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***QUALITY DIMENSIONS IN HIGHER EDUCATION: MEASUREMENT  
POSSIBILITIES AND LIMITS OF ACCOUNTING INSTRUMENTS***

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*Abstract: My paper sets out to explore several aspects relating to specific dimensions of higher education quality as well as the possibilities and limits of main accounting methods and techniques. Highlights of quality assurance in higher education represent the background against which the limits of measuring quality indicators by means of accounting instruments are explored. Along these lines, my paper describes an original integrated approach of evaluation criteria for quality of standards.*

*Keywords: financing, education, quality, measurement, evaluation*

Higher education, quality of education and quality assurance are determining factors for the smooth running of all economic and social activities in our country. The unprecedented development of higher education in Romania, as well as the limiting availability of financial resources in both state and private universities, has impacted the quality of the educational process, quality assurance at the level of the minimum standards of reference, as well as the level of education financing. All these changes occurred in a period when Romania became a Member State of the European Union. In 1999, Ministers of Education from all European countries signed the Bologna Declaration, effecting a study cycles restructuring of the entire European higher education. Against this background, characterized by a strong desire to achieve the harmonization of the architecture of the European Higher Education System, ensuring a balance between income and expenditure in the field of education has become imperative in the joint effort to align Romanian higher education quality and performance to the standards required by the developed countries of the Union.

The ever more limited financial resources have directly influenced the funding size of higher education, evincing a conspicuous trend towards under-funding. Such under-funding requires that the academic communities address new better performing resource managing policies at local and national levels. In this context, the information provided by higher education institutions' accounting, in particular by management accounting<sup>1</sup> (through its operational tools on consumer resource centers), can become the basis for decision-making and improvement of all strategic and operational activities. We maintain that it can also

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<sup>1</sup>Oprea Călin, *Contabilitatea de gestiune*, București: Editura Tribuna economică, 2002.

contribute not only to optimizing allocation decisions and resource usage, but also to identifying and promoting well performing study programs, fields and programs of excellence in universities.

For the specific purpose of this paper, an extremely important question remains: *To what extent and through what mechanisms can the quality of the educational process be integrated into higher education accountancy and financing?* The answer to this question rests on the analysis of the results provided by a number of thirteen (13) Romanian universities (with regard to the comparative approach on financing) and to five (5) universities (with regard to the comparative approach on the cost per student equivalent unit). Such a comparative approach has proved relevant for the justification of the influence of quality indicators on the core funding size as well as of the qualitative component, reflecting aspects related to the cost per student equivalent unit in public higher education institutions of different size and structure.

A major aim of accountancy is to provide all the information necessary for the planning of economic programs, drafting of income and expenses budget, processing of patrimony data as well as for the elaboration of synthetic documents and accounting reports. Accountancy also provides information about the patrimony's structure and dynamics, financial balance and obtained results necessary for decision-making. In order to obtain operative, relevant and credible information throughout the entire process of economic activities, the continuous improvement of this function remains critical and imperative. State higher education institutions "receive" their financial resources from the state budget through a mechanism determined both by quantitative elements, represented by tuition free students, and qualitative elements, represented by the quantity and quality of scientific research, absorption degree of graduates on the labour market, etc. The contribution of each category of elements to budgetary allocation distribution is established by the Ministry of Education based on its clearly established development strategic objectives. Thus, universities' financial resources are retained in Class 7 synthetic accounts; Group 70, Symbol 751.01.00.33.10.05<sup>2</sup>, however they reflect neither accurately nor explicitly the contribution of the qualitative component of institutional financing, in what regards core funding and supplementary funding<sup>3</sup>.

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<sup>2</sup>Order of Delegate Minister for Budget nr.2021/2013 regarding amendment and completion of the Methodological Norms on Organising and management of public institutions accounting. Accounts Plan for public institutions and instructions for their use approved by Order of Minister of Public Finances nr.1917/2005.

<sup>3</sup> Law on National Education nr.1/2011; Official Monitor nr.18/10.01.2011.

For a better indication of some education processes qualitative aspects in state HE institutions' accountancy, we consider it useful and relevant to introduce several income accounts in the General Accounts Plan in which budgetary allocations are registered with the destination of core funding and supplementary funding<sup>4</sup> as per qualitative elements. Thus, all incomes obtained from each income source can be separately accounted for, representing a good information source for future decision-making in academic management with a view to increasing the contribution of the qualitative component to financial resources development. Through such an accounts plan administration, accountancy may represent the primary source of information that enables quality measuring of higher education processes and their contribution to HE financing in our country.

Moreover, management accounting provides analytic, detailed information regarding the efficient use of all operational factors in state higher education institutions. Based on this accounting, all product, work and service costs as well as their analytic results may be determined, including costs determined as per responsibility centers and/or various functions. Management accounting administration allows higher education institutions to obtain information regarding higher education organization and performance, particularly regarding the resource allocations as per responsibility centers and services, in our case educational and research services, as well as the obtained results.

In this context, the qualitative aspects of the higher education process examined from the perspective of financing education through its qualitative component intended for core funding and supplementary funding<sup>5</sup> represent a permanent challenge for academic management. All quality indicators (used to determine the level of allocations from public funds intended for core and supplementary funding<sup>6</sup>), also known as the qualitative component, are calculated by the Ministry of National Education (M.E.N.) and the National Council for Higher Education Financing (C.N.F.I.S.) (C.N.F.I.S.) based on the information, data, figures submitted by the universities at the beginning of each academic year. Based on such data, the Government allocates to each state university the core and supplementary funding<sup>7</sup>, differentiated as per quantity and qualitative aspects. This differentiation mechanism of funding and stimulating quality efforts is intended to gear the academic management to a proactive policy so as to eschew activity redundancy and under-funding.

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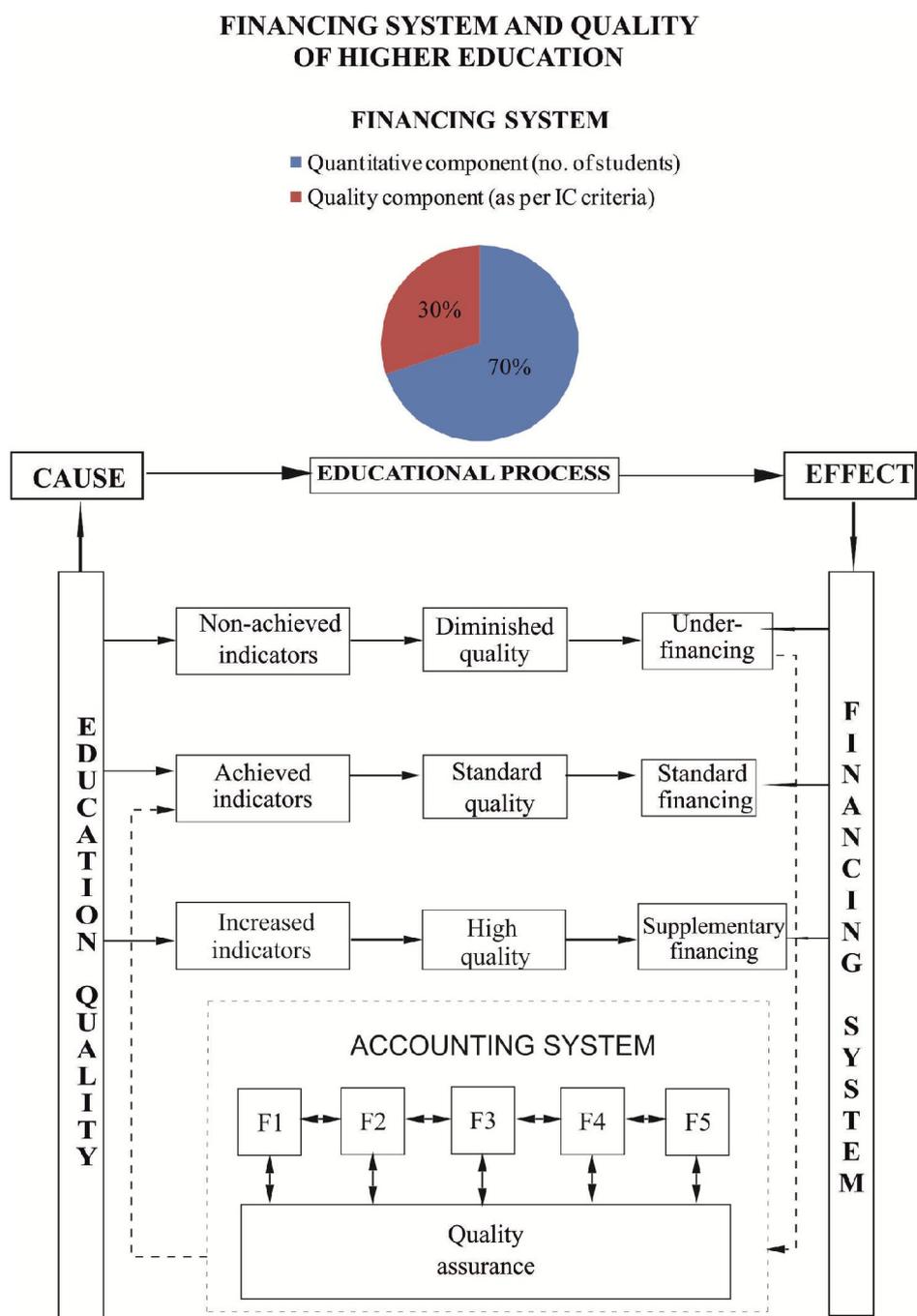
<sup>4</sup>Ibid.

<sup>5</sup>Ibid.

<sup>6</sup>Ibid.

<sup>7</sup>Ibid.

The financing mechanism for higher education in Romania in recent years has demonstrated the importance of reaching the minimum standards of quality indicators that determine the allocation of resources from public funds, in the form of core and supplementary funding<sup>8</sup>. The causal link between the quality of higher education and the financing of higher education in our country is illustrated in the following diagram:



<sup>8</sup>Ibid.

where the indicators represent:

F1 – data registration and processing function

F2 – information function

F3 – management control function

F4 – legal function

F5 – planning function

For the stimulation and development of a pro-quality academic culture, the identification of the mechanisms and tools to ensure the integration of quality in the accounting and financing of these educational institutions is necessary. Consequently, the integration mechanism of quality into funding must include a set of indicators that are apt to measure the quality of education, development and research as well as to provide the basis for the differentiated financing of higher education from public funds, according to the performance and excellence achieved by each institution. In this sense, we hold that, in addition to this set of indicators, it is also necessary to assign additional weightings to each indicator so that, by aggregation, the percentage share related to the core funding allocated on the basis of indicators may/will be attained. Similarly, in order to operationalize the mechanism of integration of education quality in the accounting and financing of state higher education, we consider it necessary to organize the accounting of revenue by means of the analytical accounts resting on the 751<sup>9</sup> account structure:

- 7510101 - Income from the classification of universities;
- 7510102 - Income from the hierarchization of study programs;
- 7510103 - Income from sciences and advanced technologies study programs;
- 7510104 - Income from joint supervision of Ph. D. theses;
- 7510105- Income from higher education institutions' active role played at local and regional levels.

Resting on the same principles, the introduction of a new quality indicator-IC18- representing the BA and MA graduates' employment degree in jobs corresponding to their specialization and of the average quality indicators CMIC, (which is the result of weighted

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arithmetic mean of all quality indicators IC1 ÷ IC17 with the level of achievement in the university in question) is, we hold, critically and additionally important. Thus, the average quality indicators:

$$CMIC = \frac{1}{30} \sum_{k=1}^{17} P_k \times IC_k$$

include

$P_k$  which is the relative weight of ICs out of a total of 30% of quality indicator

and

$IC_k$  which is the achieved value of IC- no. k in the university, ranging from 0 to 200%.

The use of these quality indicators, as complex components of scientific research in university allocations, are apt to stimulate public higher education institutions to enhance efforts in increasing the level of academic and research performance. Management accounting determines and influences academic and administrative management in strategic decision-making through another output indicator, namely the supplementary funding level per student equivalent unit. The cost structure in higher education must depend, on the one hand, on staff's motivation for excellence and performance, and on the standards for quality certification in higher education with respect to institutional capacity and support for students with outstanding performances or social disadvantage, on the other. Hence, in addition to those presented above, we argue that a more representative cost structure in higher education is to be maintained along the following lines:

- personnel costs– not to exceed the 61% level;
- costs for goods and services – not to exceed the 20% level;
- expenses for scholarships and other forms of student support– not to exceed the 8% level;
- share costs – not to exceed the 12% level.

Likewise, for a well-performing administration of all higher education activities, one particularly focused on the students' training performance and constant quality improvement of educational processes and scientific research, the above indicators may be all registered and regularly checked by means of a prospective "Balanced Scorecard" (BSC) dashboard.

By way of conclusion, the integrated approach of financing mechanism improvement, with a view to the quality of education and its contribution in the competition for accessing the budgetary financial resources granted by the Romanian State, includes and rests on: a) the

introduction of the General Plan of Accounts for higher education public institutions of revenue accounts formed on the 751<sup>10</sup> account structure; b) the introduction of a new quality indicator IC18, representing the BA and MA graduates' employment degree in jobs corresponding to their specialization; c) the introduction of the coefficient of the CMIC quality indicators, which is the result of weighted arithmetic mean of all quality indicators IC1 ÷ IC17 with the level of achievement in the university in question; and, last but not least, d) the introduction of a prospective dashboard to help improve academic and administrative management.

Accounting thus represents the primary source of information that makes it possible to measure the qualitative aspects of the educational process and management accounting can be an operational instrument for quality measurement and control of the educational process. Paraphrasing J Fr. Schär (1922) who says that accounting represents “the future’s indispensable counselor”<sup>11</sup>, it may be said that, by extension, in a patrimonial unit, where everything is in motion, accounting offers a future projection along a perfectibility trajectory.

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<sup>10</sup> Ibid.

<sup>11</sup> Schär, Fr., J., *Buchhaltung und Bilanz*, Ed. J. Springer, 1922.