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ABSTRACT

A group of French universities modified the NCHEMS accounting method for use in a study of its budget control procedures and cost-evaluation methods. The conceptual differences in French university education (as compared to American higher education) are keyed to the adjustments in the accounting method. French universities, rather than being competitive and relatively wealthy, are part of a strongly centralized national system; they therefore have less control over some variables. The social orientation of higher education is of less immediate importance than eliminating waste to increase effectiveness, and persuasive program budgets for resource allocation at the national level. The accounting systems, cost components considered, choice of direct or indirect cost allocation, and calculation of unit costs and use of results are compared for the original and modified accounting methods. (MSE)

METHODS OF COSTING IN UNIVERSITIES

BRIEF COMPARISON BETWEEN THE NCHEMS APPROACH* AND THE APPROACH USED BY THE FRENCH-SPEAKING RESEARCH GROUP ASSOCIATED WITH THE IMHE PROGRAMME

by
Claude Cossu**

Among the papers presented at the second general conference of Member institutions of the OECD-CERI Programme on Institutional Management in Higher Education, held in Paris from 20th to 22nd January, 1975 was a study by research group No. 2 (French-speaking group) on the theme: "Budget control procedures and methods of evaluating costs of activities and outputs in institutions of higher education".

The accounting method used in this study is very similar to the one developed by the National Center for Higher Education Management Systems (NCHEMS) at the Western Interstate Commission for Higher Education (WICHE) and it is surprising that the French-speaking group did not simply adopt it. The conceptual differences between educational systems in the United States and France may suffice to explain why a transfer would have called for considerable adjustments.

It is therefore worth reviewing the differences in accounting methods in the light of the conceptual differences in the two systems of higher education.

I. AMERICAN AND FRENCH UNIVERSITIES

Whether it is a public or private institution, the American university operates in a highly competitive environment. This is true not only of the way in which it recruits its students but also in the way in which it recruits its personnel.

The wealth of an American university therefore largely depends on its public image which itself depends on the resources it can command. In its cost accounting the university consequently has to consider items over which it has real powers of decision, at least as far as their allocation is concerned and the latter is therefore bound to have financial consequences. On the other hand, where it has no powers of decision on items whose alternative uses have no direct consequences to the university, those items may be ignored. Where the content is clearly determined, its use is also clear |Ref. (4), page 37|: "Validity of cost analysis is not a general issue. Rather, cost analysis must be related to the specific educational process which is being considered", and it is not a coincidence that the National Center for Higher Education Management Systems (NCHEMS), defined its objectives in the following terms:

> "To design, develop and encourage the implementation of management information systems and data bases including common data elements in institutions and agencies of higher education that will:
> - provide improved information to higher education administration at all levels
> - facilitate exchange of comparable data among institutions
> - facilitate reporting of comparable information at the state and national levels".

NCHEMS considers cost accounting as only one of the many elements providing information and assistance in decision-making or planning and integrates its results in such management resource prediction models such as R.R.P.M. |Ref. (6)|.

But French universities in the state system as defined by the Loi d'Orientation of 1968 are an integral part of a strongly centralised national system. Their human resources i.e. teachers and others and their capital resources are allocated to them under an almost entirely unilateral procedure while their cash resources which largely consist of public money are allotted annually under criteria of doubtful rationality. A French university's decision-making powers with regard to the total resources at its disposal are therefore practically non-existant in terms of volume |Réf. (23) pp. 8 and 9|. The most it can do is to allocate its funds as effectively as possible to meet a set of activities over which it has no control because it has no means of influencing student demand.

For this reason the approach adopted is to consider the cost items arising from the existence of the university instead of solely dealing with

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the items which it really is able to influence. It would hardly be an exaggeration to say that there are only fixed costs!.

In these circumstances the members of the group are inclined to regard the major problems of economic choice ("economic efficiency" of higher education, utility of extending courses of study, handling of socially oriented public expenditure, etc.) as remote issues, for their immediate concerns are primarily:

- from the internal standpoint: to analyse the items which form the "ex-post" costs in order to eliminate waste and increase the effectiveness of resource allocation in [Ref. (23) p. 8];
- from the internal and external standpoint: to set up a budget control system ensuring more efficient management and offering objective arguments, by the preparation of programme budgets, for resource allocation at national level under less empirical criteria. It is incidentally remarkable that the methodological work in connection with the planning of higher education [Ref. (33)] reflects the same approach.

However, both accounting methods have to meet the same basic requirements i.e. collect information in order to achieve more effective management even if the powers of decision are not at the same level and both have encountered the same methodological difficulties, particularly the difficulty of identifying outputs [Ref. (4) p. 19]. It is therefore logical that the principles on which the accounting structures systems are based should be largely similar.

II. COMPARISON OF ACCOUNTING SYSTEMS

The fundamental principle of both approaches (NCHEMS and the French study) is the same i.e. to describe and classify the different basic components of the institution in terms of their productive activity. There is nothing so strange about this approach by the French-speaking group which makes use of what is known as the "homogeneous sections" cost accounting method, a typically French conception (this method arose out of the work done by CEGOS* in 1927-28, stimulated by Mr Rimailho). The NCHEMS has also been guided by the above method as the key terms i.e. "cost centre" and "homogeneous activity" reoccur in the following definition [Ref. (16) p. 24]: "Costs need to be grouped in a classification system (i.e. cost aggregation structure) that identifies and categorises the activities of higher education institutions at a level of detail that results in cost centres that contain relatively homogeneous activities".

In both cases the elementary component is defined as the smallest fraction of the institution ensuring compatibility between two objectives i.e. homogeneous activity and possibility of cost identification. A comparison between the two definitions might be useful.

The NCHEMS definition [Ref. (16) p. 25] is:

"A *programme element* may be thought of as a collection of resources, technologies and policies that, through their integrated operation, produce goods or services, i.e. an output that is of value to the organisation because it contributes to the achievement of an institutional objective. The programme element represents the smallest unique collection of resources that are output – producing activities".

The definition of the French-speaking group [Ref. (23) p. 46] is:

"*Elementary unit of activity* (UEA): utilisation of the smallest set of resources co-ordinated in a process designed to produce one (or several) final or intermediate products, or one (or several) final or intermediate services".

The only formal difference arises perhaps from the express reference to the idea of institutional objectives in the NCHEMS definition but the terms of the French definition [Ref. (23) pp. 49-50] suggest that this idea is understood.

The classification themselves are largely similar [Ref. (7) pp. 31-81 and Ref. (22) pp. 54-58]:

- The NCHEMS "primary programmes" consist of three groups (teaching, organised research, public service) which are similar to the three groups of "directly productive activities" (teaching, research, public service) of the French survey. The contents are identical with two exceptions:
  1. continuing training is a public service activity in the USA and a teaching activity in France;
  2. the investigation into research activities is limited to organised research (contracts, programmes, etc.) in the USA whereas in France it includes private research.

This is largely a consequence of the options adopted with regard to the allocation of teachers among the various activities.

- The "support programmes" represent "indirectly productive activities" but the internal classification is somewhat different:

The four NCHEMS groups:

- academic support,
- student service,
- institutional support,
- independent operations,

underly a functional classification whereas the French distinction between service activities, administrative activities and miscellaneous activities focuses on an accounting criterion i.e. the measurability of output.

Another notable difference is in the degree of standardization:

- The NCHEMS has worked out a "programme classification structure (P.C.S.)" [Ref. (7)] i.e. a programme for the classification of the organised activities likely to exist in an institution of

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higher education. The purposes of this taxonomy [Ref. (7) p. 2] is:

"1. To provide a common framework for classifying and organising the program elements of higher education institutions.
2. To provide a structure that is usable by a substantial variety of institutions with a wide range of institutional objectives.
3. To retain, where feasible, compatibility with current institutional structures.
4. To facilitate the transformation of data between existing institutional accounts and the P.C.S.
5. To facilitate the exchange of institutional data and subsequent comparison and analysis."

Consequently, although the authors of the P.C.S. are aware of the structural variations from one institution to another they consider it essential to have an instrument for standard classification. However, they leave each institution free to work out a conversion procedure if it already has its own classification system.

- The French-speaking group has adopted the opposite standpoint [Ref. (23) p. 1]:

"From a practical angle, despite the desire of the members of the group it has not been possible to consider all situations in minute detail. They are too different and still too inadequately explored. The adoption of the 1968 Loi d'Orientation in France accentuated the differences in university and academic structures. As far as universities are concerned, the decentralisation of management at the level of units of education and research (UER) varies considerably from one university to another. As far as academic structures are concerned, courses with a credit structure exist in one and the same UER side by side with courses with a year structure. These points show that the *exhaustive* and detailed description of a standard university in which everybody could recognise his own institution was practically impossible to achieve in the present state of our knowledge".

The approach of the French study then proposes (pages 54-58) a global nomenclature, comparable to the P.C.S. "programme", a semi-global nomenclature which is still relatively aggregated and which it recommends for use in universities belonging to the group and finally, a detailed nomenclature, which "each university is left to define in the light of its partial or future classifications".

For this reason inter-university comparisons are only reliable at a relatively high level of aggregation. Furthermore, reference to the practical work published [Ref. (25)] shows that, in the pilot studies carried out by the 7 French participating universities, semi-global homogeneity was not achieved as far as the administrative activities are concerned.

The reason for this deficiency is probably that the classification of activities is structural and therefore too rigidly linked to the service organisation, whereas if classification were functional or by objectives it would have obviated this difficulty, as it may reasonably be assumed that similar functions are performed in all universities or that the number of possible objectives is not limited.

III. COST COMPONENTS CONSIDERED AND PRINCIPLES OF ALLOCATION

Both the NCHEMS and French group approaches claim the right to query information provided by the conventional accounting systems on the grounds that they propose to define economic costs. Both also show a certain flexibility in the sense that when certain values or certain criteria may lead to several estimates they leave the users a certain degree of choice.

Personnel costs

Both methods define personnel costs as gross salary plus fringe benefits and employer's contributions, whether social or fiscal. Although such information is easily accessible in the United States where personnel are remunerated by their university and the latter registers all these data in its ledgers, this is not the case in France. Most personnel consist of civil servants and these are remunerated from the Ministry of Education budget, with the result that information on the employer's charges has to be reconstituted. However, "the diversity of French social security schemes and the complexity of the methods used to calculate contributions necessitates a detailed analysis particularly as in certain cases the state in its capacity as employer does not actually pay any contributions but merely makes up any differences required to balance accounts" [Ref. (23) p. 34]. For example in the case of accidents at work calculations could only be based on the salary paid to replacements and this resulted in a considerable under-estimate, while the cost to the state of retirement pensions was considered nil as the updating calculations had shown that contributions from salaries seemed sufficient to ensure the payment of retirement pensions. The university has to take into account a total of 15 different rates of employer's contributions according to the status and level of remuneration of its employees.

The allocation of salary costs to the different cost centres is in accordance with principles based on similar theories. The NCHEMS has worked out a standard procedure for the analysis fo faculty activities i.e. the "Faculty Activity Analysis (F.A.A.)" [Ref. (11) and (20)]. This is in fact a direct time budget investigation on a weekly basis designed to show the work distribution of a teacher or research worker, with the x-axis representing the P.C.S. programmes and the y-axis the types of activities (teaching, research, administration, etc.). One may either investigate the entire population or a sample. This is the choice of the university and different weeks are selected to show the entire range of the duties performed as a function of the time spent on them.

As far as the primary activities are concerned (teaching, research, public service), 'salaries are allocated to cost centres on an individual basis in the case of personnel subjected to F.A.A. They are allocated collectively and on the basis of the F.A.A. global distribution rates for each discipline in the case of non-university personnel involved in primary programme activities. Costs of personnel associated with support activities but not included in an F.A.A. are directly allocated to the cost centre for which they actually work.

In theory [Ref. (23) pp. 66-67] the French-speaking group has systematically assumed the existence of a time-budget analysis for teachers and research workers the results of which are processed either individually or collectively by category at the choice of the institution. In practice, the initial empirical results were based on a presumptive distribution of the activity of teacher-research workers i.e.:

– teaching	50 %
– research	50 %
– administration	0 %

Only two French universities i.e. Paris X-Nanterre [Ref. (31)] and Paris I-Panthéon-Sorbonne [Ref. (32)] made a time-budget analysis designed to measure the average proportion of activity devoted by each rank of teacher to the three major categories of tasks but there seems to have been no ambition to go into greater detail. It should incidentally be noted that their methods of analysis are not identical and that the content of their questionnaires differed. This may be considered normal in experimental work but standardization would be required in any subsequent stage. With regard to the non-teaching personnel, the use of an organisational chart is advisable as most of the employees concerned work for a single cost centre.

Operating costs

The NCHEMS [Ref. (16) p. 55] acknowledges that the ideal method i.e. identification of the use of charges in the production process is probably difficult and expensive. It therefore suggests a number of different testing methods:

1. For primary activities: identification by an exhaustive or partial analysis of the activities to which each item of expenditure is allocated.
2. For primary activities: allocation of the costs of each basic unit (service, department) to cost centres proportionately to the allocation of the salaries subjected to F.A.A.
3. For primary activities: allocation on the basis of "activity crossover report" (showing the correspondence between the accounts of the institution and the P.C.S. accounts, this alternative being valid only if the usual accounting system registers the use of resources by programme.
4. For support activities: allocation of costs on the basis of "activity crossover report".

These alternatives whose degree of accuracy depends on the standard of the accounting system illustrate the difficulty of working out a costing system by programme or objective.

The French-speaking group, adopting a more structural method, has not encountered exactly the same type of difficulty, particularly as the administrative services appear to be less decentralized than the NCHEMS advocates. The methodology is not very explicit and the documents specific to each university have to be consulted to obtain an idea of the rules adopted. For example the University of Paris I gives a list of its allocation criteria [Ref. (25) p. 81], showing that the major proportion of the operating costs is exhaustively analysed while the other costs are analysed under similar criteria (e.g. breakdown of the cost of office supplies proportionately to the number of administrative employees in each service). Nevertheless, the extent to which the calculations cannot be gauged from a reading of the numerical tests carried out by the seven French universities [Ref. (25)].

Capital Costs

The costs generated by the ownership or use of capital goods are always more debatable than the other costs as expenditure is acyclical and precedes consumption. However, they must indeniably be shown in the costs of the activities of institutions of higher education. Two cost concepts may be envisaged:

- either the capital cost is limited to depreciation by wear and tear and obsolescence and will be measured by the amounts written off in the accounts for goods with a limited life, as goods with an unlimited life are assumed to have a nil cost;
- or the capital cost is an opportunity cost.

The view of the NCHEMS in phase I of its study is both restrictive and uncertain: restrictive because it excludes opportunity costs *a priori*, and uncertain because it is limited to a few comments on the different write-off methods: "the intent here is to provide a meaningful conceptual framework for the determination of the costs of capital usage and in the absence of perfect information to suggest alternative means for capital cost estimation." [Ref. (16) p. 59]. Fortunately, the subsequent tests [Ref. (20)] clarify this attitude. Following a statistical survey conducted by John H. Powell Junior at the University of Washington [Ref. (20) pp. 261-286], the Cost Analysis Manual advocates that an interest of 8 per cent representing the opportunity cost of lost interest should be added to the amounts by which the historic costs are written down.

The analysis of the French-speaking group is somewhat different. It begins by making a distinction between two types of cost:

- current management costs and in particular the retrospective accounting cost, will merely allow for the depreciation which is assumed to be equal to the straight-line depreciation calculated on the replacement cost (at current prices) of the equipment.

- on the other hand the "decisional" cost, equated with the prospective cost, should take account of the opportunity cost; the latter depends on the level of decision adopted since the alternative usages themselves depend upon it. As the optimal usage is generally not known, which is also the case as regards the opportunity costs arising therefrom, it is proposed that a constant annual sum should be adopted as an estimate of this opportunity cost plus the amount of the annual depreciation. The constant annual sum would represent a capital amounting to the current value of the equipment, the probable life of the equipment and a normal rate of interest (10 per cent in the present case). It should be noted that the University of Bradford where a team headed by Professor Bottomley has conducted an extensive cost investigation envisages the second method only |Ref. (36) p. 34|.

The allocation of capital costs to cost centres was approached with prudence by the NCHEMS. This operation was not initially set forth in detail, for the "Cost Finding Principles" |Ref. (16)| advocated that depreciation on buildings and equipment should be considered as "support programme" and should be allocated proportionally to an activity index selected from a long list. However, this was completely recast in the cost analysis manual |Ref. (19) p. 129-141|. The depreciation and interest on institution buildings plus their rents are divided among the centres of activity in proportion to the area they occupy (a concept similar to the usable area concept adopted by the French-speaking group, despite a few minor differences) and, where appropriate, the time they are used, in the case of premises shared by several cost centres. In the case of equipment (limited to a value at least equal to $500 and uniformly written down every year for ten years), depreciation and interest are allocated to centres of activity proportionately to the direct costs.

The allocation procedure, defined by the French-speaking group, is certainly more precise but is also more cumbersome:

- inventoried movable goods are divided into three categories:
  1. goods permanently allocated to a unit of space and regarded as an integral part of the latter, the depreciation of these goods being added to the cost of this unit of space;
  2. goods which are used by a single U.E.A. (Elementary Unit of Activity) and whose depreciation is considered as a direct cost of that UEA;
  3. goods which are not allocated to a unit of accomodation but used by several U.E.A. and whose depreciation is divided among the latter in proportion to an estimated period of use;
- depreciation on buildings and their permanent equipment is allocated to a building expenses "cost centre" which also covers rents and all expenditure on maintenance, insurance, lighting heating, etc., entailed by the existence of the buildings. This account is distributed among all U.E.A.s using the premises proportionately to the usable area in the case of permanent occupation. In the case of temporary occupation and particularly classrooms, two solutions have been devised. The annual cost of the room is distributed either proportionately to the time it is employed or proportionately to the time of employment weighted by the number of students theoretically present |Ref. (23) pp. 70-73, for a numerical example showing the use of the two methods|.

Transfer costs and implicit costs

Such implicit costs as potential earnings lost by postponement of active employment, costs of central or regional administration, collective infrastructure costs, etc., are definitely left out of account by the NCHEMS whereas the French-speaking group does not rule out the possibility of reintegrating them in a subsequent phase.

The treatment of transfers i.e. mainly direct assistance to students, depends on the degree of centralisation of each system and the standpoint adopted:

- in the United States, where "student service" programmes are managed by universities, they are obviously integrated in student costs;
- in France, students' awards are administered at national level, most university welfare schemes are managed by bodies independent of the universities and financed from public money; it is therefore much more difficult to obtain data and not particularly surprising that the initial tests have neglected these factors in practices, while allowing for them in theory |Ref. (23) p. 42|.

IV. PRINCIPLES OF INDIRECT COST ALLOCATION

In any cost accounting system, the allocation is the transfer of support activity costs (or indirect costs) to direct or primary activity accounts using certain criteria for consumption measurement. The problem is therefore the evaluation of internal services, many of which are part of administrative support.

At the level of phase I of its work, in "Cost Finding Principles..." the NCHEMS does not adopt any hard-and-fast attitude:

- it provides a long list of possible criteria for the measurement of each "support programme" and recommends that the one which offers the best correlation with the level of services provided by the user cost centres should be adopted |Ref. (16) p. 66 and pp. 75-87|;
- it proposes three methods of allocation, ranging from the simplest to the most complex:

Direct: the support activities are assumed to provide services only for primary programmes: this method is very simple and even simplistic, in that it neglects reciprocal services between support programmes although, in the field of university administration, they may be considerable.

Recurrent: the matrix of services between support programmes is assumed to be triangular, as all the terms of exchange below the diagonal are assumed to be nil; this method, which is hardly more cumbersome than the previous method, only approximates to the truth if the neglected services are minor ones and this implies a strict order of classification by the auxiliary costs centres.

Simultaneous: reciprocal services between support activities is taken into account (and if required, self-services); the application of this method calls for the solution of a system of simultaneous equations.

It will therefore not be possible to assess the qualities of the allocation systems adopted until they have been in use for several years. Only then can the data required for the statistical analysis which is meant to guide the choice of allocation criteria be brought together and the degrees of correlation be known.

The direct method is recommended at the present time |Ref. (19) p. 152| at pilot study level but the NCHEMS does not seem to consider this position as definite. The allocation parameters are also defined more precisely in the Cost Analysis Manual following the analysis of the pilot study data. It is remarkable that the allocation of administrative service costs proportionately to the direct costs of the primary activity centres should be the solution most frequently advocated, as this seems at first sight to be a highly empirical criterion.

The universities of the French-speaking group have *a priori* refused the direct allocation method but have not made up their minds between the recurrent and simultaneous methods which were incidentally both used in the pilot test studies |Ref. (25)|. The method suggested (allocation of the service UEAs followed by the allocation of the administrative and miscellaneous UEAs) has the advantage of defining the "semi-direct" costs as the costs of the directly productive UEAs plus the costs of services which can be accurately measured. The idea is admittedly creditable but in practice it is so extraordinarily complex that it does not seem to have been adhered to in the numerical tests. This question will probably have to be reconsidered. Clearly, the choice of allocation criteria other than the measurement of real services is totally empirical but is a little more varied. Perhaps this is due to greater deconcentration in the administrative services.

In the main, the NCHEMS opts for maximum simplification in the allocation of the costs of support activities, perhaps to the detriment of their quality. Although the method advocated by the French-speaking group is intellectually more satisfying from certain points of view its cumbersome nature and cost are perhaps not justified as it cannot claim to have entirely disposed of all the arbitrary elements.

V. CALCULATION OF UNIT COSTS AND USE OF RESULTS

It is of course rather venturesome to talk of using the results of methods one of which is at its running-in stage while the other has not got beyond the preliminary tests. For this reason this discussion will be limited to the study of the stated intentions.

The similarity of each accounting structure based upon the idea of a wide measure of decentralized activity justifies very great flexibility, as all reaggregation is possible and any type of cost may be calculated according to requirements. This is especially true for teaching, if an average retrospective cost is involved.

Teaching costs

For all teaching activities the initial objective of both approaches is to calculate a direct cost and a total cost for each semester. As a result it is possible to obtain the cost of any set of semesters by summation or to obtain the direct unit activity costs by dividing the total costs by the number of students registered for the semester. It is possible to obtain the cost of any set of semesters chosen. Possibilities in this area are practically unlimited |Ref. (16) pp. 200-266 and Ref. (23) pp. 80-83|.

But the problem is quite different when it comes to calculating student costs. Failures, the number of students who enter or drop out in the middle of a course, and the multiple systems of awarding degrees etc. are so many disruptive elements in the process of aggregating student costs.

Although the cost of the course of an individual student is easy to ascertain a posteriori by adding the costs for the semesters for which he is registered, the average cost of a category of students who have factors in common (degree, optional subjects, standard of previous education...) can only be calculated from assumptions as to the stability of the choice of optional subjects over periods of time, student intakes or the transition matrices from one year to another. Both teams worked out algebraical systems to cover all these problems. Much headway has been made since the traditional methods of dividing total costs by the number of graduates but work is still at the theoretical stage and it has to be tested.

Contribution to the internal management of institutions

The calculation of the average retrospective costs in this area must be regarded as a first step. Admittedly, a comparison of historical costs may lead to an investigation into the causes of the differences noted and improve the economic efficiency of inputs by reducing the possibility of waste and the misapplication of funds but the basic aim is to provide the data required to work out a programme budget system. Both approaches emphasize that so long as the production functions of universities continue to be unknown the factors likely to explain the cost functions are bound to be arbitrarily selected and cost benefit analysis methods cannot be used as long as the value of the "outputs" is generally not known.

Inter-institution comparisons

The exchanges of information between university institutions of higher education is clearly one of the priority objectives of the NCHEMS which devotes a special project to them i.e. the "Information Exchange Procedures" project (I.E.P.) [Ref. (21)]. This is confirmed by the considerable effort made by the P.C.S. in the matter of nomenclature. Realising the inadequacy of university "outputs" as indicators of performance and quality, the members of the I.E.P. project, while urging prudence, have assembled a mass of non-accounting information in order to ensure a fair and objective investigation into all possible causes of differences between comparable data in one institution and another.

The French-speaking group has by no means made the same headway in this area. The authors of the approach described acknowledge that the standardisation of the accounting structure is inadequate and the tests confirm this fact. This is undoubtedly a factor where deficiencies should be rapidly corrected.

Information at national level

This is certainly the point of fundamental divergence. Although the desire to provide the national authorities with consistent information is unquestionable in both the United States and France, it is clear that the constraints are differently conceived.

In the NCHEMS approach the emphasis seems to be on the cumbersome nature and diversity of the reports which have to be submitted to the various state or federal authorities and the objective is to simplify these tasks by making basic information available.

In France a balance has not yet been found between the desire to maintain a centralised system and the proclaimed objective of achieving autonomy in universities. There is frequently an element of misunderstanding between the universities and the national authorities in budget allocation negotiations. There is no doubt that more effective information about costs cannot but promote mutual understanding by enabling each party to base its arguments on more accurate data.

To sum up, the two approaches are still in gestation and no final comparison can be made between them. However, this analysis shows that while the NCHEMS approach, is well integrated in an overall programme designed to devise tools of management, and is well on the way to becoming operational at both intra-university and inter-university level, the method of the French-speaking group calls for further experiment and particularly a standardised nomenclature in order to ensure inter-university comparability, which for the moment has been somewhat overlooked. This is no reason for depreciating it, for its conceptual contribution is worthwhile on more grounds than one and its adaptation to the realities of the French educational system is good, subject to the criticism we have just made. The French-speaking group associated with the IMHE programme therefore still has work to do and it must be hoped that it will be able to carry this work to a satisfactory conclusion in the coming years.

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