can be monetary quantified.

Whereas concerning the costs they can relatively easy to quantify, the same cannot be said about benefits. Determining the benefits of education starts from a philosophical approach to the goal of education and the ways in which it can be achieved. Since the Greek antiquity, education was considered as centered on the moral fulfillments of the individuals and the wellbeing of the society in which they live. Recent studies have shown that education contributes to a better performance of the individuals on the work market as well as to their health, promoting an active civic attitude and diminishing violence. It has been proven that educated people have the tendency to live more, the data showing a strong correlation between life expectancy and the level of education. Educated people tend to be more involved in civic activities and be happy.

The last chapter, *“Evaluation and Analysis of the Performance of the Satu Mare County Pre-University Education Based on the Methods of Managerial Accounting”*, follows two directions: on the one hand, the analysis of the current performance of the education system in Romania and on the other hand, proving the practical ways of applying the methods specific to managerial accounting in performance assessment and its improvement.

Choosing Satu Mare County as object of this case study was due to the direct involvement of the author in the managerial structures of the Satu Mare County School Inspectorate. We consider that this fact brings to the paper an obvious practical value and the possibility of it being seen as a reference guide in developing managerial tools for performance and its improvement.

For reaching a certain level of performance we do not necessarily need more amounts of money, but a redistribution of the existing sums in a more efficient way between the school institutions or a reorganization of the latter. One of the important ways of reducing the unit cost and at the same time reaching a higher level of education for the pupils is the rise in efficiency.

In other words, the best way to raise the pupils' performances in the absence of a rise in costs is the rise in productivity through managerial methods specific to the teaching activities.

8. Conclusions, Personal Contributions, Limits and Perspectives of the research

A) General conclusions

We think that economic development is impossible without fulfilling certain social conditions, among which changing the functions of the education institutions. Education plays a predominant role in ensuring and enriching the knowledge and individual skills, which facilitates finding a work place suitable to the education, meaning ensuring an adequate income. Any individual who is offered work opportunities in the area he lives will access these offers, adding to the economic development of the area in question. The lack of these opportunities forces the migration to other areas (from the rural to the urban area or the other way around), generating negative effects.

Setting up education institutions of agriculture specialty in the rural area is not viable since it is not guaranteed that it will lead to the economic development of that particular area, because the income from such a profession could be low, setting up such a school not being a sufficient provision for the economic development of the area in question.

We think that the Romanian education system needs massive investments but also mechanisms for their stimulation, because the underfinanced education system generates not only the insufficiency of the material facilities but also a low level of infrastructure, social exclusion, etc.

The old financing system was wrong in all its aspects:

- There was no stimulant in using efficiently the existing resources;
- It did not offer flexibility to the local actors, not being able to re-allot the resources where they were most needed;
- The process of financing itself was not transparent;

- The financing was inequitable on the horizontal (similar schools would get the same funding) as well as on the vertical (schools in difficult circumstances had to be financed differently).

A series of studies referring to the development of the human capital launched the hypothesis that primary education (level that actually ensures the literacy of the society) influences more the level of economic development than secondary or tertiary⁸ education. We consider this completely wrong, because primary education only provides basic and general information, insufficient for ensuring economic development.

Conditioning the payment of children's allowance on the participation to classes generates positive effects in the fight against dropouts, because for the majority of the poor families and/or of those with many children this represents the only income of the household. A similar restraint could be enforced by the local authorities concerning the guaranteed minimum income.

In addition to this, introducing the "school after school" systems for all the pupils in pre-university education could compensate the lack of the parents' financial resources and the lack of an adequate study environment. Not only could we ensure a safe area for the pupils but we could also create new work places (for primary school teachers, supervisors, educators, psychologists, etc.)

We applaud the measures taken towards raising the access to education for the children from underprivileged environments/families, but there still are a series of negative aspects concerning the functioning of the education system, which demand a coherent education strategy and inclusive education policies.

The development of the curriculum is one of the most extensive and important elements of the education reform initiated by the line ministry. This is one of the most difficult elements in the context of the education system reform. Giving this task to a research institute means that there will be an increase in the workload, at which point the institute will change its orientation significantly, at the same time as the rise in the research volume. We believe that such an approach generates useless delays and managerial difficulties between the promoters of the curricular development and the ministry. In many European states, developing the curriculum is

⁸ Anderson C. A., Bowman M. J. (1963), *Concerning the Role of Education in Development*, London, Collier Macmillan

the task of a distinct agency, specialized, and we believe a similar arrangement could also be the key to success in the case of our country.

In the Romanian pre-university education, there are all the necessary elements for the system to work properly. We have an efficient enough structure to support performance and we make reference to the functions that all its agencies fulfill. However, three key conditions must be met in order to ensure the structural efficiency of this system:

1. Avoiding the useless proliferation of the agents and at the same time ensuring a sufficient functional differentiation,
2. avoiding doubling the attributions and their overlap and
3. the placement of each function to the most suitable agency; in this context, the term of “suitable agency” designates an agency whose functions, among others, will create the most suitable environment for its performances.

The new financing system represents a major improvement compared to the old: it is more transparent, it offers more flexibility in schools regarding resource management, it is in such a way conceived that it encourages a more efficient allotment of the resources within the schools (classes with more pupils) as well as in certain geographic locations (meaning it encourages school consolidation) and it ensures an improved equity from the point of view of the financing.

The strongest threat is however the politicizing of education. We take into account a malign combination between the political instability of the governments and the excessive politicizing of the system. Romania has a multiparty political system, dominated by two major trends and several smaller ones. It is practically almost impossible to form a majority government. As a result, the changes at the level of the government are frequent and each change brings a new minister at the National Education Ministry, with new ideas and strategies for the education reform. Unfortunately, this instability, accompanied by a high degree of politicizing, brings downfalls in the education sector, not progress and performance.

The present research tried to identify those theories and elements that lead to a scientific fundament of the answers to the questions forms on the basis of the established hypotheses.

The first question of the research was linked to the degree in which managerial accounting could be applied in the pre-university education system through specific methods. As shown in the theoretical part of the paper as well as in the case study, managerial accounting is the main

tool in managing costs and performance, to this end being able to use general cost analysis methods like the cost efficiency analysis, the analysis of cost utility, the cost-benefit analysis, the cost feasibility analysis or methods for cost analysis specific to the education system, like the FAM, the RCM, the production function and the education associated cost function, etc.

The second question of the research was about the way in which applying the methods of management accounting to the pre-university education system contributes to the raise in performance of this system. Simultaneous to finding the answer to this question, there has been a theoretical fundament of the concept of performance in the education system as well as an exemplification of the way in which it can be quantified in relation to the variables specific to the system. Determining a function of the cost wanted to prove the way in which the performance of the education system could be increased through the efficient allotment of the available resources.

We consider that the performance indices of the school institutions used in their assessment do not offer a clear picture of their efficiency and do not allow an assessment of all the components of performance in education. Therefore, we need to use the specific managerial accounting methods in order to find a solution for the economic as well as the social issues.

The results from the empirical study validated the formed hypotheses, proving that there is a temporal effect that has as result the increase in the resource deficit of the education system, compared to the necessities of this system. Moreover, the theoretical fundament of the educational system general concept of performance proved its wide range and not only the importance of the dimensions that characterize performance, but also the way in which these dimensions contribute to increasing the degree of performance.

Another valid hypothesis was the one stating that improving the efficiency of the process of the financial resources allotment in the education system is possible by using the methods specific to managerial accounting, which can be singularized in relationship to the elements characteristic to the system.

We consider that the whole scientific endeavor not only validated the initial hypotheses, but also projected a broad vision of the issues approached, thus being possible for the research objectives to be reached.

A first conclusion refers to the fact that an efficient financing system for the school institutions must meet a series of qualitative criteria, like:

- transparency, accessibility and ease in understanding
- offering enough resources for the specific pupils populations and equity of the system, horizontally as well as vertically
- fundament on detailed costs
- minimizing the negative effects generated by the overestimation of the costs or of the errors from data bases reports
- minimizing the administrative costs concerning the development and the application of the financing system
- predictability and stability

The detailed analysis of the specific methods of the managerial accounting in managing the costs associated to the education system, revealed their advantages and disadvantages. However, regardless of the used method, the evaluation of the costs must the existing relation between the pupils' needs, the resources of the education institutions and the outcomes of the education process.

In addition to this, still regardless of the method used, it implies human judgment, which distances managerial accounting from an exact science. That is why we need an approach that diminished the subjectivity of the people involved in the shaping and developing of a complex model for the resource allotment, which starts from a clear definition of the adequacy of education, which specifies and assesses monetary the resources and the offered education programmes and which develops an equitable mechanism for the distribution of the resources.

Unquestionably, determining the costs of an adequate education and its associated costs is a difficult process but which needs to be practiced in every country. The existence of various methods does not facilitate this process, being difficult to use one or the other; choosing the best method is the task of the decision-makers concerning the allotment of financial resources, who need to determine the most suitable method in relation to the national characteristics of the education system.

No matter the method used, the results must not be interpreted in terms of overfunding the inefficient schools, but transforming the education system in such a way that it can ensure the

growth of its quality as well as the growth in efficiency of the schools. The existent inequality between resources and needs is obvious and it resulted from the empirical study as well, an important cause of this fact being the way in which the amounts received from the state budget are allotted, based on formulae that do not fully comprise the complexity and specificity of all the school institutions.

When we make an analysis of the invested resources in the sense of increasing the quality of education, this should not stop at the schools' current expenses, but also include the long term investments for the development of the communities, improving the quality of the workforce, etc. education plays a vital role in guaranteeing the access to information and developing the necessary skills for continuing the studies of the pupils at a university level, for achieving an increased productivity, for diminishing violence and crime, for raising the level of health of the population or its participation to the civic life.

As we have shown, the level of education quality offered by the school is associated in a positive way to the level of wellbeing of the communities; the schools located in areas with a low economic development and which face a high unemployment rate have pupils with low performance. The poor communities face problems regarding additional resources needed to finance education, maintaining their social and economic disadvantage, which cannot be surpassed except through additional investments from the state.

The effects of the failure of a poor quality education reflect in high economic and social costs, a raise in crime and civic doubt as well as that of the taxes needed to cover the expenses with health or social care for the families with very low income.

The legal and executive mechanisms of the state need to find an equitable way of distributing the sums allotted to education, which need to be flexible in order to correlate with the real necessities of the schools, only possible when the establishment of the financing means is based on objective realities regarding the lucrative and profitable investments in terms of adequacy, equity, predictability, effectiveness and efficiency.

Synthesizing to the maximum the theoretical and practical results obtained, we can say that **financing education means financing future!**

B) Personal contributions

The personal contributions in this paper have been theoretical as well as practical.

From the perspective of the contributions related to the theories approached, the personal contribution was positivistic when identifying the relevant literature. The constructivist nature of the personal contributions was given by the critical analysis throughout the research, which helped clarify some notions like the performance of the education system, performance indices, efficiency and effectiveness in the pre-university education system, costs specific to education or outcomes of the education system. Also based on the applied critical analysis we have systematized definitions and elaborated own charts to clarify various concepts.

Within the empiric study, we have proved the effective way in which an analysis of the costs in education should be done and we have created a model for the study of the dynamics between the existing relations between the cost per pupil, the pupils' performance, the number of teachers and their salaries, the number of pupils from minorities.

The results validated the hypothesis that educating minorities is more costly, due to the small classes and the necessity of more staff. Moreover, in the rural area, the cost per pupil is higher.

Another result is tied to proving the fact that managerial efficiency is significantly reflected in diminishing the costs per pupil.

The results of the statistic modeling showed that reaching a certain level of performance does not necessarily entail additional resources but an efficient distribution of the existent amounts. Managerial efficiency is also the one to raise the pupils' performances, without the need of additional funding invested in education.

Based on my own experience in the Romanian pre-university education, I have outlined a few recommendations that I consider of paramount importance for the positive evolution of the system:

- We need to keep the current structure of the sector, differentiating among highly specialized functions and placing them in the hands of specialized agencies. However, due to its very important role in the reform of the education system, as well as to the huge amount of activities it involves, the developing function of the curriculum must be placed in an independent agency and not within the Institute for education science.

- The ministry must organize a series of meetings between all its subordinate agencies, their goal being to review the current activity and to make the plans for the future. We must first identify all the additional areas, all the needs and opportunities for integration. Later, we should make and develop a plan for the coordination and the integration, which will set the foundation for future cooperation and collaboration.
- Furthermore, we need to set in motion the mechanisms to ensure a tight coordination between the subordinate organisms: regulated regions, periodic meetings between the Minister and the leaders of the subordinated agencies, to review the plans, to appreciate the progress, to set the plans in motion, to assess the results, etc.
- The ministry needs to improve its relationship with the NGOs and other interested parties. For this, we need vision and a well established mission, as well as a set of strategies.

C) Future Research Directions

The main limits of the research concern the lack of recent data at the national level, to make relevant comparisons between the characteristics of the Romanian education system and those from the European Union countries.

The poor access to the information specific to the education institutions was another limit of the research; at the level of the school there is no own system for the management of the unit costs at the level of the county.

As future research directions, we consider we require:

- To continue examining the relevance of the conclusions formed in this thesis, at the national level.
- To continue analyzing the existing relationships between the quality of education, the ways of distributing the financial resources allotted to education and the particular economic and social conditions of the various communities.
- To further study the interactions between the increase in the quality of education and the variations of the unemployment rate, or crime, of the health of the population and of the level of civic involvement.

- To develop a unified system of collecting the data regarding the impact of education on the social and economic level of the population, this can be used in performing the econometric analyses.