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CHAPTER I

INTRODUCTION

Reason for Study

Much has been written since World War II about coping with the financial problems in higher education. Increasing enrollments along with projections of even more rapid increases in the future have been regularly recorded up to the present time. Coupled with the need for additional faculties and facilities brought about by the increases in enrollment are higher relative prices of educational resources brought on by their relative shortage. Private colleges are particularly vulnerable to the cost squeeze because of their reliance upon less rapidly growing gift and endowment income and their inability to pass increased costs on to students.

More efficient management of resources has been suggested by many as a partial solution to the financial problems of higher education. The application of commercial business management tools and techniques to college business management has been discussed by many as a means of obtaining greater efficiency. The advent of computers and data gathering systems makes such applications more feasible.

Objectives

Based upon the reasons discussed in the preceding paragraphs, this study was undertaken with the objectives of determining for private liberal arts colleges:

1. the managerial accounting practices presently in use,
2. the presidents' felt needs for financial data for purposes of control, planning, and decision-making, and
3. the applicability and usefulness of cost-volume-profit analysis in meeting these needs.

Using the knowledge gained from the attainment of these objectives would assist college administrators in the efficient management of resources.

Scope of Study

This study is limited to managerial accounting for the current funds of private four-year liberal arts colleges which are related to the following functions:

Instruction

General Administration

Student Services

Libraries

General Institutional

Staff Benefits

Plant Operation and Maintenance

Student Aid

Public Service

Organized Activities

Research

Although there are occasions when it is necessary to make reference to auxiliary enterprise funds, noncurrent funds, and to financial accounting and reporting (as opposed to managerial accounting and reporting), these subjects are outside the mainstream of this investigation.

Sources and Procedures

The following sources and procedures were used in the study:

1. Requests for information were made directly to four-year private liberal arts colleges as follows:

   a. Ranking by the president of the desirability of certain kinds of financial information or improvements in certain managerial accounting practices.

   b. Completion of a questionnaire by the business officer or chief accounting officer with regard to existing managerial accounting practices.

2. Personal interviews with college administrators.

3. Interviews and correspondence with members of educational associations and agencies.

4. Review of books, periodicals, and other literature.

5. A theoretical study of the application of cost-volume-profit analysis to private liberal arts colleges.

Structure of the Dissertation

Chapter II of the dissertation reviews background data leading up to the current circumstances affecting the finance of higher education as a whole and the financial problems of private institutions in particular. Also included in this chapter is a discussion of management efficiency in higher education and the applicability of business management techniques to such institutions.

Chapter III of the study is an exhaustive review of the literature in the field of college and university accounting, discussed under the headings of General Accounting and Reporting, Cost Analysis, Budgeting, Long-Range Planning, and Educational and General Revenues.

Chapter IV contains a summarization and analysis of the presidents' responses to the requests for ranking of the desirability of certain kinds of financial data from selected private liberal arts colleges, and to the questionnaires regarding existing accounting practices completed by the accounting officers of those colleges.

Chapter V consists of a theoretical study of the application of cost-volume-profit analysis to private liberal arts colleges and the usefulness of such analysis for control, planning, and decision-making.

Chapter VI contains conclusions and recommendations resulting from the study.

CHAPTER II

BACKGROUND INFORMATION

The growing concern with the financing of higher education since World War II can be appreciated more fully if some of the attending circumstances are reviewed. The purpose of this chapter is to present background information regarding some of these circumstances.

Increase in Enrollment in Higher Education

One of the early prognostications of an impending tidal wave of students was contained in the report of the President's Commission on Higher Education in 1947. This report compared projected 1960 enrollment in higher education, based on pre-World War II trends, of 2,924,000 with a proposed 1960 enrollment of 4,600,000. The difference of 1,676,000 was referred to as a gap for which financing should be planned.[1] Although increases of the magnitude suggested by the President's Commission were not realized, virtually every writer concerned with the financing of higher education prefaced his conclusions regarding the need for stronger financing with enrollment projections reflecting increasingly rapid growth. In 1961, Scheps noted:

> Sixty years ago, at the turn of the century, there were 238,000 students registered in American institutions of higher learning.

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[1]President's Commission on Higher Education, Higher Education for American Democracy (New York: Harper and Brothers, 1947), p. 45.

> Today, there are 3,600,000. In 1900, four per cent of the high school graduates went to college. In 1960, this proportion is thirty-seven per cent and is increasing each year. By 1970, enrollments will at least double, demanding large increases in teachers, facilities, and operating funds.[2]

A doubling of enrollment between 1960 and 1970 was corroborated by the partner-in-charge of the Educational Administration Division of Booz, Allen, & Hamilton in a paper on long-range planning by reference to the projected increase in the number of 18-21 year olds from 9,730,000 to 14,304,000, and an increase in the proportion of this age group which attends college from 35 to 45 per cent.[3]

Tickton, while associated with The Fund for the Advancement of Education, in stressing the need for long-range planning for colleges, summarized the factors underlying rapidly increasing college enrollments as:

1. An increase in the birth rate since World War II.
2. An increased desire to go to college.
3. An increase in capacity to go to college.[4]

Gardner, who later became Secretary of Health, Education and Welfare, in a 1965 speech noted that:

> The problem of numbers has struck us full force, and we feel that we are swamped--but we haven't seen anything yet. . . . To make

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[2]Clarence Scheps, "Systematic Financial Analysis and Budgetary Planning as Aids in the Attainment of College and University Purposes," Current Issues in Higher Education (Washington, D. C.: National Education Association of the United States, 1961), p. 185.

[3]H. Lawrence Wilse, Long-Range Planning for Colleges and Universities (Chicago, Illinois: Booz, Allen & Hamilton, n.d.), p. 5.

[4]Sidney G. Tickton, Needed: A Ten Year College Budget (New York: The Fund for the Advancement of Education, 1961), p. 5.

adequate preparation for them is going to require better planning on a statewide level, and an attentiveness to the economics of educating greater than any we have exhibited in the past.[5]

The number of students in higher education, past and projected, which have created the concern about financing are summarized in Table 1.

TABLE 1

TOTAL ENROLLMENT FOR DEGREE CREDIT IN INSTITUTIONS OF HIGHER EDUCATION
(in thousands)

Year	Number Enrolled
1957 (actual)	3,047
1962 (actual)	4,175
1967 (actual)	6,348
1972 (projected)	7,925
1977 (projected)	9,684

Source: U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1977-78, (Washington, D. C.: Government Printing Office, 1969), p. 12.

Relationship of Increased Enrollment to Costs

The preceding comments have been essentially a macro viewpoint of the problem of allocating sufficient resources to education to accommodate increasing enrollment levels. Many who have written about the financial problems of higher education have assumed that since average costs per student exceed average tuition that any increase in numbers of students is to the detriment, financially, of each institution as well as to higher education as a whole. The Director of the

[5]John W. Gardner, "Agenda for the Colleges and Universities," AGB Reports, VIII (March, 1966), p. 5.

American Council on Education pointed out that this was a misconception, by noting that while the warnings of the coming "tidal wave" of students were being given daily, most college presidents were publicly mopping their brows and privately rubbing their hands in anticipation. He contends that the "tidal wave" " . . . inundated acres and acres of public land and one hundred lush private islands (while) it has left countless other islands untouched."[6] He thus emphatically points out that there are many colleges whose capacity is not being filled, and consequently, whose marginal cost per student is less than marginal income from tuition.

Erfft made the observation also that while rapidly increasing enrollments were being experienced, and were projected for at least ten years into the future, many individual institutions could enroll a greater number of students.[7]

From the micro viewpoint, then, the effects on many colleges of the "tidal wave" of students are indirect, as opposed to what appears to be a rather common conception that all colleges are taking more students than they prefer at a net financial loss for each additional student. Some of the indirect effects are (1) that the macro problem of allocating sufficient total resources to education to meet the increased enrollment levels has focused attention on the financial problems of

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[6]John F. Morse, "Academic Quality and Financial Aid," Challenge and Change in American Education, ed. by Seymour Harris (Berkeley, California: McCutchan Publishing Corporation, 1965), p. 248.

[7]Kenneth R. Erfft, "Facilities, Faculty and Financing--Will Today's Answers be Tomorrow's Problems?," College and University Business, XXXIX (December, 1965), p. 41.

individual institutions, whether or not increased enrollments are a financial detriment to them, and (2) that the overall increased demand for faculties has contributed to increased faculty salaries whether or not individual institutions have been able to increase their revenues through increased enrollments.

It may be concluded that in some manner, then, the sharp increase in college enrollments since World War II has had a financial effect on individual colleges and universities.

The Cost Squeeze in Higher Education

Tickton noted what he called a "turnaround in faculty position" with regard to the change in relative supply of faculty and, that without regard to the relative merit of the resulting increases in faculty salaries, the effect was to increase the cost of education.[8]

Coombs gives an economist's view that higher education appears to be an increasing cost industry. He points out that the services which a college typically provides have become more extensive and more expensive. The curriculum has been broadened and deepened and student services such as guidance, recreation, and health care have been expanded. Further, while salaries in educational institutions have been forced up by rising productivity and consequent increases in real wages and salaries elsewhere in the economy, relatively few cost reducing innovations and improved technologies have been introduced in higher

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[8]Tickton, op. cit., pp. 6-8.

education.[9] Rathbun and Stein agreed with this view by stating:

> We are faced with a special cost squeeze. In brief, the squeeze occurs because, as wages, salaries and all other costs rise with the economy, teaching productivity either remains fairly constant or, in fact, drops under pressure of demands to reduce coarse (sic) load and class size.[10]

The president of Wesleyan University brings out the other side of the squeeze by noting that the student-customer never pays the full bill. He goes on to say that to increase tuition sufficiently to eliminate the cost-price squeeze would bring the risk of private institutions losing their clientele.[11]

Fortune magazine recently devoted an article to the cost-price squeeze in private colleges, projecting that the twenty richest private colleges would incur aggregate deficits of $45,000,000 by 1973, and $110,000,000 by 1978, if present trends continued.[12]

In his paper on long-range planning, Wilse reviewed the factors bringing about the cost-price squeeze in colleges and universities and concluded that such pressures tend to focus attention on immediate problems rather than long-range objectives.[13]

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[9]Phillip H. Coombs, "An Economist's Overview of Higher Education," Financing Higher Education: 1969-70, ed. by Dexter M. Keezer (New York: McGraw-Hill Book Company, Inc., 1959), p. 25.

[10]Daniel Rathbun and Herb Stein, "How to Make Your Budget Work for You," College Management, IV (May, 1969), p. 61.

[11]Edwin D. Etherington, "Help and Self-Help in Financing Higher Education," AGB Reports, X (May, 1968), pp. 6-7.

[12]Duncan Norton-Taylor, "Private Colleges: A Question of Survival," Fortune, LXXVI (October, 1967), p. 153.

[13]Wilse, op. cit., p. 7.

Vulnerability of Private Colleges

The sponsorship of higher education has changed from 100 per cent private in the 19th century to the present day proportion of 32 per cent of total degree-credit enrollment. A decline to 27 per cent is projected by 1977. (See Table 2.) If all other factors were equal, the very existence of the capacity of public institutions thus indicated would present a severe competitive position for private institutions. The principal factor that is not equal is that public institutions receive substantial financial support from the state, whereas the financial support of private institutions is derived primarily from tuition and fees, gifts from private sources, and endowment income.

TABLE 2

TOTAL DEGREE-CREDIT ENROLLMENT IN ALL INSTITUTIONS OF HIGHER EDUCATION BY INSTITUTIONAL CONTROL
(in thousands)

Year	Total	Public	Private	Per Cent Private
1947	2,338	1,152	1,186	51
1952	2,148	1,114	1,035	48
1957	3,047	1,763	1,285	42
1962	4,175	2,574	1,601	38
1967	6,348	4,305	2,043	32
1972 (projected)	7,925	5,619	2,306	29
1977 (projected)	9,684	7,102	2,581	27

Sources: U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1977-78 (Washington, D. C.: Government Printing Office, 1969), p. 12.
Fact Book on Higher Education (Washington, D. C.: American Council on Education, 1969), p. 9009.

The President's Commission, in 1947, assumed that no further expansion would occur in private colleges even though it projected phenomenal growth in total enrollment in higher education. This assumption was accentuated by the proposal that massive federal aid be given public institutions to finance the higher levels of enrollment, to the exclusion of aid to private institutions. The report stated:

> The Commission is . . . aware of the fact that its proposals for a great expansion of higher education in publicly controlled institutions may make it extremely difficult for many private institutions to survive.[14]

The competitive edge that private liberal arts colleges are often assumed to have through smaller classes and more personal instruction was called into question by Tickton in his statement that the only excellence that is unique to private institutions is that they can provide church-related education.[15] In his book on the need for financial planning by private colleges, he attributes their decline to their failure to recognize that they live in a competitive world.[16]

Another reason given for the failure of many private colleges to stay in the mainstream of higher education is that they no longer compete with the universities in attracting highly qualified faculty members. The lack of richness and variety of resources and opportunities is cited as the reason for this failure.[17]

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[14]President's Commission on Higher Education, op. cit., p. 46.

[15]Sidney G. Tickton, reply to comments on his paper, "Planning for Institutions of Higher Learning," Education and Public Policy, ed. by Seymour Harris (Berkeley, California: McCutchan Publishing Corporation, 1965), p. 246.

[16]Tickton, Needed: A Ten Year College Budget, op. cit., p. 10.

[17]Gardner, op. cit., p. 7.

In a study by Rourke and Brooks, they concluded that: " . . . our own research clearly shows that managerial innovation is a much more pronounced characteristic of large campuses than it is of small ones."[18] Thus a deficiency in managerial innovation is added to the competitive disadvantages of the smaller colleges as a factor in their vulnerability to economic pressures.

In the face of the dark outlook for private colleges painted in the above observations, Chambers sounds a more optimistic note by observing that in 1966, private colleges had just concluded two decades of unprecedented growth of approximately 50 per cent every ten years. He pointed out that even though the proportion of enrollment in private colleges has declined, the absolute numbers have increased sharply.[19] The figures contained in Table 2 bear out these observations.

Even with this note of optimism, there are enough danger signals to establish that private colleges are particularly vulnerable to the cost squeeze in higher education.

Efficiency of Management in Higher Education

Although many writers over the past fifty years have made tacit admissions that colleges should be efficiently managed, none has received the widespread and lasting attention for so emphatically pointing out this need as did Ruml in his Memo to a College Trustee. He tied his analysis to the need for higher faculty salaries and in answer to

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[18]Frances E. Rourke and Glenn E. Brooks, The Managerial Revolution in Higher Education (Baltimore, Maryland: Johns Hopkins Press, 1966), p. 7.

[19]M. M. Chambers, Higher Education: Who Pays? Who Gains? (Danville, Illinois: Interstate Printers and Publishers, Inc., 1968), p. 75.

the question "Where is the money coming from?" posed this response:

> The plain fact is that new money is not needed in anything like the amounts presently estimated. Many of the necessary funds are already at the disposal of the college or can be made so; but they are being dissipated through wastes in the curriculum, wastes in methods of instruction, wastes in administration, and in the use of property and plant.[20]

Ruml proceeds to outline specific proposals (which are discussed further in Chapter III) for obtaining the increased efficiency. The pros and cons of his observations are still being debated by those concerned with higher education administration.

In a follow-up article to his classic, Needed: A Ten Year College Budget, Tickton reemphasized that for private colleges to protect their future, they should start by

> . . . eliminating the slack which characterizes higher education today. There must be a better utilization of time, space, personnel and financial resources. . . . The opportunities are tremendous, yet the possibilities have hardly been touched by most institutions.[21]

The President's Committee on Education Beyond High School recognized the possibilities of more efficient utilization of resources in its 1957 report. It recommended the establishment of a national research center and clearing house for studies of space utilization and other matters relating to efficient management.[22] Almost fifty years

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[20]Beardsley Ruml, Memo to a College Trustee (New York: McGraw-Hill Book Company, Inc., 1959), pp. 9-10.

[21]Tickton, "Planning for Institutions of Higher Learning," op. cit., p. 235.

[22]President's Committee on Education Beyond High School, Second Report to the President (Washington, D. C.: U. S. Government Printing Office, 1957), p. 89.

earlier than this, in the preface to a study made for the Carnegie Foundation for the Advancement of Teaching, the following remarks which could easily be attributed to contemporary thinking were recorded:

> The cost of university education has risen throughout the world, but nowhere so rapidly as in the United States. Single universities in America are now spending larger incomes than any educational institution has ever spent in the world's history. Not only is this true, but the whole demand of the American university today is for more money. . . . It may well be that a thorough going administrative study of the income and expenditures of one of our large and newly grown universities may be more helpful to it at this moment than more money.[23]

Although many of the criticisms and suggestions for improvement come from those outside the ranks of college administrators, there are many exceptions. The president of Wesleyan University observed that colleges and universities have traditionally been inefficient when judged by business standards and that it seems to be a campus canard that they must be so by their nature. He points out that although colleges do not die easily, between 1934 and 1964, 616 institutions disappeared from the directory of the U. S. Office of Education.[24]

Speaking for one of the important segments of benefactors of colleges and universities, the charitable foundations, Pattillo gave this view of their efficiency:

> Many informed observers believe that colleges and universities fail to make the best use of their present resources. Questions about the efficiency of the management of higher education persist. The proliferation of courses and programs, the duplication of facilities

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[23]Henry S. Pritchett, preface to Academic and Industrial Efficiency (Boston, Massachusetts: D. B. Updyke, The Marrymount Press, 1910), p. v.

[24]Etherington, op. cit., pp. 8-9.

> and activities in neighboring institutions, and the unwillingness of faculties to take seriously the problem of rising costs in higher education (leaving that to the president and trustees to worry about!) all give rise to reservations about efficiency. In the absence of clear evidence that institutions of higher learning are doing everything possible to reduce costs without damaging quality, there is a widespread feeling that higher education is unreasonably expensive.[25]

Difficulty of Measuring Efficiency

The intangible nature of the product or the goals of educational institutions has been used by many to discredit any reference to efficiency in their operation. Rourke and Brooks took note of this factor in their study of what they recently termed a "managerial revolution" on the campus. Although they speak favorably of the recent trend toward "rationalizing" the management of colleges and universities, they conclude that given the intangible goals that these institutions seek and the difficulty of measuring achievements in pursuit of these goals, such efforts can only be partially successful.[26]

In a National Science Foundation study, conducted recently, the need for the utmost economy and efficiency in the management of the educational establishment was pointed out. Such management implies planning and intelligently-made decisions based on the best available information. This report continues by saying that such economy and efficiency must be interpreted "educationally"; that is, that management should provide the best possible conditions for the academic staff

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[25]Manning Pattillo, "The Role of Foundations in the Future Financing of Higher Education," AGB Reports, X (July-August, 1968), p. 8.

[26]Rourke and Brooks, op. cit., pp. vi-vii.

and the students to carry on their appropriate activities.[27]

Limited View of Purposes of Educational Institution Accounting

A little less recently, many students of administration of educational institutions were even less disposed to admit the applicability of the business concept of efficiency to educational institutions. Russell, a prolific writer and widely accepted authority on educational finance, took great pains to explain why the administrative affairs of educational institutions should not be subjected to commercial standards of efficiency. He stated that a college or university is a spending institution, existing to spend and produce service rather than a profit. Its aim is to spend all the income it can obtain and that, even though deficits are embarrassing, surpluses should be even more embarrassing. He adds that colleges are not asset-accumulating agencies, that they acquire their capital in a manner different from commercial enterprises, and that they need not arrive at an income figure on which to pay taxes, to close his case against applying commercial or business accounting practices to educational institutions.[28]

The primary emphasis given the accounting function by Russell and others of this school of thought, is in the safeguarding of funds

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[27]National Science Foundation, Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities (Washington, D. C.: National Science Foundation, 1965), pp. 12-13.

[28]John Dale Russell, The Finance of Higher Education (Rev. ed.; Chicago, Illinois: University of Chicago Press, 1954), pp. 45-50.

and making certain that any restraints upon the use of funds by benefactors are observed; this to be accomplished through the use of fund accounting techniques. Woodburne adds his support to Russell's view, observing that since there are no criteria of inefficiency or waste in a nonprofit institution, tight financial control does not contribute to any increase in efficiency as it does in business. He goes on to say that it is not possible to search out inefficient departments by cost analysis since primarily value judgments are involved.[29]

Another authority in what might be called the traditional school of college and university accounting, Morey, had the following to say with regard to using accounting or financial data to judge efficiency in educational institutions:

> . . . it does not follow that because an institution's expenditures are low it is being operated efficiently from either an educational or a financial standpoint. The best results are likely to be secured when the scale of expenditures is on a high level, indicating higher quality service, more and better facilities, and wider range of service and programs. That is not to say that such institutions do not spend their funds economically.[30]

In the same article Morey, explaining why colleges and universities need not account for depreciation, asserts that the objective in educational accounting is to show the source and disposition of available funds.[31]

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[29]Lloyd S. Woodburne, Principles of College and University Administration (Stanford, California: Stanford University Press, 1958), p. 14.

[30]Lloyd Morey, "Better Application of Recognized Principles Would Improve University Accounting," Journal of Accounting, LXL (September, 1950), p. 202.

[31]Ibid., p. 206.

It is interesting to note that each of these writers takes offense at "uninformed" college trustees who attempt to apply commercial accounting practices and techniques for measuring efficiency to educational institutions. This complaint was registered in one of the first books written about college accounting, by Arnett in 1922, and has been carried forward to the present time by those who feel that the efficiency of colleges and universities cannot be related to financial analysis.[32]

An indication of some change in attitude might be attributed to remarks made by Russell several years later than those referred to previously. In this instance, Russell refers to meeting the problem of rising costs by improving efficiency of institutional operations. He then lists improved space utilization, class size, teaching loads, and course proliferation as areas " . . . that are likely to yield 'pay dirt' when examined for possible economies."[33] Although he doesn't specify how such examinations are to be made, perhaps he would give more credence to the use of financial data taken from the accounting records than was indicated by his earlier statements.

Background of College Administrators

Another aspect of efficiency in the management of educational institutions has to do with the administrative background and ability

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[32]Trevor Arnett, College and University Finance (New York: General Education Board, 1922), p. 7.

[33]John Dale Russell, "Dollars and Cents: Some Hard Facts," Higher Education: Some Newer Developments, ed. by Samuel Baskin (New York: McGraw-Hill Book Company, 1965), pp. 280-283.

of college and university presidents. Heneman pinpointed the factors behind this problem in noting that the university president isn't reminded of the need to use resources wisely by cost, price, and competition as is the businessman. He states that many presidents have reacted to deficit operations by turning to new sources of income rather than upgrading efficiency in their institutions. He admits that this difference in attitude is understandable since the objectives of a college or university differ from those of a profit-making enterprise, and chief executive officers of colleges and universities have traditionally come from the ranks of scholars. They are not necessarily chosen for their managerial skill.[34] He was even more pointed in a later publication in saying that the management of a college or university was the only form of human endeavor that he knew of where no prior experience or demonstration of qualification was needed.[35] The president of Knox College commented that most college presidents, including himself, weren't selected for demonstrated management know-how but rather that most came from the fields of scholarship.[36]

In their study of the "managerial revolution" in higher education, Rourke and Brooks attempted to determine whether there was any

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[34]H. J. Heneman, "Opportunities for Improved Management in Higher Education," Financing Higher Education: 1960-70, ed. by Dexter M. Keezer (New York: McGraw-Hill Book Company, Inc., 1959), p. 121.

[35]H. J. Heneman, "Goals and Techniques of Business, Industry, and Government that May be Applicable to the Administration of Higher Education," Current Issues in Higher Education (Washington, D. C.: National Educational Association of the United States, 1961), p. 184.

[36]Sharvey G. Umbeck, "Financing Higher Education: Commentary," AGB Reports, X (June, 1968), p. 28.

tendency to recruit university presidents from government or industry rather than from an educational background. They found no evidence to support that hypothesis.[37]

In concluding this review of attitudes toward efficiency in the management of colleges and universities, Nance's remarks appear to cut to the heart of the matter:

> . . . a college can be just as efficient in making a non-profit as a profit making organization is in making a profit. . . . It is true that the nature and objectives of college operations place educators in a unique role, . . . but at the same time there is an obligation to efficiently utilize resources. Thus it seems worthwhile to continue establishing criteria for measurements of efficiency in higher education, . . .[38]

Applicability of Business Management Techniques to Colleges and Universities

Parallel to the discussion and controversy over the difference in concepts of efficiency in educational institutions and efficiency in commercial organizations is discussion and controversy over whether business accounting techniques are applicable to colleges and universities. The reasoning follows similar paths as in the discussion of efficiency, with the extreme traditionalists resisting all efforts to use profit-making organization accounting practices in educational institutions and those who might be termed modernists inferring that such practices are necessary to plan, control, and make decisions in the institution.

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[37]Rourke and Brooks, op. cit., p. 150.

[38]Paul K. Nance, "Be Efficient in Making a Non-Profit," College and University Business, XLIV (January, 1968), p. 47.

Arnett, in 1922, was among the first to criticize the attempts of trustees to force the accounting systems of their businesses upon colleges and universities. He emphasized the stewardship aspect of accounting and was among the first to describe the need for and use of fund accounting for colleges.[39] Franke supported these views in a 1925 Journal of Accounting article and Morey picked up this argument in his 1930 book as well as in many subsequent publications.[40]

McGladrey attacked college and university accounting in a 1949 Journal of Accounting article, primarily with respect to reports to the public.[41] This criticism brought a number of responses, both pro and con, with the latter referring back to Arnett's premise that the basically different objectives of educational institutions bring about basically different accounting concepts from those of commercial organizations. In a reply to McGladrey, the Assistant Comptroller of the University of Chicago, asserted that:

> It has taken years to bring reports to the present standard and to break away from the attempts to apply commercial standards. It is hoped that the article will not result in strengthening the hand of those individuals who are always attempting to force commercial accounting and reporting practices on institutions.[42]

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[39]Arnett, op. cit., pp. 58-63.

[40]William B. Franke, "College and University Accounting," Journal of Accountancy, XXXIX (March, 1925), p. 170.

Lloyd Morey, University and College Accounting (New York: John Wiley & Sons, Inc., 1930), p. 4.

[41]Ira B. McGladrey, "Something is Wrong with College Financial Reports," Journal of Accountancy, LXXXVIII (August, 1949), pp. 102-111.

[42]Arthur Lincicome, "Are College Financial Reports Faulty?," College and University Business, VIII (March, 1950), pp. 43-44.

Russell also questioned the application of commercial accounting practices to the educational field. He noted that newly appointed business managers, auditors with limited outlook on the financial accounting problems of institutions, and trustees who are drawn almost exclusively from the field of business are all forces tending to force college reporting and accounting practices to follow the pattern set by commercial organizations.[43]

Some who are associated with the educational field have taken the view that colleges and universities could benefit from the experience of business and industry. The Director of the Commission on Administrative Affairs of the American Council on Education has stated that:

> . . . one of our problems in colleges is that the present models of budgets and accounts date from mid-19th century business models. While business and industry have moved ahead, the colleges have stayed behind, and now they seem to reject another cycle of emulation on the argument that business is a poor model for the college.[44]

While acknowledging that concepts of efficiency in colleges and universities vary from those of business interests, Stokes points out that a thoroughly business point of view may be valuable in helping a university determine whether it has bought all of the intangible products that could be bought for the amount of money spent. He states further that the problems of competition and monopoly are not unrelated to colleges with regard to faculty, students, and financial support,

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[43]Russell, The Finance of Higher Education, op. cit., pp. 45-46.

[44]John Caffrey, personal letter, August 18, 1969.

further emphasizing the need for a "business" point of view.[45]

Coombs was articulate in observing that the knowledge and skills of economics, accounting, and administration, which have been so fruitfully applied by colleges and universities to affairs of mankind in the larger world must be applied to the academic world itself. He points out that the techniques of reporting data rapidly and accurately in such fields as agriculture, manufacturing, banking, horse racing, and baseball must now be applied to education in the interests of better management of educational institutions.[46]

Tickton was responsible for one of the strongest inroads of commercial financial analysis techniques into the college and university field with his hypothetical Ashford College long-range planning study. He noted that the colleges which participated in this study recognized that institutions of higher education are not strictly business activities but that their operations are subject to business-type analysis (This study is discussed in more detail in Chapter III).[47]

It is doubtful that the "traditionalists" such as Arnett, Morey, Lincicome and others intend to exclude all forms of "business-like" financial analysis from the educational field. Nevertheless, their defense of the established and "accepted" methods has been so strong that any recognition of the usefulness of commercial accounting

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[45]Harold W. Stoke, Viewpoints for the Study of the Administration of Higher Education (Eugene, Oregon: Center for the Advanced Study of Educational Administration, University of Oregon, 1966), p. 16.

[46]Coombs, op. cit., p. 13.

[47]Tickton, Needed: A Ten Year College Budget, op. cit., p. 18.

techniques has generally taken the form of damning by faint praise. On the other hand, it is doubtful that the critics of present college and university accounting have intended to scrap the stewardship function of those methods which fund accounting seeks to protect and the subjective methods of evaluating the product of a college. The two views are not incompatible, but the emphasis of the various students of this field upon the extreme ends of the continuum, that includes both views, makes it appear that they are.

In the preface to the 1910 Carnegie Foundation report, Pritchett describes two extreme circumstances under which an attempt might be made to draw an analogy between educational institutions and businesses:

1. . . . insofar as the American university handles money and deals with questions of effective organization and administration, any experience derived from the industrial world is distinctly applicable.

2. In the upper regions of academic activity, namely in the field of research, no such close or consistent correlation between work and expense is feasible.[48]

He continues by referring to an expansive territory in between these areas to which business concepts have not been applied and into which that report delves.[49] Little progress has been made, since the question was raised in this pioneering work, with respect to obtaining general agreement among authorities as to the applicability of business concepts to educational management.

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[48]Pritchett, op. cit., pp. iii-iv.

[49]Ibid., p. iv.

Offices of Institutional Research

There is evidence to indicate that through default or abdication on the part of financial executives in educational institutions that offices of institutional research are being established to provide data for managerial decisions. The study by Rourke and Brooks indicated that about 45 per cent of the institutions they surveyed had such an office. This survey covered primarily public institutions.[50]

Russell described such offices as being set up to facilitate studies of operational problems with the specific responsibility to obtain data for making policy and procedure decisions. He relates such studies to improvement of efficiency of institutional operations, obviously through the use of data such as cost analysis that the financial executive would expect to provide in commercial organizations; however, he states that these offices are usually attached directly to the office of the president or executive vice president, placing them parallel to the financial activity rather than part of it.[51]

The editor of the periodical, College and University Business, commented on the need for more institutional research by the business officers of colleges and universities. Although he doesn't specify the problems that he feels should be researched, there is every indication that he is referring to the kinds of study and analysis that would be referred to as managerial accounting outside the field of education.[52]

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[50]Rourke and Brooks, op. cit., p. 139.

[51]Russell, "Dollars and Cents: Some Hard Facts," op. cit., p. 284.

[52]Harold W. Herman, "What's Hot in College Management?," College and University Business, XXXV (December, 1963), p. 31.

Brumbaugh, in describing areas of institutional research, made a distinction between the administration of finances and the gathering of financial data for administrative use. He classifies the latter as an area of institutional research and finally concludes that there is little doubt about the advantages of the trend toward centralizing institutional research under an officer or a committee.[53] Thus, the managerial accounting function is removed from the financial officer's responsibility.

An educational management consultant, Bofferding, had this to say on this subject:

> While we would expect the business officers to be the most knowledgeable regarding accepted techniques for management improvements, we usually find them reluctant to use their knowledge in a leadership role. . . . Because of this lack of leadership on the part of the business staff, there is a tendency for the institutional research function to grow up outside the business area, although it frequently is concerned with both academic and business service costs.[54]

The background information discussed in this chapter establishes a context for the review of college and university accounting literature and the survey of existing managerial accounting practices which are presented in the following chapters.

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[53]A. J. Brumbaugh, Research Designed to Improve Institutions of Higher Education (Washington, D. C.: American Council on Education, n.d.), pp. 19-27.

[54]E. J. Bofferding, "What's Wrong with College Business Administration?," College and University Business, XXXIV (April, 1963), p. 54.

CHAPTER III

REVIEW OF COLLEGE AND UNIVERSITY ACCOUNTING LITERATURE

An Overview

There began to be scattered appearances in publications regarding the accounting for and finances of institutions of higher learning at about the beginning of this century. The first substantive works in this area were in the form of reports sponsored by the Carnegie Foundation for the Advancement of Teaching. One of these had to do with standard reporting forms for colleges and universities and the other with the applicability of cost accounting to educational institutions.[1]

Arnett's book in 1922 was the first on the general subject of college and university accounting.[2] Many of the "principles" set forth in this book are still followed. Morey's University and College Accounting expanded the literature in this field in 1930.[3] Also in 1930, the National Committee on Standard Reports for Institutions of Higher Education, whose members were made up of representatives of individual

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[1]Standard Forms for Financial Reports of Colleges, Universities, and Technical Schools (Boston, Massachusetts: D. B. Updyke, The Merrymount Press, 1910).

Morris Llewellyn Cooke, Academic and Industrial Efficiency (Boston, Massachusetts: D. B. Updyke, The Merrymount Press, 1910).

[2]Arnett, op. cit.

[3]Morey, University and College Accounting, op. cit.

institutions, public agencies, and educational associations, was formed to study the problem of lack of uniformity in educational institution reports. It published Financial Reports for Colleges and Universities in 1935.[4] Volumes I and II of College and University Business Administration, prepared in 1952 and 1955 respectively, which were revised and published in one volume in 1968, were published by the American Council on Education and authored by a national committee consisting of representatives of the National Association of College and University Business Officers, the American Institute of Certified Public Accountants, the U. S. Office of Education, the American Council on Education, and special consultants.[5] These publications relate to various aspects of college business management and have specific sections applicable to accounting and finance. They are considered by many to contain the current "generally accepted principles" of college and university accounting.

Russell and Millett authored substantial works on the broad subject of financing higher education and in so doing discussed several

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[4]National Committee on Standard Reports for Institutions of Higher Education, Financial Reports for Colleges and Universities (Chicago, Illinois: University of Chicago Press, 1935).

[5]National Committee on the Preparation of a Manual on College and University Business Administration, College and University Business Administration, (2 vols.; Washington, D. C.: American Council on Education, 1952).

National Committee to Revise Volumes I and II, College and University Business Administration, College and University Business Administration (Rev. ed.; Washington, D. C.: American Council on Education, 1968).

specific aspects of individual institution accounting and finance. Russell's work was published in 1944 and revised in 1954, and Millett's was published in 1952.[6]

In a narrower vein, Tickton's work on the subject of long-range planning and Ruml's attack on "inefficiency" in college and university management have had an impact on specific areas of financial planning and cost analysis. Both of these works appeared in 1959.[7]

Several other books on the subject of college and university accounting and finance have appeared throughout the period spanned by the publications referred to above, but none appears to have contained significant new insights into the problems of educational institution accounting. Many debates and discussions regarding specific issues have been carried on in both accounting-oriented and educationally-oriented periodicals.

Unfortunately, from the standpoint of managing the internal affairs of the individual institution, the preponderance of weight in the literature overviewed above is directed toward the stewardship aspect of accounting and the uniformity of reporting for purposes of comparing institutions and obtaining macro financial information. These

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[6]Russell, The Finance of Higher Education, op. cit.

John D. Millett, Financing Higher Education in the United States (New York: Columbia University Press, 1952).

[7]Tickton, Needed: A Ten Year College Budget, op. cit.

Ruml, op. cit.

purposes have overshadowed the attention given to accounting for purposes of managerial control, planning, and decision making.

The executive vice-president of the National Association of College and University Business Officers recently observed that:

> A big void in our literature, which is of tremendous importance to the proper operation of institutions, is the area of effective management reports for the various operations which are found in an institution of higher education.[8]

The remainder of this chapter is devoted to analyzing and summarizing the existing literature in the context of specific areas of accounting and finance.

General Accounting and Reporting

Although this study is concerned primarily with managerial accounting for private liberal arts colleges, it is necessary to take a brief look at the overall framework and the constraints that have been imposed under the name of "generally accepted accounting procedures" for colleges and universities. In addition, general accounting and reporting procedures do represent broad aspects of managerial accounting.

Fund Accounting

One of the oldest, most vigorously defended, and perhaps the most agreed upon concepts of accounting for educational institutions is that of fund accounting. The revised College and University Business Administration explains this concept in this manner:

> In accounting and reporting for educational institutions, a fund is an accounting entity involving assets, liabilities, revenues and

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[8]Kenneth A. Dick, personal letter, June 23, 1969.

> expenditures, receipts and disbursements, and a balance. A fund is established to carry on specific activities or attain certain objectives in the operation of an institution, either at the discretion of the governing board or in accordance with regulations, restrictions, or limitations imposed by sources outside the institution. In order to ensure observance of limitations and restrictions placed on use, a separate account must be maintained for the balance of each fund, and must reflect the results of its transactions or operations. For reporting purposes, funds subject to similar restrictions, or available for like purposes, should be assigned to a fund group, and each fund group should be treated as a separate balanced entity. The usual fund groups are:
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> | | |
> |---|---|
> | Current Funds | Annuity and Life Income Funds |
> | Loan Funds | Plant Funds |
> | Endowment and Similar Funds | Agency Funds[9] |

The concept of funds in governmental institutions is described by Mikesell and Hay as follows:

> The word fund has a special, technical meaning in governmental accounting: A fund is defined as an independent fiscal and accounting entity with a self-balancing set of accounts recording cash and/or other resources together with all related liabilities, obligations, reserves and equities which are segregated for the purpose of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations.
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> The dual meaning of "fund" should be noted. In one usage it is an accounting entity. As a control factor, the entity aspect of a fund is of paramount importance.

They go on to say that not all self-balancing groups of accounts are funds because certain resources are not restricted to specific purposes. They also suggest that the number of funds be kept to a minimum.[10] The two definitions appear to be compatible, although the latter appears to be stated more clearly.

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[9]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., p. 143.

[10]R. M. Mikesell and Leon E. Hay, Governmental Accounting, (4th ed.; Homewood, Illinois: Richard D. Irwin, Inc., 1969), pp. 3-5.

An early record of the need for fund accounting in educational institutions was made by Dyche in a paper read before a conference of university trustees and published in the Journal of Accountancy, in 1905. He related the concern expressed by a trustee that he could not tell from the accounting records whether the institution was living within its income or whether annual operating expenses were eating into endowment funds. Dyche went on to note that the average system of college accounting broke down at this point.[11]

In a report to the Carnegie Foundation in 1910, suggested standard reporting forms for colleges and universities contained provisions for the segregation of accounts by funds.[12] Arnett incorporated the fund accounting concept into his 1922 book which is considered to be the pioneering work in setting forth college and university accounting principles and procedures.[13] Virtually all other authorities who have written in the field of accounting and finance for educational institutions since Arnett have included the fund accounting concept in their works. Morey has been one of the staunchest advocates and explainers of the reasons for fund accounting.[14] These reasons boil down to the

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[11]William A. Dyche, "Need of Business Methods in our Universities," Journal of Accountancy, I (December, 1905), p. 125.

[12]Standard Forms for Financial Reports of Colleges, Universities, and Technical Schools, op. cit.

[13]Arnett, op. cit., pp. 58-63.

[14]Morey, University and College Accounting, op. cit., p. 26.

Morey, "Better Application of Recognized Principles Would Improve University Accounting," op. cit., p. 206.

need for a method for insuring strict observance of the restrictions on the purposes for which funds are to be used.

An attack on college and university accounting and financial reporting was made by McGladrey in a 1949 Journal of Accounting article. Although it touched off a debate in the pages of various periodicals, no substantial changes in the concept of fund accounting for educational institutions came about as a result. McGladrey, while conceding that colleges should use fund accounting, charged that the lengths to which fund segregation is carried, when not legally required, cause college financial reports to be deficient in showing true cost of operations and financial position. He goes on to say that the inviolability of fund accounting in colleges seems to rest more on the pronouncements of "authorities" on college accounting than on legal requirements.[15]

The ultimate question to be raised, then, is not whether fund accounting for purposes of proving proper stewardship of funds is right or wrong, but rather, whether this aspect of educational institution accounting has been emphasized in both the accounting records and in reporting, to the detriment of the provision of adequate financial data for control, planning, and decision making.

Accrual Basis of Accounting

As recently as 1954, Russell observed that most colleges and universities approximate the cash basis of accounting rather than the accrual basis. Although not actually advocating it, he is mildly

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[15]McGladrey, op. cit., pp. 103-110.

defensive of the use of the cash basis. He uses the reasoning that has a tendency to crop up each time a peculiarity of college and university accounting is pointed out: this reason being that colleges are not operated for a profit and consequently have no compelling reason to measure precisely the financial operations of a single year. He further cites the additional expense of maintaining accrual basis records and reasons that since accruals are approximately the same at the end of each fiscal year that they may be ignored.[16]

Morey acknowledges a preference for the accrual basis of accounting for expenditures, but contends that a strict accounting for all accrued and deferred items is not essential. He distinguishes those items that need not be accrued more on the basis of the nature of the expenditure than on its materiality. He cites insurance premiums and interest expense as items that are more satisfactorily accounted for on a cash basis.[17]

Regardless of these opinions, the generally accepted practices, as pronounced by the various national committees which have served the field since 1930, have progressed from the 1935 position, in Financial Reports for Colleges and Universities, that expenditures should be accrued, but not income, through the 1952 position in College and University Business Administration that income and expenses should be recorded on a modified accrual basis, to the 1968 unqualified position

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[16]Russell, op. cit., pp. 52-55.

[17]Morey, "Better Application of Recognized Principles Would Improve University Accounting," op. cit., p. 206.

in the revised edition that the accrual basis should be used for income and expenditures.[18]

In advocating a modified accrual basis the Committee preparing the first edition of College and University Business Administration again emphasized the traditional stewardship function of college and university accounting by observing:

> . . . since the primary purpose of accounting in educational institutions is to report on the stewardship of the funds and the property entrusted to the institution, rather than to determine net profits and net worth, it is neither necessary nor desirable to accrue all income nor to prorate all expenditures.[19]

Depreciation of Fixed Assets

The views toward recognition of depreciation on fixed assets separate traditional educational institution accounting from conventional commercial accounting more significantly than any other single aspect. Arnett was among the first to observe that since the income of educational institutions does not " . . . permit the accumulation of a depreciation reserve for replacing buildings," a commercial system of accounting which records building depreciation is not applicable.[20]

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[18]National Committee on Standard Reports for Institutions of Higher Education, op. cit., p. 8.

National Committee on the Preparation of a Manual on College and University Business Administration, op. cit., p. 61.

National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., pp. 152-153.

[19]National Committee on the Preparation of a Manual on College and University Business Administration, op. cit., p. 61.

[20]Arnett, op. cit., p. 7.

Russell elaborated upon this view, assuming that if depreciation charges were made they would be funded out of current funds and that such funds were more urgently needed for support of the educational program. He concluded that it is better to trust that philanthropists of the future will provide the necessary funds to replace existing plant.[21] He apparently did not consider the possibility of unfunded provisions for depreciation for purposes of measuring actual operating results, even though the funds for plant replacement might still have to be solicited from a future benefactor.

Many others have defended the position of not recognizing depreciation on educational plant assets and the revised edition of College and University Business Administration takes a position on the subject of depreciation that may be summarized as follows:

1. It is inappropriate to recognize depreciation expense in educational institutions and to charge such depreciation as an expenditure against current revenues.

2. If an institution desires to set aside a portion of current revenues for plant renewals and replacement, such amounts should be shown as transfers to the plant fund in the Statement of Current Funds Revenues, Expenditures, and Transfers.

3. An exception to the above principles is made in the case of depreciable assets owned as investments by endowment funds.[22]

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[21]Russell, The Finance of Higher Education, op. cit., pp. 378-379.

[22]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., pp. 285-289.

The reasons set forth for these conclusions are that educational institutions are not profit seeking enterprises, that their income is not subject to tax, and that the financial statements of a college or university emphasize stewardship. Mention is also made of the fact that the stewardship aspect is further emphasized by charging purchases of equipment from current funds to current expenditures.[23]

The concepts described above have not gone unquestioned. This aspect of accounting for educational institutions was also attacked by McGladrey in his Journal of Accountancy article in 1949. He states simply that since depreciation represents the estimated amount of buildings and equipment used, that in order to arrive at the total cost of operations it should be included therein. He answers the objection that replacement plant will be financed with extraordinary funds by stating that this does not preclude recognizing the cost of depreciation as a financial fact to be incorporated into college accounting.[24] He is implying that total costs once determined may be subdivided in many ways, some of which are useful only for management decisions as opposed to reporting to trustees.

Morrell takes up McGladrey's position in a more recent article in which he adds that by understating the educational cost per student, colleges undermine their positions with regard to the relationship between tuition charges and operating costs. In answer to the argument that plant will be replaced with funds from special drives or campaigns

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[23] Ibid.

[24] McGladrey, op. cit., p. 107.

he observes that budget deficits are being met from the same sources. If depreciation were charged into operating costs, an annual total deficit could be the single basis for fund-raising campaigns.[25]

Regardless of the dissents that arise from time to time, the principle of not recording depreciation expense in college and university costs continues to be well entrenched.

Financial Reporting

Financial reporting in colleges and universities has been governed by the objectives of showing proper stewardship of funds and obtaining uniformity between institutions. The authoritative publication, College and University Business Administration acknowledges that:

> The development of the accounting system should be governed by the form and character that the financial data need take in order to promote effective administration.

but goes on to state:

> . . . certain principles of classification and presentation of accounting data as well as standard terminology for institutions of higher education have come to be accepted, and colleges and universities should maintain their accounts and present financial reports accordingly.[26]

Stewardship

The stewardship objective in educational institution reporting is met through the use of fund accounting concepts. In carrying out this concept, separate accounting entities are established for every

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[25]L. R. Morrell, "A Fresh Look at College Accounting," College and University Business, XLIV (January, 1968), p. 46.

[26]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., p. 141.

block of funds which is designated for a specific use. Separate fund balance or equity accounts are maintained for each fund until it is entirely used for the designated purpose. Such designations of purpose may be made by the supplier of the funds or at the discretion of the governing body. Individual funds which are designated for similar purposes are grouped together for institutional reporting purposes, with emphasis placed on accounting for changes in fund balances.

Financial statements prepared in accordance with the fund accounting principles have been criticized on occasion because fund accounting practices tend to keep assets and liabilities and revenues and expenses segmented by the source of the funds rather than accumulated by types of efforts or objectives of the institution.

Uniformity Among Institutions

The objective of uniformity in college and university financial statements stems from a desire to make comparisons of financial data between institutions and a desire to accumulate data for groups of institutions. The Carnegie Foundation published its Bulletin Number Three in 1910, which contained recommended standard forms for educational institutions.[27] Some of the revenue, expense, and departmental classifications that were recommended in this report are still included in today's recommended report formats.

Colleges did not adopt uniform reporting practices rapidly. In fact, in another report sponsored by the Carnegie Foundation over twenty

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[27]Standard Forms for Financial Reports of Colleges, Universities and Technical Schools, op. cit.

years later, which was aimed at initiating economies during the depression, it was noted that:

> Colleges have not been noted for their superior accounting systems. It is still difficult for many colleges to furnish uniform financial data of even the most elementary sort. Expenditures are often not classified according to function and hence afford no basis for even the most general sort of unit-cost analysis.[28]

Russell couched his discussion of financial accounting for educational institutions in terms of a history of progress towards uniformity. He concluded that " . . . a complete standardization of financial accounting practices and procedures . . . seems to be a distant, though desirable goal.[29] At the same time that the authorities in this field are striving for uniformity, it is not uncommon for them to observe that comparisons of financial data between institutions may be dangerous or misleading. Millett states this view in these words:

> Because of the great qualitative differences between institutions, we have been very reluctant to undertake cost comparisons between different institutions. Various universities have various missions, they serve various clienteles, and they operate in various ways. Cost data merely reveal this variety; they do not explain it.[30]

Although it is possible that accounting records can be devised that will yield financial information in a form to meet the stewardship and uniformity objectives, and at the same time yield data that is more relevant to management decisions, it appears that the former has dominated the research in this field. This is evidenced by the fact that

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[28]David S. Hill and Fred J. Kelly, Economy in Higher Education (New York: Carnegie Foundation for the Advancement of Teaching, 1933), p. 96.

[29]Russell, The Finance of Higher Education, op. cit., pp. 38-44.

[30]Millett, op. cit., p. 152.

only two pages are devoted to financial reports for internal use in the revised edition of College and University Business Administration.[31]

Cost Analysis

The analysis of past expenditures has taken second place to the stewardship and uniformity objectives in the literature related to college and university accounting. Nevertheless, there has been a substantial amount written about certain aspects of cost analysis. Such analysis ranges from the simplest classification of expenditures by object to more sophisticated recent attempts to accumulate costs of activities which involve efforts of more than one conventional department or cost center.

A running controversy has existed among educators for the past sixty years as to the applicability of cost accounting to colleges and universities. Yet, the only reference to cost accounting in the revised College and University Business Administration, which is currently the generally accepted source of authority for educational institution accounting, is a reference to the allocation of indirect expenses to auxiliary enterprises, organized activities, and service departments.[32]

In 1952, Millett's Commission on Financing Higher Education concluded that cost accounting was not feasible for institutions of higher learning but that "cost analysis" was vitally important. It is difficult to see the distinction that he draws between the two; for he continues into a lengthy discussion of computations of costs per unit

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[31]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., pp. 167-169.

[32]Ibid., p. 129.

and allocation of overhead costs to the operating or instructional departments.[33]

Wells stated the controversy surrounding cost accounting in these words:

> Cost control is the most provocative phrase in educational conversation. The educator's mind immediately points to the inability to measure the research and teaching capacity of the scholar. With equal conviction it is argued that you cannot measure quantitatively the contributions of the human mind. . . . Some day a confident cost accountant will be elected president of a university and the prejudices and traditions which retard the application of cost control in our field will be broken down.[34]

In contrast to Millett's observations, Scheps noted that increasingly large numbers of colleges and universities had more or less complete cost systems.[35] However, several years later, he concluded that there had been a failure to subject instructional expenditures to aggressive analysis. He noted the lack of quantitative measures of output of an educational institution and the fear of resentment on the part of faculties as being the primary reasons for this failure.[36]

The auditor of the University of Florida indicted accountants for not having sold the management of educational institutions on the need for cost accounting. He noted, as another reason for educational

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[33]Millett, op. cit., pp. 141-177.

[34]Harry L. Wells, Higher Education is Serious Business (New York: Harper and Brothers, 1953), pp. 5-6.

[35]Clarence Scheps, Accounting for Colleges and Universities (Baton Rouge, Louisiana: Louisiana State Press, 1949), pp. 265-286.

[36]Scheps, "Systematic Financial Analysis and Budgetary Planning as Aids in the Attainment of College and University Purposes," op. cit., p. 187.

institutions being behind in the use of cost accounting, the fact that taxpayers and donors have not been as exacting in their requirements of institutional management performance as have the stockholders of industries.[37] Harris also observed that the motivation for studying costs was not as great in colleges as in business; one reason being that institutions of higher learning do not normally tie prices to costs.[38]

Classification of Costs

Cost analysis begins with the classification and accumulation of costs by significant activities, departments, or other cost centers. Concern with meaningful classification of costs for colleges and universities brought about some of the earliest studies of their accounting and reporting. Underlying this concern was a desire for uniform reporting by educational institutions so that their financial characteristics could be compared.

The Carnegie Foundation for the Advancement of Teaching study, resulting in the publication of Standard Forms for Financial Reports of Colleges, Universities, and Technical Schools, in 1910, set out many concepts for college and university reporting that are still evident in currently recommended cost classifications. These suggested forms recognized functional, departmental, and object classifications as follows:

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[37]William E. Elmore, "Cost Accounting Can Save the College Money if it is Properly Used," College and University Business, XIV (February, 1953), p. 45.

[38]Seymour Harris, "Financing of Higher Education: Broad Issues," Financing Higher Education: 1960-70, ed. by Dexter M. Keezer (New York: McGraw-Hill Book Company, Inc., 1959), p. 45.

Instructional

College or school

Department

Object

Administrative and general

Object

Operation and maintenance of plant

Object

Treasurers of institutions were urged in this report to adjust their accounting records, if necessary, to render reports in the forms suggested.[39]

Recommended Uniform Chart of Accounts

The basic classifications of income and expenditures which were provided for in Financial Reports for Colleges and Universities have been carried forward almost intact to the revised edition of College and University Business Administration. The chart of accounts described in this book provides for the classification of expenditures in accordance with the structure shown in Figure 1. General operating expenditures are classified first to Current Funds, either restricted or nonrestricted. They are further classified by class, function, department (or other unit or activity) and finally by object.[40]

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[39]Standard Forms for Financial Reports of Colleges, Universities and Technical Schools, op. cit.

[40]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., pp. 223-236.

Fund	Major Function	Sub-Function	Department and Sub-Department	Object
Current Unrestricted or Current Restricted	Educational and General	Instruction and Departmental Research	School or College, Division, or Department (whichever levels are appropriate to the organization)	Salaries and Wages Supplies and Expense Equipment (expand as desired)
		Extension and Public Service	Continuing Education Research Bureau,Etc.	Ditto Ditto
		Libraries	--	Ditto
		Student Services	Registrar Dean of Students,Etc.	Ditto Ditto
		Operation and Maintenance of Plant	Administration Custodial, Etc.	Ditto Ditto
		General Administrative	Board President, Etc.	Ditto Ditto
		General Institutional	Alumni Office Auditing, Etc.	Ditto Ditto
		Organized Activities Sponsored Research Other Research Other Sponsored Programs Staff Benefits	(each activity) (each project) (each project) (each project) (each benefit)	Ditto Ditto Ditto Ditto --
	Student Aid	Scholarships Fellowships, Etc.	School or College Division, Department	--
	Auxiliary Enterprises	Residence Halls,Etc.	Individual units (as desired)	Salaries and Wages Supplies and Expense Equipment ((expand as desired)
Other Funds	(No provision for further classification)			

Source: National Committee to Revise Volumes I and II, College and University Business Administration, College and University Business Administration (Rev. ed., Washington, D. C.: American Council on Education, 1968), pp. 223-236.

Fig. 1--Classification of Expenditures in Educational Institutions

A detailed classification of transactions which effect the fund balances of other funds is not provided for.

Classification by Object

Although College and University Business Administration recognizes the value of object classification for management purposes, if done within the framework described above, some writers have downgraded its usefulness.[41] Russell asserts that classification by object is one of the least useful classifications because of the possibility of subterfuge in the description of objects in order to deceive.[42] It is not clear why he does not feel that similar deception would be possible in other types of classifications. Heywood also took the view that object classification was less useful than the other bases of classification and that its principal use was to conform to legislative requirements in state schools.[43] Apparently these writers did not believe that control from the standpoint of specific objects of expenditure was possible, but rather that control is possible only on a departmental or operating unit or activity level. This view regarding the insignificance of the object of expenditures is apparently related to the traditional emphasis on the stewardship function of having assurance that funds are expended for specified functions, organizational units, or activities as opposed to the control of the amount of expenditures.

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[41] Ibid., pp. 235-236.

[42] Russell, The Finance of Higher Education, op. cit., p. 123.

[43] Robert E. Heywood, "When Constructing or Revising That Manual of Accounts," College and University Business, XVIII (May, 1955), p. 52.

Classification by Function

The functional and departmental classifications provided by the suggested chart of accounts in College and University Business Administration lend themselves well to making use of responsibility accounting. Reports of actual and budgeted expenditures can be prepared at the department, subdepartment, or activity level and combined for functional level reports. Likewise, the costs that have been accumulated at each of these levels are available for further analysis and follow-up with a singularly responsible person.

Activity vs Budgetary Unit Concepts of Classification

At the same time that the chart of accounts provides for accumulation of costs by cost centers or responsibility centers, there has been a movement in recent years toward identification of costs by specific activities all of the efforts for which may not originate within a department or responsibility center. Harper pointed out this need with regard to estimating the cost of a college's advancement or development program. He contends that a report of total expenditures for this purpose would include amounts that accepted accounting procedures may obscure. He further suggests that a complete report need not come directly from the accounting records but rather could consist of intelligent selection of estimated costs from various cost centers that are related to the advancement activity.[44]

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[44]John F. Harper, "Financing Higher Education-Financing Advancement," College and University Business, XLIV (February, 1968), p. 52.

A National Science Foundation study in 1965, pursued the concept of measuring the cost of activities of colleges and universities. This study points out the problem that the College and University Business Administration chart of accounts provides for the reporting of expenditures by responsibility centers rather than by activities when there may be several centers involved in a single activity. The former is referred to as the budgetary concept as opposed to the activity concept. It is held that the comparability of costs between institutions would be better under activity reporting because responsibility centers in different institutions might not include the same activities.[45]

The NSF study observes that the budgetary concept chart of accounts could be expanded to provide data for additional activity cost finding, but that there are practical limitations to this approach. The recommended solution is that sufficient data be accumulated about the resources with which institutional activities are carried out to make whatever allocations may be required to divide responsibility-center-oriented data among activities. The resources of an educational institution for which such data would be required are classified as manpower, facilities, and students.[46]

An ultimate report of costs by activities should be related to the conventional budgetary concept reports. There is no presumption that all costs can be related to specific activities; consequently there will be variances between total costs shown by each type of report.

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[45]National Science Foundation, op. cit., pp. 179-194.

[46]Ibid.

Variances may be investigated and reduced to a minimum with additional experience and analysis. The study recommends that the two concepts be related and projects that, if they are, institutions will be able to develop more sophisticated patterns of financial projection, control, and analysis than if only presently accepted accounting principles and practices are followed.[47]

The study goes on to suggest a list of institutional activities, relating it to the functional classification of expenditures in College and University Business Administration to the extent possible. The broadest classifications of activities suggested are:

Instruction

Teaching-Research

Research and Development

Creative Activity in Art and Scholarship

Teaching Through Creative Activity in Art and Scholarship

Public Services

Supporting Services[48]

These broad categories along with two levels of subclassifications may be compared to the functional classifications shown in columns 2 and 3 of Figure 1. The difference between them lies in the emphasis on activities in the former and emphasis on cost centers and methods of operation in the latter. The NSF study notes that the instruction activity is subsumed under the function of Instruction and Departmental Research in the College and University Business

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[47] Ibid

[48] Ibid., pp. 370-389.

Administration classification causing the isolation of instructional expense to be difficult. It concludes that this classification is one of convenience for gathering all of the activities of the teaching departments under one heading and that it does not recognize the increased significance of research activities within the instructional departments since World War II.[49]

The subject of activity cost analysis is to some extent a departure from the responsibility center approach to cost classification taken by the authors of College and University Business Administration. Its purpose is to attempt to establish the cost of the efforts or resources that are expended by an institution in terms of the various activities which make up its programs. The programs in turn must be evaluated in the context of their contribution toward institutional goals. The literature in the field of college and university accounting contains little on the subject. A related concept is the Planning, Programming, Budgeting System concept which is discussed in connection with the subject of budgeting.

Unit Costs

The classification of costs by cost center or activity provides only the crudest tool for control, planning, and decision-making. An administrator can tell little about the propriety of the total expenditures for an object, activity, or department unless he can relate the expenditures to a given quantity of output. As mentioned previously,

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[49] Ibid.

the emphasis in educational institution expenditure accounting has generally been on relating expenditures to sources of income rather than to output or production.

Nevertheless, there have been some who have pursued the concept of stating the output of educational institutions quantitatively and relating such quantities to expenditures to arrive at what are commonly called unit costs. This concept is analogous to accounting for the cost of each unit of production in a commercial enterprise that produces tangible goods. Computations of unit costs in a college or university may be applied in various ways but the underlying concept of each is to divide the number of units of output of a cost center or activity into the total expenditures of the cost center or activity in order to arrive at a cost for each unit of output.

Development of the Unit Cost Concept

Prior to 1910, the efforts in the direction of determining unit costs in colleges and universities can be summed up by reference to the act of dividing total expenditures of an institution by its enrollment to arrive at "per capita cost" for the year. Reckitt observed that this was a valuable means for comparing one year's performance against another.[50]

From 1910 to 1935

An early study involving the finding of costs for segments of an institution and dividing such costs by a unit of measure that could

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[50]Ernest Reckitt, "The Public Accountant and the Universities," Journal of Accountancy, I (December, 1905), p. 120.

be determined for that segment was done by Cooke, in 1910, for the Carnegie Foundation. Cooke's specific project was to find both the cost and the output of both teaching and research in the department of physics of eight major colleges and universities. He was an industrial engineer and the avowed purpose of the study was to see the problem of educational costs through the eyes of a businessman, rather than an educator.[51] Consequently, the unit-cost concept may have suffered non-acceptance by many educators because of its introduction by one outside the field of education.

The methods Cooke used consisted of virtually all of the concepts of contemporary unit-cost accounting systems. His study provided for the proration of faculty salaries to teaching, research, and other activities, determination of departmental expenses, allocation of overhead expenses, and the definition of a unit of production.

Arnett's book on college and university finance which appeared approximately 12 years later, and was considered for many years to be the authority on college and university accounting, made only a passing reference to unit costs and this reference was a reversion to the most primitive concept of total institution cost per student.[52] The subject of unit costs was pursued by some who were associated with the educational field during this period. The Dean of Administration of the University of Kansas published an article on the subject in 1923, which

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[51]Cooke, op. cit., p. 3.

[52]Arnett, op. cit., p. 124.

dealt quite satisfactorily with most of the pros and cons of unit costing which continue to be argued to this time.[53]

Stevens and Elliott devoted a complete book to the subject of unit costs in higher education in 1925. It was an exhaustive treatment dealing with background material which pointed up the need for more adequate cost data, a chronology of the development of interest in unit costs and their application, detailed methods of computing unit costs, and a discussion of the practical application of unit cost studies.[54]

The subject had gained sufficient respectability to have a chapter of Morey's University and College Accounting devoted to it in 1930.[55] In view of Morey's frequent pronouncements, which align him with the traditional stand of emphasizing the stewardship function of college and university accounting, this inclusion in his book does attest to the increasing recognition being given to unit costing. Even so, after describing procedures for determining unit costs, he closed the chapter by saying:

> It is obvious that all unit cost figures are open to question because of the many assumptions upon which they are necessarily based. It is obvious that they will change with every shift of enrollment, registration, salary scale, and price level. For that reason, comparisons of unit-cost figures, even when these figures have been computed in accordance with the same formulas, should be made only with great caution. . . . No institution should be without figures

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[53]F. J. Kelly, "Adequate Cost Analysis as a Basis for Budget Making," Journal of Educational Research, VII (May, 1923), pp. 410-420.

[54]Edwin B. Stevens and Edward C. Elliott, Unit Costs of Higher Education (New York: The MacMillan Company, 1925).

[55]Morey, University and College Accounting, op. cit., pp. 167-184.

> of unit expense of instruction; but they should be used only with due regard for their uncertainty and complexity.[56]

This shadow of doubt has continued to be associated with the use of unit-cost data by authorities in the field of educational finance.

The subject of unit costs came closer to the forefront when a detailed discussion of their uses, limitations, and methods of computations was included as an appendix to Financial Reports for Colleges and Universities, in 1935.[57] The committee which authored this publication explained its position with regard to unit costs as follows:

> In many cases, unit cost investigations have proved of value in the administration of the institutions in which they were conducted. In other cases, however, their practical value has been small. The failure of unit-cost studies to prove of great practical value in all cases may be due, in part at least, to the following facts: first, the lack of adequate and accurate procedure in conducting the studies; second, the failure properly to interpret cost figures; third, and perhaps of most significance, the failure to realize that merely the determination of unit costs does not solve financial and administrative problems.[58]

Following this position statement was one of the most detailed presentations of procedures for determining unit costs that has appeared in college and university accounting literature. In addition to detailed descriptions, there are approximately fifty illustrations of forms to be used for the various required steps. The system described provides for the distribution of all instructional and overhead expenditures down to the individual teaching departments and further for their allocation to student levels. Computations of the following unit

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[56] Ibid., p. 184.

[57] National Committee on Standard Reports for Institutions of Higher Education, op. cit., pp. 177-249.

[58] Ibid., p. 177.

costs are ultimately illustrated:

I. Cost per student credit hour for each department, division, and the institution of:

A. Teaching salaries

B. Teaching supplies and expense

C. Departmental administrative expense

D. Divisional administrative expense

E. Allocated administrative expense

F. Allocated library expense

G. Allocated physical plant operation expense

H. Lower division instruction

I. Upper division instruction

J. Graduate level instruction

II. Total cost of producing a specific degree, based on assumptions regarding representative elective courses.[59]

In addition, the value of computing unit costs for various activities within the overhead functions such as janitorial service or accessioning books was discussed but detailed procedures were not provided.

From 1935 to the Present

The U. S. Office of Education lent additional weight to the subject of unit costing when it published a study, in 1938, containing unit cost studies of nine large universities using the procedures

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[59] Ibid., pp. 177-249.

outlined in Financial Reports for Colleges and Universities. The purposes of this bulletin were stated to be to illustrate the use of a standard procedure for determining unit costs and to give the unit costs of instruction for specific institutions using such procedures.[60]

With World War II and the abatement of the depression, the interest in unit costs appears to have subsided. Scheps devotes a brief section to unit cost computations in his 1949 book along with the traditional warnings about their use.[61] College and University Business Administration, which succeeded Financial Reports for Colleges and Universities as the "official" guide to college and university accounting, did not include a description of procedures for arriving at unit costs. It discusses them briefly in a chapter devoted to a rather scanty discussion of allocation of indirect expenditures.[62] The revised College and University Business Administration, published in 1968, retreats even further by making no mention of unit cost procedures or of allocation of indirect expenditures.

The literature related to unit costs during the last twenty years has been in the form of periodical articles and brief discussions in books that have dealt with the general subject of higher education

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[60]U. S. Department of Interior, Office of Education, University Unit Costs, by John H. McNeely, Bulletin 1937, No. 21 (Washington, D.C.: Government Printing Office, 1938).

[61]Scheps, Accounting for Colleges and Universities, op. cit., pp. 292-304.

[62]National Committee on the Preparation of a Manual on College and University Business Administration, op. cit., pp. 120-134.

finances, as opposed to definitive works dealing directly with accounting for colleges and universities.

Criticisms of Unit Costs

The usefulness of unit-cost computations has been the subject of sharp debate since the subject was first introduced in a fairly sophisticated form by Cooke in 1910. Many of the criticisms have to do with the technical aspects of the computations, particularly, the definition of the proper unit of output, prorating instructors' salaries based on time spent in various activities, and the allocation of indirect expenditures.

Defining the Unit of Production

The unit of production most commonly used is the student credit hour. Under this concept the total production of an institution is determined by summing up the credit hours carried by each student enrolled. The total production of a department is the sum of the product of the number enrolled in each class in that department and the credit hours awarded in each class, or

$$SCH=\sum_{i=1}^{j} N_i C_i$$

where SCH is the total production of student credit hours, N is the number enrolled in each class, C is the number of credit hours awarded for each class, and j is the number of classes taught in a given department. Student credit hours may be converted to full-time equivalent students by dividing their total by the number of credit hours representing a normal full-time load for one student.

The SCH has been generally adopted after discarding the individual student enrolled and the student class hour as being unacceptable units. The SCH unit is not free from Van Dyke's criticism that the product of an educational institution is an educated man and that credit hours do not represent such a measure.[63] Other writers have leveled similar criticisms which can be summed up by the observation that such units do not reflect quality. This criticism could also be leveled against the units of production used in manufacturing plants; however, it is not generally claimed that the quality of the product is reflected in these units. Quality determination is generally considered to be an independent problem to be solved in industry and it appears that this should also be the case in education.

Allocation of Teaching Salaries

The second technical aspect of unit-cost procedures that is often criticized is the proration of instructors' salaries among teaching, research, administration, and public services. Such proration requires estimates of how each instructor spends the time for which his salary is paid. Both the subjectiveness of the estimates of how time is spent and the use of time alone as a basis for prorating instructors' salaries is criticized.

A possible solution to the latter criticism was suggested in a recent National Science Foundation study. In pilot tests made in this study, faculty members were asked to allocate their "effort" rather

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[63]George E. Van Dyke, "Let's Revise Our Ideas on Computing Costs," College and University Business, I (August, 1946), p. 36.

than time alone. They were instructed to consider, in addition to time, the degree of engagement of capabilities and the degree of intensity of application to arrive at per centages of "effort" devoted to their various activities. This concept was more acceptable to the faculty members participating in the test than the simple time concept.[64] The "effort" concept also meets the objections that faculty members do not all work the same number of hours and that they resent the "time clock" implications of reporting how their time is spent. No specific answer has been proposed with regard to the problems of the subjectivity of the measure. The problem of allocating instructors' salaries is avoided altogether if unit costs are computed only for the institution as a whole, or for the instruction and departmental research function under the assumption that no significant amount of faculty effort is devoted to functions other than instruction and research, or for instructional divisions under the same assumption.

Allocation of Indirect Expenses

The allocation of indirect expenses such as general administrative, plant operation and maintenance, libraries and student services represents the third technical problem in unit-cost computations that has stirred controversy. Lafevre questioned the usefulness of such allocations in a general criticism of Cooke's 1910 study of unit costing. He observed that no good purpose would be served and that the

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[64]National Science Foundation, op. cit., pp. 92-96.

results would probably be misused.[65] Conrad took a stand against the allocation of indirect expenses, using as his arguments that (1) the purpose of accumulating indirect expenditures into the original functional groups is to record the disposition of funds for which the institution is accountable, (2) educational departments are not generally evaluated on the basis of cost, and (3) the technical difficulties involved in arriving at a basis for distribution.[66] The Vice President and Controller of Wake Forest College questioned the usefulness of allocating all indirect costs in relation to "the great amount of trouble encountered in working out this sort of scheme."[67]

The subjectivity of the bases used for allocating indirect costs has also been pointed out as a weakness of unit costs. Morey's reference to "the many assumptions" on which unit-cost computations are based is related to the allocation of indirect expenses.[68] The fact that different bases of allocation have been applied at different institutions combined with the desire to compare costs between institutions appears to have cast doubts on the usefulness of unit costs, particularly when they include allocated indirect costs.

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[65]Arthur Lefevre, The Organization and Administration of a State's Institutions of Higher Learning (Austin, Texas: Organization for the Enlargement by the State of Texas of its Institutions of Higher Education, 1914), p. 157.

[66]Ernest M. Conrad, "The Case for Nondistribution of General and Plant Expense," College and University Business, XI (October, 1951), pp. 27-28.

[67]Robert G. Deyton, "Can We Afford to Allocate All Indirect Expenditures?," College and University Business, XXIV (April, 1958), pp. 43-44.

[68]Morey, University and College Accounting, op. cit., p. 184.

Recognizing Qualitative Factors

The most frequent and widespread criticism of the unit-cost concept has not been the technical aspect of the computation. The essence of this criticism was stated by Reckitt in these words, before the concept was popularized following Cooke's study:

> Unlike the ordinary factory or construction company, whose sole end is to manufacture or construct at the lowest cost, we may compare the college or university to the manufacture of some specially fine piece of machinery or tool, where the cost of the material or workmanship upon it is not a consideration, or to the construction of a palace or temple where the cost of the marble is only a consideration, insofar as the amount of money raised for its erection must not be exceeded.[69]

In one form or another, critics of unit costing in educational institutions over the last sixty years voiced the objection, implied in the quotation above, that the output of education cannot be measured quantitatively. Lefevre noted in his criticism of Cooke's study that the decision to offer a course or maintain a department should not be related to cost.[70] Kettler pursued this concept by asking questions such as:

> How can higher education determine what costs should be?
>
> How shall the end product be evaluated?
>
> Are higher costs the result of a better program or poor management?[71]

Sherer argued that the pursuit of lower unit costs would destroy the effectiveness of a faculty and that effectiveness was more to be desired

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[69]Reckitt, op. cit., p. 121. [70]Lefevre, op. cit., p. 158.

[71]Raymond W. Kettler, "What's Wrong With the Unit Cost Idea?," College and University Business, XIV (May, 1953), p. 17.

than efficiency in education.[72] More recently, Chambers argues that an incautious emphasis on cost accounting will foster uniformity and discourage new undertakings and innovation in course offerings.[73]

The assumption throughout these arguments that cost cannot be used as a measure of efficiency in educational institutions appears to be that any institution that would use costs as a tool would do so to the exclusion of all other considerations. For example, the fear is expressed that if unit costs are compared among departments that the heads of departments with higher costs will be castigated by management because it doesn't understand that factors other than efficiency enter into unit costs of different departments.

The critics imply that cost data is so used in commercial enterprises and that consequently it is not appropriate for educational institutions because of the differences in objectives. A better realization on the part of those associated with education that costs are not the sole factor considered by businessmen in their decisions would help them realize that other factors such as quality and service can be considered along with costs to arrive at balanced decisions in both industry and educational institutions.

Interinstitutional Comparisons

Another common attack on the use of unit costs is based on the assumption that their primary usefulness is in making comparisons with

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[72]Harvey Sherer, "U.I.C.'s are Dangerous," College and University Business, XVIII (February, 1955), pp. 39-40.

[73]Chambers, op. cit., pp. 72-73.

similar costs for other institutions. Christensen, the Comptroller of the University of Michigan, pointed out the differences among institutions with respect to their organization and programs they offer. After disposing of the possibility of benefits to be gained from interinstitutional comparisons of costs he discards unit costs altogether with the statement:

> If the administrator understands his job, he will not need unit-cost figures in internal administration.[74]

Russell lists the noncomparability of unit costs between institutions as one of the most valid criticisms. He cites the differences in classification of expenditures and methods of arriving at student enrollment figures as the factors behind this complaint. He adds that the purposes and programs as well as the size of institutions mitigate against interinstitutional comparisons of unit costs.[75]

There appears to be no wide divergence of opinion with respect to the limitations of unit costs in comparisons between institutions. It is unfortunate that many writers in this field have stressed the "great danger" of arriving at misleading conclusions through such unwarranted comparisons to the extent that the real values of unit costs have been underemphasized. One line of reasoning that appears to have developed is that there is sufficient uniformity in commercial accounting practices and homogeneity among certain types of businesses to make intercompany comparisons of unit costs both commonplace and useful; and

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[74]John C. Christensen, "Unit Costs," Journal of Higher Education, XII (December, 1941), pp. 464-466.

[75]Russell, The Finance of Higher Education, op. cit., pp. 147-149.

since educational institutions do not have uniformity in accounting practices nor homogeneity of organization and programs that interinstitutional comparisons cannot be made and that consequently unit-cost computations are dangerous. This logic assumes too much for uniformity and homogeneity among commercial enterprises and overlooks the more significant uses of unit costs in both commercial enterprises and educational institutions.

Advantages of Unit Costs

It is ironic that some who have attempted to downgrade the usefulness of unit costs have at the same time highlighted their real value. In his concluding paragraph, Christensen observed:

> Those who have given thought to this subject know that all any unit-cost scheme can do is to assist administrators in solving their problems by calling attention to places where further investigation may be necessary.[76]

Van Dyke, in describing the "pitfalls and difficulties" in the use of unit cost data stated:

> . . . we learned that the average salary level of our instructional staff, the class size or ratio of instructional faculty to student body and other similar factors were the important causes of high or low unit costs.[77]

Chambers discusses several factors that effect unit costs such as class size, level of instruction, and faculty salaries and then concludes:

> These are a few of the background facts which support the conclusion . . . that no matter how meticulously unit costs of instruction may be computed, they prove exactly nothing about either efficiency or economy in higher education.[78]

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[76]Christensen, op. cit., p. 500. [77]Van Dyke, op. cit., p. 35.

[78]Chambers, op. cit., pp. 65-72.

Conclusions such as those quoted, instead of destroying the unit-cost concept in education, reveal its primary usefulness. Much of the degradation of the unit-cost concept appears to be based upon a phrase, taken out of context, in the appendix to Financial Reports for Colleges and Universities which attempts to explain why some unit-cost studies have not been of practical value. This phrase is " . . . the failure to realize that merely the determination of unit costs does not solve financial and administrative problems."[79] This discussion continues to describe how determinations of unit costs can be used as a valuable tool:

> Variations in costs between departments of instruction, schools and colleges, curriculums, and levels of student achievement, or variations in costs for the institution as a whole over a period of years, should lead at once to a further examination of the factors that determine costs. Chief among these factors are the following: size of enrollment, size of classes, number of faculty members, curricular offerings, and efficiency of use of the facilities of the educational plant. Unit-cost studies, furthermore, may be of value in the determination of desirable reorganization within an institution.[80]

It is unfortunate that this discussion of the purpose of unit-cost studies has escaped the attention of many who have had an influence in the area of managerial accounting for colleges and universities. It is also unfortunate that the latest revision of the present-day counterpart to this publication contains no reference to cost accounting for the educational and general function of educational institutions.

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[79]National Committee on Standard Reports for Institutions of Higher Education, op. cit., p. 177.

[80]Ibid.

Even though the pronouncements of the committee representing colleges and universities in the area of business administration and some of the publications by individuals have downgraded the use of unit costs in recent years, there has been an upsurge in the appearance of articles and other references by individuals which has revived interest in cost accounting in educational institutions in the last ten years. It is not that the recent advocates of unit-cost procedures have discovered uses for such data that were unknown in earlier years. Kelly's description of unit-cost procedures at Kansas University in 1923, highlighted their usefulness for bringing attention to the factors underlying cost variations.[81] Stevens and Elliott gave detailed discussions of the factors affecting costs which cost studies would help isolate. These were teaching load, research load, salary levels, faculty-student ratio, class size, and efficiency of plant use.[82]

Stevens wrote several years later, in answer to Christensen's criticisms that unit-cost information along with appropriate explanations of higher or lower costs were valuable in obtaining support from governing bodies and benefactors, especially because such figures could be compared to the fees paid by students. He implied that laymen would be wiser than to insist that all departments should have identical and low unit costs.[83] The business manager of Emory University took the

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[81]Kelly, op. cit., pp. 416-417.

[82]Stevens and Elliott, op. cit., pp. 113-120.

[83]Edwin B. Stevens, "The Functions of Unit Costs," Journal of Higher Education, XIII (December, 1942), pp. 479-482.

positive stand that not all academic leaders feared that unit-cost information would be misused. He noted though that college and university business officers often retarded their cost accounting activities in order to keep from appearing to disagree with the opposition and he encouraged them to engage in this important phase of institutional management.[84]

Tyndall and Barnes made one of the more enlightened analyses of unit-cost studies in discussing their work at the University of California. In speaking of the resurgence of interest in such studies, they asserted that the tremendous growth in higher education has stimulated interest in data from which future total costs can be estimated. They spoke also of the necessity of using control devices to aid in achieving maximum results from limited financial resources. The persons responsible for "controlling," whether they are faculty or administrators, require attention-directing mechanisms in order to know when and where action is required. Unit costs serve as such a mechanism when they are compared to some standard such as (1) similar activities in the same school, (2) similar activities in other institutions, and (3) historical data for the same activity.[85]

The introductory sentence in a 1968 periodical article indicates the status of college and university cost accounting after over 50

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[84]Charles O. Emmerich, "Business Officers Should Act Now," College and University Business, XX (January, 1956), p. 17.

[85]D. Gordon Tyndall and Grant A. Barnes, "Unit Costs of Instruction in Higher Education," Journal of Experimental Education, XXXI (December, 1962), pp. 114-118.

years have elapsed since its introduction. It was: "Whether we like it or not, the trend toward cost accounting for higher education is here."[86]

Factors Underlying Unit Costs

Unit-cost computations have served a purpose when they are compared to some standard and deviations are determined. Pursuit of the causes of the deviations and the evaluation of their propriety is another project. Two of the major factors underlying the level of unit costs and their deviations from standards or norms are teaching loads and utilization of plant. Managerial accounting for an educational institution includes analysis of how changes in these factors effect costs.

Faculty Work Loads

Teaching loads are reflected by the faculty-student ratio. The faculty-student ratio for a given enrollment level is determined by the number of courses offered and the quantity of courses taught by each instructor. The broader term "faculty work loads" includes nonteaching assignments such as research and administrative assignments. Assuming that unit costs of instruction have been computed for an institution, several questions may be asked that would require additional analysis, such as: Why did they go up (or down) from the previous year? Why are the unit costs for Department A higher (or lower) than those of

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[86]Frank J. Zanfino, "Get Ready for Cost Accounting," College and University Business, XLIV (April, 1968), p. 57.

Department B? What steps can be taken to reduce the unit costs of Department A by a specific amount? The factor of salary level changes or differentials can be isolated rather quickly. The factor of productivity requires analysis of teaching loads.

In his introductory remarks at a conference on the subject of faculty work loads in 1959, Stickler noted that many educators " . . . feel that a well-considered, though imperfect, quantitative measure of faculty load is better than no measure at all."[87] Indications are that the accountants or financial officers of educational institutions have not taken the initiative in providing the quantitative "production" data which make up teaching loads.

Hicks speculated that the study and adjustment of faculty work loads might be the most important method of reducing unit costs of education. He reaches this conclusion after discarding the possibilities that salaries may be reduced, price levels will decline, or that less expensive teaching devices will be an important source of expense reduction. Even more importantly, faculty load is one of the few factors over which administrators have some measure of control.[88] Russell emphasized this view by noting that more than half the budget for educational and general purposes is expended on the instruction function and that faculty salaries were the principal item within this

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[87]W. Hugh Stickler, "Working Materials and Bibliography on Faculty Load," Faculty Work Load, ed. by Kevin Bunnell (Washington, D. C.: American Council on Education, 1960), p. 81.

[88]John W. Hicks, "Faculty Work Load--An Overview," Faculty Work Load, ed. by Kevin Bunnell (Washington, D. C.: American Council on Education, 1960), p. 5.

function. Thus, the sheer size of these expenditures suggests the possibility of economy in this area.[89]

Measurement of Work Loads.--One common denominator of teaching loads that is used as a standard or for comparisons among teachers is the total student credit hours per teacher. This total is arrived at by using the same formula that is explained on page 57; however, in this instance "j" would indicate the number of courses taught by an individual teacher. Variations may be made to this formula which reflect the relative difficulty of preparing for and teaching certain courses, teaching multiple sections of a course, discrepancies between class hours and credit hours required for a course, greater effort required the first time a course is taught, the method of presentation appropriate for a course, and the academic level of a course. Stickler cited several references to the development of faculty load formulas over a period of many years, concluding that although they had been widely promulgated, they had not been widely accepted.[90]

Doi emphasized that the collection of faculty load data should be a continuing rather than a one-time or sporadic effort. He illustrates this point as follows:

> Oftentimes critical issues or problems that are suggested by faculty load studies cannot be answered in six months, or a year, or even five years. For example in a small institution, faculty load studies might show a large number of small uneconomical classes, but for the institution to offer a broad enough range of courses

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[89]Russell, "Dollars and Cents: Some Hard Facts," op. cit., p. 283.

[90]Stickler, op. cit., p. 90.

> to attract students, it may have to maintain some of these classes. Only by enrolling more students would it be able to have larger classes. This may take several years to accomplish.[91]

Course proliferation.--Proliferation of courses is perhaps the most often cited culprit which tends to decrease the student-faculty ratio and, consequently, increase unit costs of instruction. The president of Wesleyan University recently described the problem of inefficiencies in education in the following language:

> Most notable, perhaps, is the lushness of the curriculum. New courses miraculously spring into being every fall and they seldom fade away. Pruning is resisted and rare.[92]

McGrath and Meeth were critical of course proliferation in liberal arts colleges, both from the standpoint of educational value and the corresponding reduction in average class size. They note that when a large number of course offerings is coupled with the customary mortality rate of students between the freshman and junior years the result is often classes of five or fewer students. They make use of a ratio of credit hours offered to the number of students enrolled as a measuring standard for course offerings.[93]

Ruml's Memo to a College Trustee is perhaps the best known discussion of faculty teaching loads and their relationship to costs.

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[91]James Doi, "The Use of Faculty Work Load Data Within an Institution," Faculty Work Load, ed. by Kevin Bunnel (Washington, D. C.: American Council on Education, 1960), p. 90.

[92]Etherington, op. cit., p. 9.

[93]Earl J. McGrath and L. Richard Meeth, "Organizing for Teaching and Learning: The Curriculum," Higher Education: Some Newer Developments, ed. by Samuel Baskin (New York: McGraw-Hill Book Company, 1965), pp. 36-37.

He does not deal with the accounting aspects of analysis of course offerings, class size and hours taught per instructor; however, he graphically describes the potential affect on costs of substantially increasing the student-faculty ratio by reducing the number of courses offered and increasing the average class size.[94]

In spite of the broad recognition of the relationship between teaching loads and unit costs of instruction, there is little in the literature with respect to college and university accounting that suggests that the accountant should assume responsibility for accumulating "production" data. Those publications which have dealt with unit-cost analysis have not pursued the matter of whether the accountant should assume the parallel responsibility of accumulating "production" data and analyzing deviations of unit costs from some predetermined standard. Neither the first edition nor the revised edition of College and University Business Administration discusses the use of teaching load data in analyzing costs or methods of computing teaching loads. In a paper describing the finance officer's role in planning, Erfft placed the responsibility for obtaining faculty work load data and relating it to costs directly upon the business officer.[95]

In order for unit-cost information to be meaningful, it appears that managerial accounting methods must be expanded to include the gathering of "production" or teaching load information and the use of

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[94]Ruml, op. cit.

[95]Kenneth R. Erfft, "Finance Officer's Part in Future Plans," College and University Business, XXV (August, 1958), p. 26.

such information for interpreting the results of unit-cost computations.

Utilization of Plant

Another quantitative factor underlying cost behavior is the utilization of the educational plant. This factor is related to the financial management of an educational institution in two respects. One is with respect to the need for funds for obtaining new plant and the other is with respect to the effect on unit costs of plant operation and maintenance of variations in "production" for a given amount of costs. Space utilization analysis may be approached from the standpoint of either the percent of classroom utilization during a given semester (or other period) or the portion of a calendar year that facilities are used.

The low utilization of educational plants has been one of the principal factors cited as indicating inefficiency in the management of higher education. Heneman observed that it was not unusual to find classrooms and laboratories used only forty to fifty per cent of the available hours during the week.[96] Hill and Kelly cited utilization of rooms as an area for possible economy when they analyzed means by which institutions of higher education could economize during the depression of the 1930's.[97]

Space utilization study methods and procedures are well developed and any institution that wishes to adopt such studies can find

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[96]Heneman, op. cit., p. 131.

[97]Hill and Kelly, op. cit., pp. 102-103.

adequate literature for guidance. One of the most complete manuals on the subject is Russell and Doi's Manual for Studies of Space Utilization in Colleges and Universities.[98]

At a given point in time, the number of students and the classrooms available are fixed, consequently utilization cannot be changed by classroom scheduling procedures. The principal use of space utilization data is to devise means of measuring past or potential cost savings over a period of time through higher utilization as opposed to increasing the educational plant.

Utilization can be increased by extending the hours during each week that classes are offered and by extending the academic year to a full calendar year. Stickler studied the subject of extending the academic year and concluded that there is reasonable assurance that the unit cost per full-time-equivalent student would be decreased by changing to year-round operations.[99]

There are indications that the financial officers of educational institutions have not been closely associated with space management and that they have not regularly used such information to interpret or analyze cost data. College and University Business Administration makes no reference to the utilization of space and the relationship of such utilization to costs.

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[98]John Dale Russell and James I. Doi, Manual for Studies of Space Utilization in Colleges and Universities (Athens, Ohio: American Association of Collegiate Registrars and Admissions Officers, 1957).

[99]W. Hugh Stickler, "The College Calendar: What Kind of a School Year?," Higher Education: Some Newer Developments, ed. by Samuel Baskin (New York: McGraw-Hill Book Company, 1965), p. 243.

Many other factors contribute to the behavior of unit costs. Teaching loads and facilities utilization are discussed individually here because they lend themselves to policy guidelines and educational literature deals with them rather comprehensively. Much of the literature that exists on the subject of unit costs and these two underlying factors cannot be considered to be "accounting literature" since the work has been done by nonaccountants. It appears that for maximum usefulness to result from the knowledge that exists, that the financial officers of educational institutions should assume the responsibility for complete managerial accounting and reporting that includes the analysis of the underlying factors as well as the computation of unit costs.

Cost-Volume Relationships

Some who have written about the problems of finance in higher education and rapidly increasing enrollment levels have concluded that individual institutions could not afford to accept more students because they were already "losing money" on each student enrolled. A few have recognized that in some instances, greater enrollments would be beneficial. The literature on college and university accounting provides little assistance in determining which view the administrators of a particular institution should take. Although several writers have touched on the fact that the relationship of unit costs and enrollment levels may not be a straight line, none of the publications that are considered to be texts on college and university accounting deal with this type of cost analysis.

Russell made the generalization that:

> Certain administrative functions, it seems, do not correspond in scope to the number of students enrolled and must be performed regardless of the size of the institution.[100]

Recognition of Fixed Costs

In discussing the use of unit costs for planning expansion Russell noted that certain expenses wouldn't increase proportionately with an expansion in services offered.[101] In a discussion of financing plant expansion he alluded to fixed costs when he noted that, in accepting a gift of a new building, consideration should be given to the effect of the operation and maintenance of the new building on the current budget.[102]

Millett carried this reasoning further when he mentioned the "basic cost" of operation of the instruction function to explain the lack of a straight-line relationship between costs of instruction and enrollment. He defined the "basic cost" of instruction as the cost of maintaining the staff that would be required " . . . to provide a full course of instruction for the usual period of time to a stated number of students." He illustrates this point by assuming that a four-year liberal arts college would require a minimum of twenty-five faculty members. Further assuming a student-faculty ratio of 13:1, 325 students could be served. If enrollment fell below 325, no reduction in instructional expenses would be possible. Millett concluded this discussion by stating:

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[100]Russell, The Finance of Higher Education, op. cit., p. 135.

[101]Ibid., p. 151. [102]Ibid., pp. 377-378.

> Thusfar almost nothing has been done to develop these concepts of basic and incremental costs for instructional programs but such analysis would seem to offer much promise for future cost studies.[103]

In a later discussion of future cost expectations, Millett noted that certain expenditures other than instruction fluctuated independently of enrollment. He estimated that on a macro basis a ten per cent reduction in enrollment would result in a five per cent reduction in costs and vice versa. He does not pursue methods for determining this relationship for individual institutions.[104]

Incremental or Marginal Costs and Revenues

Ostheimer analyzed the theoretical relationships between costs, volume, and income from students in a study aimed primarily at determining the price elasticity of demand for higher education. Under the assumption that it is desirable to obtain a more favorable relationship between total income from student charges and total education expenditures, it is necessary to know how total costs vary with volume as well as how volume (and consequently total income from student charges) varies with changes in price. He stated that to attempt to derive cost-volume relationships was beyond the scope of his study but he did make some generalizations. The first of these was that since, in 1950, about one-half of the educational and general expenses of colleges and universities were for administration, plant operation and maintenance, research, libraries, and extension services, that expenditures are very

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[103]Millett, op. cit., pp. 149-150.

[104]Millett, op. cit., pp. 271-272.

unresponsive to changes in enrollment in the short run. Consequently, if more students enroll, additional expenditures for these purposes will certainly be only a fraction of the additional income from fees. The remaining half of the educational expenditures consists largely of faculty salaries which tend to vary with enrollment levels but are "sticky" because of tenure agreements, a general reluctance to see anyone fired, the presence of specialists whose services are required regardless of the number of students, and possible loss of approval by accrediting, professional, or other organizations. Certain of the non-overhead expenses may be prevented from increasing proportionately with enrollment increases by making use of idle capacity or changing policies with respect to teaching loads and space utilization.[105]

Ostheimer also alludes to the fact that the income of most colleges consists of both fixed and variable components. In the case of private colleges, endowment earnings and gifts and grant income are independent of enrollment level in the short run. The presence of the fixed income components results in a declining per-student income when enrollment increases. Ostheimer concludes that it is erroneous to assume that it is disadvantageous to enroll more students because the average per-student income is declining or because average per-student income is less than average per-student expenditures. As long as marginal revenue exceeds marginal expenditures, it is advantageous to increase enrollment, ceteris paribus.[106]

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[105]Richard H. Ostheimer, Student Charges and Financing Higher Education (New York: Columbia University Press, 1953), pp. 62-68.

[106]Ibid.

Isolating Fixed and Variable Costs

Woodburne observed that in attempting to point out the differences between educational institutions and commercial enterprises that their representatives had overlooked the similarities. He used this introduction to present a method that he had devised for arriving at the fixed overhead costs of a college or university. In order to prove the existence of fixed costs, and their level, at the University of Washington, Woodburne plotted total costs against enrollment levels for two actual observations (years) and two assumed levels of enrollment and arrived at a free-hand plot that indicated a leveling off of total costs at lower enrollment levels. He also approached a proof of the presence of fixed costs by analyzing the minimum staff that would be required in several departments to service a reduced enrollment level in each department. In each case, he showed that the proportion of current expenditures that would be required was substantially greater than the proportion of current enrollment for which the expenditures were assumed.[107]

The primary use that Woodburne saw for this concept was to show outsiders that a university budget should not be based on a fixed cost per student.[108] He did not approach the cost-volume relationship from the viewpoint of analyzing the individual classes of expenditures as to their fixed or variable nature.

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[107]Lloyd S. Woodburne, "A Method of Calculating Fixed Overhead Charges," College and University Business, XII (March, 1952), pp. 27-30.

[108]Ibid., p. 30.

Young discussed the fixed or variable nature of certain college expenditures. He noted that the costs of maintenance and operation, utilities, and certain general institutional costs are considered fixed, whereas instruction is an example of a variable cost. Young continued that incremental costs should be taken into consideration in making decisions such as establishing the desired level of enrollment of a college.[109] Arriving at incremental costs implies that certain costs are fixed regardless of the decision at hand.

One college that Young studied used past cost and enrollment level relationships as a basis for long-range forecasts. They are based on the premise that " . . . certain . . . expenses vary with student enrollment and . . . others do not vary, or, if they do, it is to a lesser extent." He reports that in this case the various expenses are analyzed individually in terms of variability with enrollment.[110] This publication is one of the most direct references to applying cost-volume analysis to educational institutions; however, it does not establish any procedures or offer any concrete examples of their application.

In another paper at approximately the same time, Young pointed out the possible disastrous effects upon the current funds budget of accepting gifts restricted to use for new construction.[111] He was

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[109]Harding B. Young, "Certain Cost Concepts," Journal of Higher Education, XXXIX (February, 1958), pp. 90-92.

[110]Ibid., pp. 94-116.

[111]Harding B. Young, "An Approach to Capital Budgeting," College and University Business, XXIV (March, 1958), p. 26.

emphasizing the fixed nature of the costs of operating new buildings, regardless of whether a corresponding increase in enrollment results.

Capacity Considerations

Advocates of year-round operation of colleges and universities rest their case, at least partially, upon the belief that the incremental costs of the extended college calendar will proportionately be less than normal school year costs. Stickler discussed the advantages of year-round operation in terms of distributing fixed costs over more units of educational output as follows:

> Some 35 percent of the average college or university budget in this country goes to overhead, and it remains constant whether the academic calendar operates nine, ten, eleven, or twelve months a year. Year-round operation distributes overhead costs over a larger volume of educational accomplishments, and the relative cost of overhead per unit goes down.[112]

Even though it can be intuitively reasoned that unit costs will decline with a longer college calendar (assuming students are available to utilize the additional services offered), this is not a sufficient basis for adopting a longer school calendar. The variable cost per unit of output may still exceed the variable income per unit, in which case the net effect on financial operating results would still be negative. Consequently, the amount of fixed expenses and variable expenses per unit must be determined with some degree of accuracy before a change in the college calendar can be evaluated from a financial standpoint.

Other references to cost-volume relationships in the literature are of a general nature, such as Russell's observation that some

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[112]Stickler, "The College Calendar: What Kind of School Year?," op. cit., p. 227.

colleges do not have sufficient enrollment for efficient operation, Tickton's assertion that private institutions cannot survive at their present size, Chambers' statement that a college with insufficient enrollment can add a marginal number of students without additional expense, and Gibson's discussion of a minimum faculty for a liberal arts college and the minimum enrollment to sustain it.[113] In spite of the fact that so many educators have recognized the general effects of the fixed or variable nature of expenditures, methods for analyzing cost-volume relationships and the various uses that can be made of the results have not been spelled out in the literature pertaining to educational institutions.

The conceptual and methodological problems involved in making cost-volume analyses in a private liberal arts college, and the uses of such data are explored more specifically in Chapter V.

Budgeting

In his 1922 book on the subject of college and university accounting, Arnett listed among the common defects of academic financing and accounting, " . . . the absence of a budget system which tends to keep expenditures within the limits of income."[114] There is evidence

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[113]Russell, "Dollars and Cents: Some Hard Facts," op. cit., p. 275.

Tickton, reply to comments on his paper, "Planning for Institutions of Higher Learning," op. cit., p. 246.

Chambers, op. cit., p. 12.

Raymond C. Gibson, Challenge of Leadership in Higher Education (Dubuque, Iowa: Wm. C. Brown Company, 1964), p. 174.

[114]Arnett, op. cit., p. 9.

to indicate that since that time the use of annual budgets has become one of the commonplace managerial accounting tools used by colleges and universities. Morey stated in his book approximately ten years later that the budget had become a practical necessity in colleges and universities because of the fixed nature of their income. He also attributed usefulness to a budget for aiding in observing the restrictions on trust funds.[115]

The fact that the budget had become a practically universal administrative procedure in educational institutions was noted by Millett; however, he was critical of the fact that the emphasis in budget-making had been on balancing revenues and expenditures. He suggests that the broader uses of the budget process should be review of educational objectives, determination of whether available resources are being used in the most efficient manner for achieving the desired objectives, and for acquainting faculties with the financial aspects of the institution. Another major deficiency in the budget process observed by Millett is its year-to-year character as opposed to focusing attention on longer-term developments.[116]

Rationalizing Budget Amounts

Rourke and Brooks characterized the budget practice commonly used as being to give to each department at least as much as it received in the previous budget. This amount serves as a base upon which

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[115]Morey, University and College Accounting, op. cit., pp. 9-10.

[116]Millett, op. cit., pp. 226-227.

negotiations are begun and that only rarely are the merits of the base budget successfully questioned. A second restraint upon rational budgeting procedures, that they observed, is related to the concept of equity in resource allocation; that is, if a budget concession is made to one department, similar concessions are expected by other departments on the basis of equity, as opposed to merit.[117]

Heneman, a partner in an educational consulting firm, pointed out the need for developing supporting data on which budget decisions can be based, such as workload data, unit-cost information, and standards for maintenance of facilities. The use of such data, as opposed to arriving at budget amounts by negotiation or basing them on the prior year amounts, facilitates the job of identifying the purposes or activities for which expenditures are planned.[118]

The Western Interstate Commission for Higher Education convened a seminar to discuss the use of formulas in making objective reviews of college and university budgets. The observation was made in this study that university administrators in general feel that the use of formulas would inhibit or confuse straight thinking about educational demands and that they generally viewed them with skepticism. It went on to say that the question was no longer whether to use formulas in budgeting but rather what kinds of formulas are useful in what areas,

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[117]Rourke and Brooks, op. cit., p. 75.

[118]Heneman, "Goals and Techniques of Business, Industry, and Government that May be Applicable to the Administration of Higher Education," op. cit., pp. 182-183.

under what conditions, and with what precautions.[119] Analysis of the experiences in the use of formulas which were related at the seminar suggested that the following factors in higher education have most often been translated into formulas:

I. Persons
   A. Their number
   B. Their financial value
   C. Their activities
II. Buildings
III. Equipment
IV. Books

These factors are usually related to enrollment level or student credit hours produced. The "base formula" approach provides for arriving at a formula for one activity, generally instruction, then relating the formulas for all other activities to that base. The "formula by function" approach derives separate formulas for each activity, requiring a unit of production for each activity that can be related to the elements of cost.[120] It was finally noted that formulas should be sensitive to differences between departments or activities and that they should be flexible, having the capacity to change in part while retaining their useful structure.[121]

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[119]Western Interstate Commission for Higher Education, Yardsticks and Formulas for University Budgeting (Boulder, Colorado: Western Interstate Commission for Higher Education, 1959), pp. 2-3.

[120]Ibid., pp. 46-50.

[121]Ibid., pp. 58-62.

In their study of the allocation of academic resources, Rourke and Brooks reported that there is an unmistakable trend toward the use of formulas, cost analysis, and other new methods of displaying fiscal data. They state that the use of program budgets as opposed to object or line-item budgets has been the principal change in budgetary procedures. This concept is discussed further in a later section. They conclude that the transition to program budgets and the development of techniques in cost analysis and formula budgeting form a basis for more objective resource allocation. In this study of state universities, they found that 81 per cent used some quantitative cost analysis in budget preparation.[122]

Both the original and the revised editions of College and University Business Administration devote a chapter to budgeting and there is little difference between the two.[123] The discussions are general and philosophical, dealing primarily with the need for budgeting procedures, the responsibilities of the various administrators and the governing board, and generalizations with respect to estimating revenues and expenditures. It is suggested that:

> Guidelines, such as student-faculty ratios, class size, teaching loads, and staffing patterns may be helpful, but the use of rigid formulae should be avoided.[124]

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[122]Rourke and Brooks, op. cit., p. 72.

[123]National Committee on the Preparation of a Manual on College and University Business, op. cit., pp. 23-33.

National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., pp. 155-164.

[124]Ibid., p. 160.

No suggestions are made as to how such guidelines might be developed and used and the context appears to discourage such usage.

Budget Reporting

It is further suggested that reports showing actual and budgeted income and expenditures should be provided to the appropriate budget units at least monthly.[125] The suggestion is not made that the budgeted income and expenditures be broken down by month in accordance with expectations of when they will occur. In fact, the inference throughout the literature on this subject is that such breakdowns are not common. Henrickson pointed out several years ago that unless this is done, budget reports will only be useful near the end of the fiscal year and furthermore that if they are not so broken down they cannot be used as a basis for cash forecasts.[126]

Planning, Programming, Budgeting Systems

A new concept in budgeting for colleges and universities is in the exploratory stage. It is commonly referred to as a Planning, Programming, Budgeting System, often abbreviated PPBS or PPB. The exploration of its use in colleges and universities follows its adoption in several departments of the federal government. The first "Hoover Commission" gave impetus to the use of this budgeting concept

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[125] Ibid., pp. 162-163.

[126] G. C. Henrickson, "The Real Job of the Accountant," College and University Business, VII (July, 1949), p. 4.

in the federal government.[127] Williams authored a study on behalf of the American Council on Education, in 1966, which explored the applicability of PPBS concepts to educational institutions.[128]

The PPBS concept differs from conventional budgeting concepts principally in that the programs or activities that will contribute to long-range objectives are selected from various alternatives and the budget is then stated in terms of the cost of those programs or activities. The programs may or may not conform to the conventional cost centers or activities upon which conventional budgets are structured.

The National Science Foundation study, Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities, devotes a great deal of attention to the identification and measurement of activities which may be subsumed in a conventional department or cost center or which may include elements of more than one department or cost center.[129] Such identification and measurement is an integral part of a PPBS system. It is discussed more fully under the heading, Classification of Costs, beginning on page 44 of this paper.

Glaze stated that the principal advantage of PPBS lies in its emphasis on the program and objectives to be accomplished rather than the items or services to be acquired. The major weakness that he noted

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[127]Commission on Organization of the Executive Branch of the Government, Budgeting and Accounting (Washington, D. C.: U. S. Government Printing Office, 1949), pp. 8-11.

[128]Harry Williams, Planning for Effective Resource Allocation in Universities (Washington, D. C.: American Council on Education, 1966).

[129]National Science Foundation, op. cit., pp. 370-389.

is that since such a budget tends to cut across departmental lines, it is difficult to understand by those whom it controls.[130] The Commission on Organization of the Executive Branch of the Government recognized this problem in applying PPBS concepts to governmental units and stated in its 1955 report:

> Although we emphasize the need for a program budget, we also stress the fact that it is but one part of an effective budgeting process and thorough reviews of past performance and accomplishments are necessary accompaniments of a program budget.[131]

Rathbun and Stein reviewed PPBS concepts in a publication describing its implementation at the University of Pittsburg. They contended that:

> The main claim of PPB(S) . . . is that it can help assign resources more effectively than the typical process because it provides a framework in which objectives and alternative means of accomplishing objectives are identified in a workmanlike manner and in which the budget is an important, purposeful management tool.[132]

They continue that PPBS begins with identification of long-term purposes and objectives followed by the formulation of short-term detailed programs designed to achieve these purposes and objectives. Budgeting under this concept is more than meeting the legal requirements and fiduciary responsibilities of handling money. They note further that the traditional budget is usually determined by past history

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[130]Thomas E. Glaze, Business Administration for Colleges and Universities (Baton Rouge, Louisiana: Louisiana State University Press, 1962), pp. 126-127.

[131]Commission on Organization of the Executive Branch of the Government, Budgeting and Accounting (Washington, D. C.: U. S. Government Printing Office, 1955), p. 29.

[132]Rathbun and Stein, op. cit., p. 62.

combined with an attempt to project ahead for a year or two, whereas the PPBS budget is determined by programs designed to accomplish planned objectives. Objectives should be specific and should not be firmly set until the cost of the programs required to achieve them is known. Furthermore, alternative programs for achieving the objectives should be examined, which implies that some form of cost-benefit and cost-effectiveness analysis must be practiced. They conclude:

> At best, PPB(S) will not optimize resource allocation on some grand scale, nor will our efforts even to suboptimize be completely successful. But even relatively uncomplicated efforts to lay out the specifics of future programs and relate inputs to outputs can point out problems that might not otherwise be discovered until a crisis arises.[133]

The Dean of the School of Engineering of the University of Santa Clara investigated PPBS and concluded that in 1968 such a system had not been developed for colleges and universities. He analyzed the potential of PPBS and observed that to be a complete system information about actual performance, both with respect to cost of programs and their contributions toward objectives, must be obtained to close the loop wherein PPBS becomes a continuous process which is modified and redirected as experience dictates. He lists the following steps for implementing it:

1. Long-range planning.
2. Multiyear financial projections.
3. Program identification.
4. Input and output assignments.

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[133] Ibid., pp. 62-65.

5. Cost-benefit analysis.

6. Resource allocation decisions.

7. Performance monitoring.

8. System feedback.[134]

Etherington and Vancil reported on the early stages of the installation of PPBS at Wesleyan University, making the observation that although the existing budgeting system had worked well, it would be recast at the summarization level in terms of major programs and activities even though they may cut across organizational lines. Thus, the administrative budget and the program budget are tied together so that program changes must be reflected in and controlled by the administrative budget. They describe the identification of the program elements as the bedrock operation in PPBS.[135]

There is little definitive material written about the application of PPBS to educational institutions. Though several schools are considering or even taking initial steps towards the installation of such a system, none can be said to be operational. The revised College and University Business Administration makes a brief reference to the emergence of "elaborate techniques" commonly referred to as program budgeting but it goes no further.[136]

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[134]Robert J. Parden, "What a Planning, Programming, Budgeting System Might Contribute to a University," Santa Clara, California, 1968, pp. 1-5. (Mimeographed.)

[135]Edwin D. Etherington and Richard F. Vancil, "Systems and Simulations: New Technology Goes to Work in Decision-Making," College and University Business, XLVI (March, 1969), pp. 57-58.

[136]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., p. 156.

In summary, the literature indicates that the practice of budgeting is fairly commonplace and that the mechanical process of putting the annual budget together has been worked out on a generally acceptable basis. There are indications that there was not a great deal of research in methods for arriving at greater precision or justification in budgets until the recent efforts to adopt PPBS to educational institutions.

Long-Range Financial Planning

Annual budgets which are conceived as the financial reflection of short-term programs or activities designed to contribute to long-term goals of educational institutions are not commonplace. Although annual budgeting has been practiced by most colleges and universities for the last three decades, long-range financial planning has become the subject of widespread interest only in the last decade. Tickton's Needed: A Ten Year College Budget was the most significant factor in creating this interest. After reviewing many of the factors which had contributed to the financial problems of private colleges, Tickton proposed and illustrated the ten-year budget as a means of foreseeing and forestalling many of those problems.[137]

Ruml's classic Memo to a College Trustee was also a catalyst for bringing about projections of future financial results of operations. His viewpoint was narrower in that his principal contention was that existing trends in faculty loads would eventually bring about

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[137]Tickton, Needed: A Ten Year College Budget, op. cit.

insolvency. He argued that financial projections must reflect changes in policies with regard to the proliferation of courses in the curriculum and methods of instruction which would result in a higher student-teacher ratio.[138] Since these two publications there has been a considerable interest indicated in long-range financial planning.

The partner-in-charge of the Educational Administration Division of Booz, Allen & Hamilton prepared a comprehensive paper on long-range planning for colleges and universities. In a study of 831 colleges and universities, he concluded that the larger state supported institutions had done the most thorough job of forward planning and that their planning horizons were generally longer than those of private colleges. Less than a third of those included in this study have plans extending five years for any aspect of their operations. It can be assumed that not all of these had financial plans since this study included planning for other aspects of operations such as enrollment levels, faculty requirements and facilities requirements.[139]

Wilse sees financial planning as the culmination of a series of decisions regarding the desired objectives of the institution and the possible programs for obtaining those objectives. It is true that programs will be limited or altered by the amount of attainable funds, but he contends that if an institution inverts this process by selecting programs and objectives on the basis of available funds it gives up much of its control over its destiny. He illustrates the relationship of financial planning to overall institutional planning by the chart

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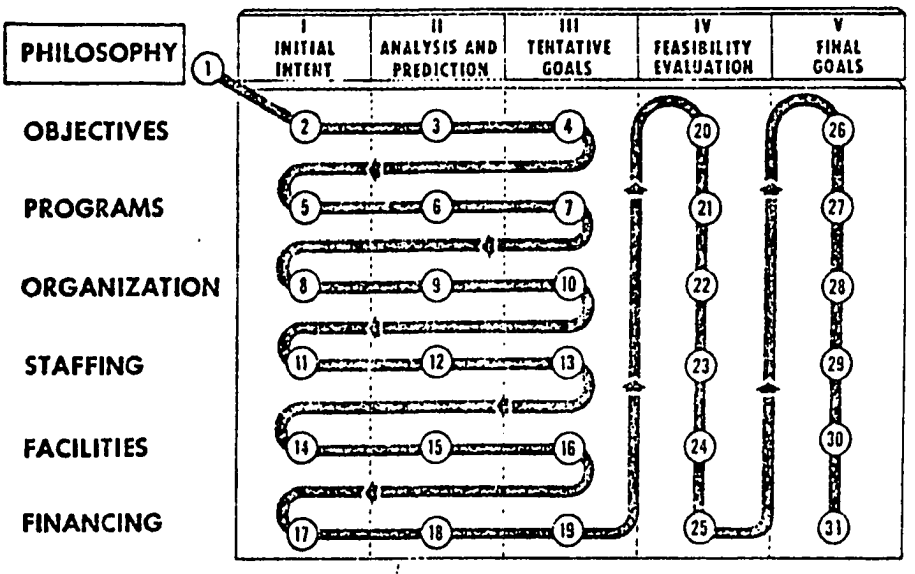
[138]Ruml, op. cit.

[139]Wilse, op. cit., pp. 9-10.

shown in Figure 2. This chart shows that the six intermediate planning steps between the institution's formulation of a basic philosophy and the final financing of its operations must each be traced through the steps of initial intent, analysis and prediction, and tentative goals. Then a feasibility evaluation of each of the planning steps is made in light of available funds before final goals are adopted.[140]



Source: H. Lawrence Wilse, Long-Range Planning for Colleges and Universities (Chicago, Illinois: Booz, Allen & Hamilton, n.d.), p. 23.

Fig. 2--Long-Range Planning Steps from Basic Philosophy to Final Goals.

Heneman observed that long-range planning was equally as important for educational institutions as for businesses which spend a considerable amount of effort in that endeavor. He concluded that the

[140] Ibid., pp. 13-22.

culmination of overall institutional planning was the determination of the requirements for capital and operating expenditures.[141]

Bofferding, a member of a firm of educational management consultants, included in his list of ten common shortcomings of college business administration, the lack of good future planning. He observed that even in institutions which had made some efforts in planning the academic future and building needs, the business services had not developed corresponding financial plans.[142]

Conventional Methods

Tickton's classic discussion of long-range planning consisted principally of a case study approach to deriving a ten-year budget. His technique might be described as "brute force" in that it dwells on building a step by step structure, based on certain assumptions, which ultimately provides for estimating all of the significant components of income and costs. In other words he did not derive any generalized formulas or functional relationships that would be applicable under different assumptions. The process he describes necessitates starting from scratch with each set of assumptions. Following are the steps that he proposed and discussed in detail:

1. Assembling background data for ten years.

2. Assumptions for the future related to the country as a whole

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[141]Heneman, "Goals and Techniques of Business, Industry, and Government that May be Applicable to the Administration of Higher Education," op. cit., p. 182.

[142]Bofferding, op. cit., p. 53.

such as economic conditions and the propensity to attend college.

3. Assumptions for the future related to the college such as objectives, programs, and enrollment levels.

4. Making the ten-year projection in light of the historical data and assumptions.

5. Evaluation and conclusions regarding required actions indicated by the preceding steps.

Tickton concluded that if the indicated required actions appear to be impractical (such as raising an excessive amount of additional funds) that it might be necessary to go through the entire procedure a number of times with alternative assumptions.[143]

Tickton's procedure requires foreseeing future circumstances in great detail since it does not provide for establishing the relationships of the various costs to key variables which can be projected with a reasonable degree of accuracy. McTeer's dissertation was based on the belief that instructional salary costs are so significant that they should be subjected to a greater degree of analysis than Tickton's rule-of-thumb method. He hypothesized and concluded that long-term instructional salary budgets developed departmentally from an analysis of the causes of costs are more adequate than budgets developed from methods that predict aggregate salary costs for the entire instruction program. His study involved an examination of the relationships of the

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[143]Tickton, Needed: A Ten Year College Budget, op. cit., pp. 20-32.

characteristics of the programs of individual departments and the related departmental costs.[144]

The National Science Foundation study of systems for measuring activities of colleges and universities suggests that one of the principal uses of student data accumulated in the system is in making enrollment projections. Trends indicated by the data provide a basis for the allocation of predicted enrollments to departments within an institution and thereby make excellent data for long-range planning of resource allocations at departmental levels. When combined with data regarding teaching loads, distribution of ranks of teachers, and allowances for future policy changes, faculty costs can be projected.[145]

Furtado and Courey, in their comprehensive article on fiscal planning, noted that one of the benefits to be derived is that the fact that someone must provide decision criteria for use in costing future operations will cause some thought to be given to those criteria. Furthermore there is a tendency to continually evaluate such criteria to prevent them from becoming policy by default. Examples of the type of decision criteria to which they refer are types of program offerings, faculty loads, and the basis for estimating administrative staff needs.[146]

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[144]William Edward McTeer, "A Critical Analysis of Current Methods for Estimating Instructional Salary Costs in Long-Term Budgets for the Small, Private College," (abstract of unpublished Ph.D. dissertation, University of Missouri, 1969), p. 2.

[145]National Science Foundation, op. cit., pp. 396-400.

[146]Loren M. Furtado and Charles J. Coury, "Fiscal Planning: Financial Guide to Decision Making," College and University Business, XXXIX (August, 1965), pp. 39-43.

These writers point out three major factors to keep in mind in fiscal planning. They are flexibility, the need for comprehensive coverage of activities, and program offerings. With regard to flexibility, they note that the formulas must be flexible enough to permit making changes resulting from changed political, social or economic conditions, as well as to modify estimates to reflect major policy decisions. Policy guidelines and decision criteria are necessary because projecting without them is merely forecasting rather than planning, according to these authors. With regard to comprehensive coverage of all programs and activities, they assert that long-range financial planning has tended to neglect cost areas not directly related to student enrollment and that causal relationships must be established for the operating costs of libraries, maintenance and operation of plant, general administration, and student services.[147]

Another viewpoint was expressed by Cuthbertson, of Stanford University, when he stated that they kept their long-range financial planning on a university-wide basis without attempting to make a school by school or department by department breakdown. He contends that to do otherwise tends to lead to disappointments within departments if their individual plans and hopes do not materialize. He further observes that such detailed planning takes a great deal of time and by

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[147] Ibid., pp. 40-41.

the time the institution-wide plans are completed some of the individual departmental plans are no longer realistic.[148]

Financial Simulation Models

A recent innovation in college and university administration that may be considered an extension of long-range planning techniques is the development of simulation models. Tickton's long-range planning technique may be considered a crude model inasmuch as it establishes certain parameters and fits assumptions about the future to them to arrive at projections.[149] In a similar manner Ruml constructed what he called "models of the possible" to show combinations of faculty, type of instruction, and salaries that would be possible under specific assumptions regarding enrollment level, tuition, and the student-faculty ratio.[150] These models neither lend themselves to easy manipulation nor do they allow for a significant number of variables about which assumptions can be made.

Simulation modeling took on significant aspects on college campuses with the advent of the computer. Caffrey and Mosmann found the use of simulation techniques of growing importance in their study of computer uses for colleges and universities. They observed that:

> With the help of a computer program which uses the existing data base, as well as estimates of the varying probabilities with which

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[148]Kenneth M. Cuthbertson, "Long-Range Financial Planning," Long-Range Planning in Higher Education, ed. by Owen A. Knorr (Boulder, Colorado: Western Interstate Commission for Higher Education, 1965), p. 69.

[149]Tickton, Needed: A Ten Year College Budget, op. cit.

[150]Ruml, op. cit.

> important events could happen, combined with varying estimates of resources, enrollments, costs, and the like, the administrator can study the probable effects of various policies or criteria before committing himself to a decision regarding a program.[151]

Wesleyan University determined that it was necessary to couple simulation with their application of PPBS to achieve maximum benefits. Since PPBS deals with determining program inputs and outputs, the analytical capability of simulation models to permit rational evaluation of alternative programs and operating policies is required.[152] The Dean of the School of Engineering at the University of Santa Clara saw multiyear projections through computer simulation as an integral part of the development of PPBS.[153]

One of the most detailed and scholarly works on simulation modeling for an educational institution was done as a National Science Foundation project at Michigan State University. It was noted in this study that, traditionally, systems engineers have been concerned with the quantitative analysis of physical systems, but that it has become increasingly evident that our society can be viewed as a collection of interacting parts and that we might therefore expect to model at least limited aspects of them mathematically. It concluded that:

> No matter how complex the events studied or how poor our understanding of them constructing an explicit model of what we think may be

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[151]John G. Caffrey and Charles J. Mosmann, Computers on Campus (Washington, D. C.: American Council on Education, 1967), p. 36.

[152]Etherington and Vancil, op. cit., p. 59.

[153]Parden, op. cit., p. 5.

happening increases significantly our ability to test various propositions about the considered behavior.[154]

The general process of developing a model, as described in the NSF study, involves, at the first level of analysis, developing equations for each sector to describe the relationships between the services produced and the resources required. At the second level of analysis the total model is formed by describing the constraints which the different sectors impose on one another. Figure 3 shows the sectors and some of the inputs and outputs of each sector that were identified in this study. A model is a mathematical description of how the institution uses its personnel, space, and equipment to produce developed manpower, research, and public or technical services. Such a model is entirely independent of any qualitative criteria that may be applied to the output. It is merely an aid in making subjective judgments as opposed to being an optimizing device.[155]

Need for Adequate Data Base

The observation is made in this study that the accuracy of a model depends upon an accurate and adequate data base from which the parameters of the model can be determined. Therefore, the development of a model must be paralleled or preceded by the development of adequate data acquisition and processing systems. The study notes that it is unfortunate that the various administrative units of educational

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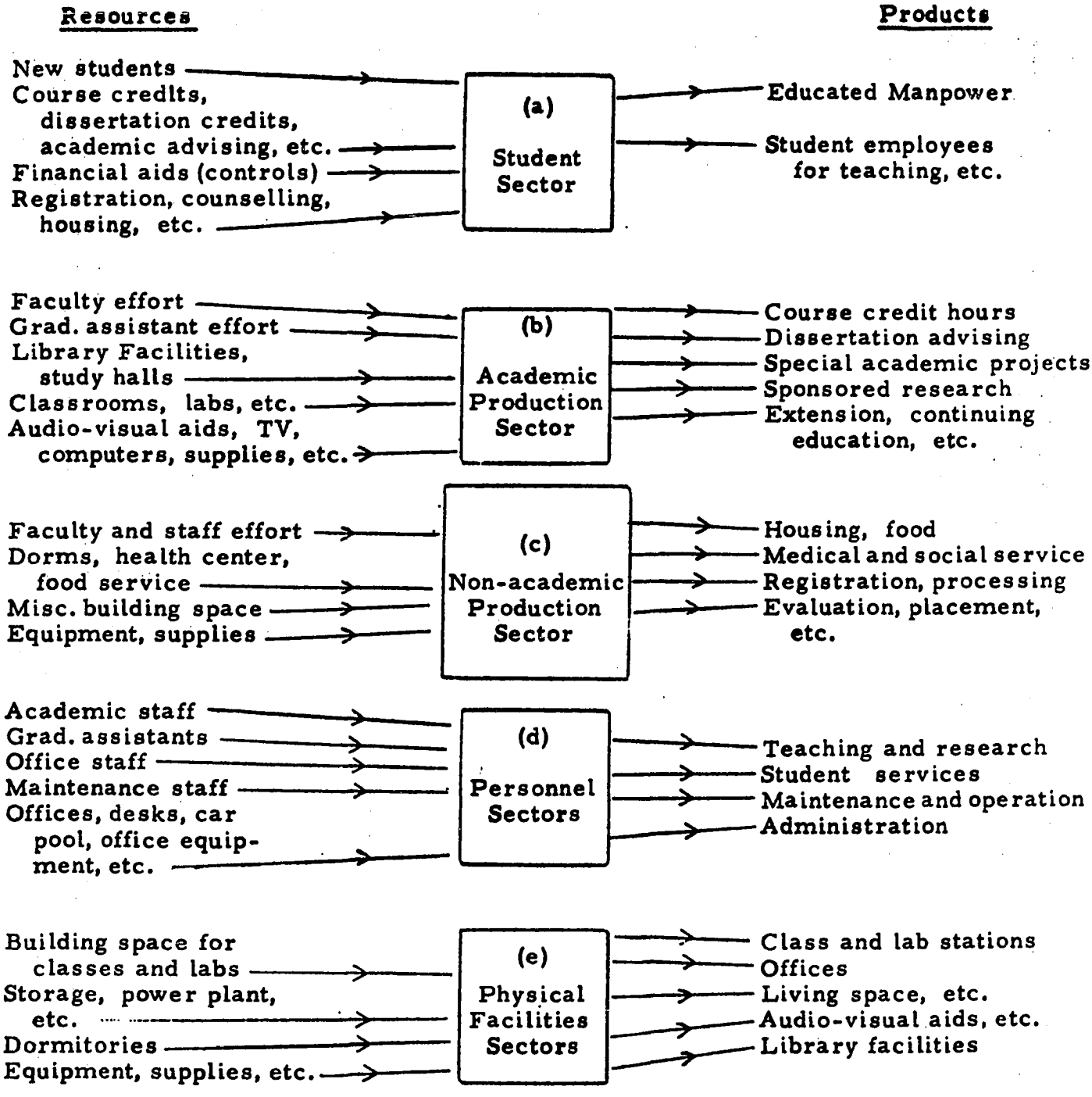
[154]National Science Foundation, A Systems Model for Management, Planning, and Resource Allocation in Institutions of Higher Education (Washington, D. C.: National Science Foundation, 1968), pp. 1-2.

[155]Ibid., p. 708.



Source: National Science Foundation, A Systems Model for Management, Planning, and Resource Allocation in Institutions of Higher Education (Washington, D. C.: National Science Foundation, 1968), p. 443.

Fig. 3--Certain Inputs and Outputs of Certain Sectors of an Educational Institution

institutions have not coordinated their sources of data, coding systems, and processing routine. The problem arises when one attempts to view the institution as an operating system rather than a series of autonomous units.[156]

Another NSF study deals at length with establishing an institution-wide data collection system for educational institutions. It lists three essential conditions for achieving a total information system.

1. The coordination of all administrative activities and the establishment of decision-making policy that takes into consideration the overall institution without regard for the barriers of organizational segments or departments.

2. The collection of all data needed for the operation and management of the institution at the points of origin in a manner that will avoid duplication of the collection effort.

3. The recording and processing of data in a relatively fast, efficient manner, using manual or automated techniques or both.[157]

This study places the accumulation of the data base and the construction of a model in an overall cycling sequence for the institution which consists of:

1. Description of the inputs and outputs.

2. Measurement.

3. Model construction.

4. Analysis.

5. Synthesis.

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[156] Ibid., p. 17.

[157] National Science Foundation, Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities, op. cit., p. 238.

The analysis and synthesis steps lead to improvements of measurements which starts the cycle over at that point. The question was raised in this study as to whether all components of educational institution systems were sufficiently far into the measurement stage to consider the model construction stage.[158]

The Western Interstate Commission for Higher Education prepared a schematic of a model for predicting resource requirements for an educational institution. (See Figure 4.) Beginning at the lower end, it shows the institution's information system and the variables about which decisions must be made forming the data base needed for construction of a model. From this data base, the individual relationships of inputs to outputs of services and facilities are shown as routines 1 through 9, resulting in the total program of discipline specialties or offerings and the projected cost of each service or facility. In this model, the routines and cost categories correspond closely with the functional cost classifications contained in the College and University Business Administration chart of accounts.

College and University Business Administration acknowledges the need for long-range financial plans to implement the long-range academic plan, although no specific techniques or procedures are recommended. It also mentions the use of simulation in decision-making but offers no specific assistance in implementing such a program.[159]

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[158]Ibid., p. 248.

[159]National Committee to Revise Volumes I and II, College and University Business Administration, op. cit., p. 10.

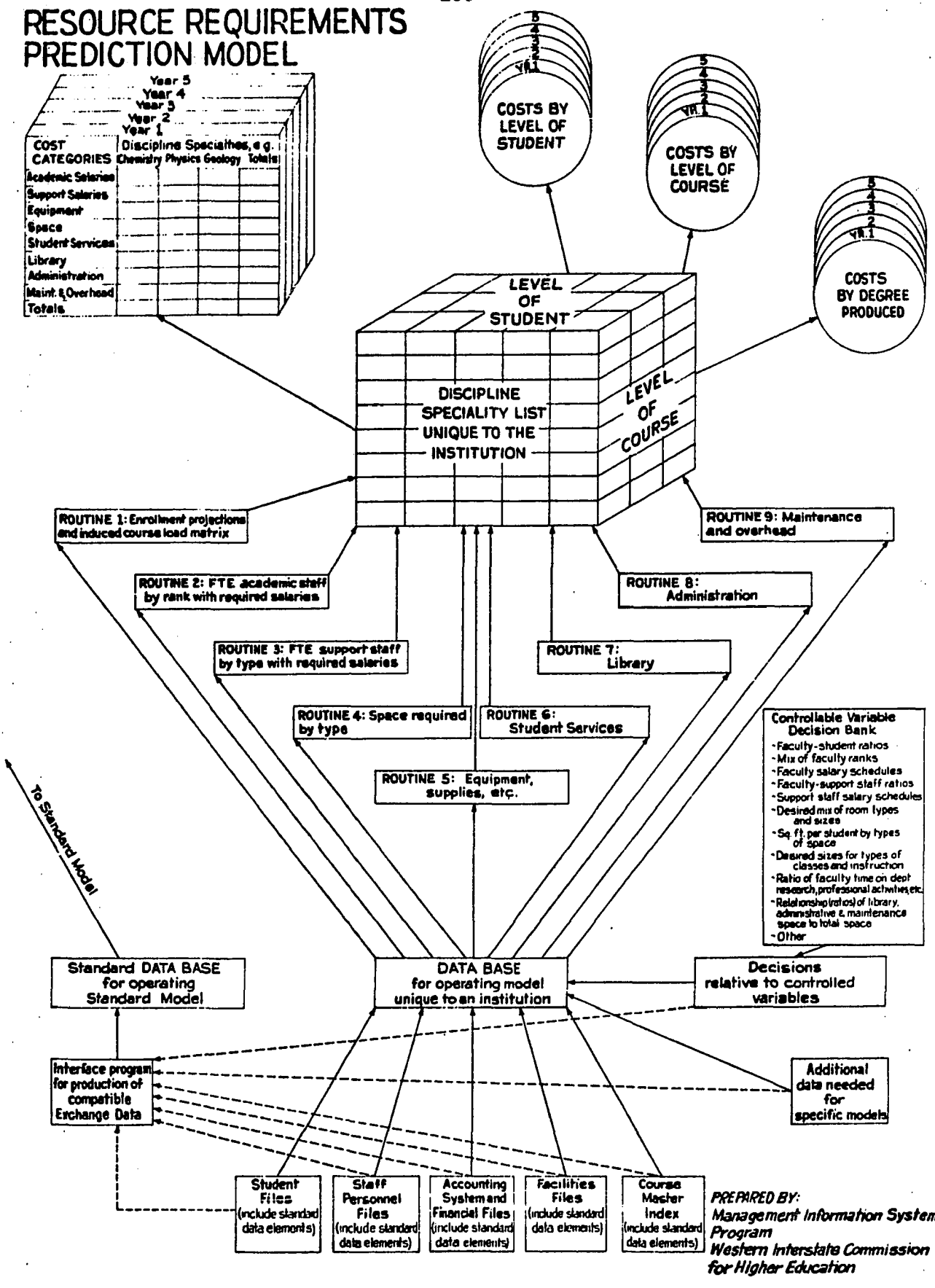
RESOURCE REQUIREMENTS PREDICTION MODEL
Year 5
Year 4
Year 3
Year 2
Year 1
COST CATEGORIES
Discipline Specialties, e.g. Chemistry Physics Geology Totals
Academic Salaries
Support Salaries
Equipment
Space
Student Services
Library
Administration
Maint. & Overhead
Totals
COSTS BY LEVEL OF STUDENT
COSTS BY LEVEL OF COURSE
COSTS BY DEGREE PRODUCED
LEVEL OF STUDENT
DISCIPLINE SPECIALITY LIST UNIQUE TO THE INSTITUTION
LEVEL OF COURSE
ROUTINE 1: Enrollment projections and induced course load matrix
ROUTINE 2: FTE academic staff by rank with required salaries
ROUTINE 3: FTE support staff by type with required salaries
ROUTINE 4: Space required by type
ROUTINE 5: Equipment, supplies, etc.
ROUTINE 6: Student Services
ROUTINE 7: Library
ROUTINE 8: Administration
ROUTINE 9: Maintenance and overhead
Controllable Variable Decision Bank
- Faculty-student ratios
- Mix of faculty ranks
- Faculty salary schedules
- Faculty-support staff ratios
- Support staff salary schedules
- Desired mix of room types and sizes
- Sq. ft. per student by types of space
- Desired sizes for types of classes and instruction
- Ratio of faculty time on dept research, professional activities, etc.
- Relationship (ratios) of library, administrative & maintenance space to total space
- Other
To Standard Model
Standard DATA BASE for operating Standard Model
DATA BASE for operating model unique to an institution
Decisions relative to controlled variables
Interface program for production of compatible Exchange Data
Additional data needed for specific models
Student Files (include standard data elements)
Staff Personnel Files (include standard data elements)
Accounting System and Financial Files (include standard data elements)
Facilities Files (include standard data elements)
Course Master Index (include standard data elements)
PREPARED BY:
Management Information Systems Program
Western Interstate Commission for Higher Education

Fig. 4.

Educational and General Revenues

The nature of revenues in a private college or university presents some unique circumstances which the accountant can assist management in coping with. Excluding revenues from auxiliary enterprises and organized research, such income consists principally of tuition and fees, gifts and grants, and income from endowments. In this context, gifts restricted to use for physical facilities or for endowment principal are not considered to be income. Table 3 summarizes the revenues, as defined above, of all privately controlled institutions of higher education in the United States for the fiscal year 1965-66.

TABLE 3

CURRENT FUNDS REVENUES OF PRIVATE INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES FOR THE FISCAL YEAR 1965-1966, EXCLUDING ORGANIZED RESEARCH AND AUXILIARY ENTERPRISES REVENUE
(in Thousands)

Nature	Amount
Tuition and Fees	$1,857,904
Private Gifts and Grants	470,834
Endowment Earnings	309,731
Other Sources	573,376
Total	$3,211,845

Source: U. S. Department of Health, Education and Welfare, Financial Statistics of Institutions of Higher Education (Washington, D. C.: Government Printing Office, January, 1969), p. 10.

Tuition and Fees

The heavy dependence of private colleges and universities on tuition and fees as indicated in Table 3, has caused considerable attention to be devoted to that subject. Most of this attention has stemmed from the fact that generally tuition and fees do not cover the total cost of operations. Proceeding from this generalization, some writers have implied that since the income per student is less than the average cost per student that accepting additional enrollees would increase the operating deficit. Ostheimer pointed out that it was the relationship of marginal cost and marginal revenue that determined whether an increased level of enrollment would be detrimental.[160] In other words, if the tuition per student exceeds variable costs, a larger enrollment would be financially favorable and vice versa.

Elasticity of Demand

Perhaps the most important aspect of analysis of revenue from tuition and fees is the elasticity of demand for the services of an institution. This concept describes the behavior of total revenue from tuition and fees when the amount of tuition and fees per student is raised or lowered. Demand is elastic if total revenue increases when tuition is lowered or if total revenue decreases when tuition is raised. Demand is inelastic when total revenue declines with a reduction in tuition and increases with an increase in tuition. Knowledge of this relationship for an individual institution would be invaluable in its

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[160] Ostheimer, op. cit., pp. 64-66.

administration. Ostheimer made such a study on a macro basis and concluded that, in the aggregate, demand for the services of institutions of higher education was inelastic.[161] With regard to individual institutions, however, he makes the following observation:

> Because the student may choose among schools, the demand facing individual institutions must generally be more elastic than the aggregate demand. The competition thus implied, however, is lessened by the fact that each school offers, or claims to offer, a differentiated product.[162]

These circumstances mean that the administration of an individual institution is faced with determining what effect on its total revenue a change in tuition rates will have. Little has been written about techniques for making such determinations. Ferguson described a technique used at Valparaiso University that involved circularizing the families of its student body regarding their financial circumstances, in order to determine the probable affect of raising tuition.[163] The implication is that regardless of how the data base is acquired, adequate student data is a key to determining elasticity of demand. Cuthbertson pointed out that private institutions find it important to watch each other with respect to tuition rates.[164] This observation corroborates Ostheimer's view of the competitive circumstances referred to above.

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[161] Ibid., p. 121. [162] Ibid., p. 60.

[163] Josephine Ferguson, "What Happens When You Raise Tuition?," College and University Business, XXXV (August, 1963), p. 37.

[164] Cuthbertson, op. cit., p. 71.

Enrollment Projections

Regardless of whether or not a change in tuition and fee structures is contemplated, projections of enrollment levels are the heart of planning for revenue. For this reason, the financial executive must be intimately involved with such projections. Erfft observed that enrollment projections of most colleges and universities are highly defective. He attributed this to certain basic fallacies in enrollment projection techniques, the chief of which is the assumption that a particular school will participate prorata in increases in college-age citizens of some classification such as state, region, or religious denomination. Such an approach ignores many factors that influence choices of colleges.[165]

The American Association of Collegiate Registrars and Admissions Officers published a handbook on the methodology of enrollment projections, in 1960. It reviews the following five projection techniques:

1. Curve-fitting--projecting the past historical trend.

2. Ratio method--projecting the continuation of the ratio of the individual institution's enrollment to the college-age population of which it is a part.

3. Cohort-survival methods--projecting based upon the past survival experience from one grade to another.

4. Combined ratio and cohort-survival method--projecting the

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[165]Erfft, "Facilities, Faculty and Financing--Will Today's Answers be Tomorrow's Problems?," op. cit., pp. 41-42.

freshman level enrollment by the ratio method and succeeding levels by the cohort-survival method.

5. Correlation analysis--projecting by the use of a regression equation which relates enrollment (dependent variable) to one or more independent variables.[166]

Differential Pricing

Another aspect of tuition revenue planning that has been discussed in the literature, but not widely adopted, is that of differential pricing based upon differences in program costs. It is generally conceded that there are differences in costs of teaching among disciplines as well as among the levels of study. Differential pricing on the basis of calendar divisions has also been proposed and offers revenue planning possibilities. Specifically, reduced rates for summer attendance have been advocated as a means of leveling enrollments throughout the calendar year. Stickler observed, however, that there is no net advantage to inducing students to attend a specific term unless the other terms that he would have attended are filled to capacity.[167] In any event, the possibilities of differential pricing offer sufficient incentive for study by the college or university managerial accountant.

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[166]L. J. Lins, Methodology of Enrollment Projections for Colleges and Universities (The American Association of Collegiate Registrars and Admissions Officers, March, 1960), pp. 8-19.

[167]Stickler, "The College Calendar: What Kind of a School Year?," op. cit., pp. 241-242.

Gift and Endowment Revenue

Although the principal source of revenue of most private colleges and universities is tuition and fees and consequently varies with enrollment levels, a substantial portion of their revenue is derived from gifts and endowment income which is relatively fixed. The presence of a substantial amount of such income has implications with regard to the effect of changes in enrollment levels. In the same manner that greater volume reduces fixed costs per unit of output, it also reduces the fixed income per unit. This fact has led some to conclude that larger enrollments were necessarily disadvantageous, financially.

Gift income lends itself to analysis for purposes of providing those who are responsible for obtaining it information that will help guide their efforts. Caffrey and Mosmann described the procedure of one small college in maintaining gift records and providing information with regard to comparisons with previous years or drives, analysis by use in the case of special purpose gifts, and reports showing expectations from various sources based upon probabilities assigned by the development office.[168]

In addition to adequate records and analysis of sources and trends of gift income, it was pointed out by Cuthbertson that it is extremely important to keep in touch with external factors,

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[168]Caffrey and Mosmann, op. cit., p. 54.

particularly income tax developments, which might effect philanthropy toward higher education.[169]

There have been a number of publications dealing with the investment of endowment funds and the appropriate record-keeping for them. These are outside the scope of this study. From the standpoint of the management of current operating funds, revenue from endowment funds which becomes available for operating purposes is generally looked upon as fixed income in the same manner as gifts.

This chapter has summarized educational institution accounting literature, both in terms of an overview and a more detailed examination divided into the areas of General Accounting and Reporting, Cost Analysis, Budgeting, Long-Range Financial Planning, and Educational and General Revenues. Chapter IV contains the results of a survey of practices in these areas by private liberal arts colleges.

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[169]Cuthbertson, op. cit., p. 72.

CHAPTER IV

RESEARCH FINDINGS

The purpose of this chapter is to report the findings regarding selected accounting practices in private liberal arts colleges and the preferences of college presidents for selected financial data. The information was obtained by circularizing accredited private liberal arts colleges in the United States. The definition of the population represented by these findings, the methods used in obtaining the data, and the bases for concluding that the colleges providing data are representative of the population are presented in Appendix A.

The method for arriving at the enrollment level of colleges in the population and the definition of Most Affluent and Least Affluent colleges for purposes of classifying the population and those responding to the questionnaires are also given in Appendix A.

Selected Accounting Practices in Private Liberal Arts Colleges

The accounting practices questionnaire was designed to obtain information regarding selected accounting practices in six general areas. They are:

1. General accounting
2. Budgeting

3. Cost analysis

4. Physical plant

5. Income

6. Long-range planning.

The questions asked in each area were selective rather than exhaustive in an effort to obtain key data without discouraging participation. The questionnaire is reproduced in Appendix C. From a population of 451 colleges, there were 284 usable responses to this questionnaire. The number of responses to individual questions may be less than this because some respondents did not answer all of the applicable questions.

The summarized responses to the questionnaire will be discussed as to each of the six general areas, individually. Within each general area, the responses of the population as a whole will be discussed followed by comparisons of responses among classifications of the population as to enrollment level and affluence.

General Accounting

The purpose of these questions was to ascertain whether there is general conformity to basic "generally accepted educational institution accounting principles," as set forth in the literature, which is reviewed in Chapter III. It was felt that some common ground might be established on which a study of the more specialized managerial accounting practices might be based. On the other hand, if such common ground cannot be established, there is an indication that additional research effort in the area of general accounting practices is necessary before

more specialized practices can be made generally applicable to private liberal arts colleges.

All Respondents

The responses to these questions, as summarized in Table 4, indicate that the basic "generally accepted educational institution accounting principles" are well implanted in private liberal arts colleges. Over 91 per cent of the respondents indicated that they refer to College and University Business Administration regularly for guidance in accounting matters. The results of the common usage of this reference are borne out by the responses to the remaining questions which show that 96.8 per cent of the colleges maintain their accounting records in balanced fund groups, 93.1 per cent substantially follow the chart of accounts suggested therein, and 90.4 per cent separate auxiliary fund income and expenses from other current fund accounts.

Accrual accounting procedures are applied to income by 86.9 per cent of the respondents; however, only 58.0 per cent indicated that expenditures are recorded on the accrual basis. Some respondents qualified their "yes" answers to the latter question by stating that accruals were made only at year-end. Since the questionnaire did not provide for determining how the accruals are accomplished, there is a possibility that a larger number would have answered this question in the affirmative if it had clearly referred to systems that only made accruals at year-end, as well as those that make accruals on an interim basis. On the other hand, it is clear that less than 58.0 per cent accrue expenditures monthly or quarterly.

TABLE 4

RESPONSES TO GENERAL ACCOUNTING PRACTICES QUESTIONS--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Is the book College and University Business Administration regularly used as a reference for guidance in accounting matters?	6	50.0	26	84.6	64	87.5	81	96.3	64	95.3	28	96.4	12	83.3	281	91.4
2. Are accounting records maintained in balanced fund groups?	5	60.0	26	96.2	66	98.5	80	96.2	64	98.4	28	96.4	12	100.0	281	96.8
3. Are revenues from tuition and fees recorded when they become payable (accrual basis) rather than when collected?	6	50.0	26	84.6	66	86.4	81	86.4	64	89.1	28	89.3	12	100.0	283	86.9
4. Are expenditures recorded on an accrual basis?	6	66.7	25	72.0	66	56.1	81	55.6	63	57.1	28	57.1	12	58.3	281	58.0
5. Are restricted revenues recorded only as they are expended?	6	100.0	25	56.0	65	61.5	78	65.4	63	57.1	28	60.7	12	50.0	277	61.4
6. Is the chart of accounts suggested in College and University Business Administration substantially followed?	5	20.0	23	91.3	65	93.8	80	97.5	64	93.8	28	92.8	12	91.7	277	93.1
7. Are auxiliary funds income and expenditures recorded and reported separately from other current funds?	5	60.0	25	92.0	65	90.8	76	90.8	62	91.9	27	88.9	12	91.7	272	90.4
8. Is depreciation expense recorded for:																
a) general educational plant?	5	80.0	26	15.4	64	9.4	82	13.4	63	11.1	28	14.3	11	9.1	279	13.3
b) auxiliary enterprise plant?	5	60.0	26	15.4	62	11.3	82	13.4	62	21.0	28	21.4	11	36.4	276	17.4
9. If depreciation expense is not recorded, is a provision for replacement recorded for:																
a) general educational plant?	1	0.0	22	18.2	54	27.8	69	23.2	55	16.4	23	13.0	10	10.0	234	20.5
b) auxiliary enterprise plant?	1	0.0	21	23.8	51	33.3	68	35.3	49	28.6	21	23.8	8	37.5	219	31.0

Practices with respect to recording depreciation expense follow the recommendations contained in College and University Business Administration, as indicated by the 13.3 per cent affirmative response to the question as to whether depreciation expense on general educational plant is recorded. Only 17.4 per cent indicated that depreciation of auxiliary enterprise plant is recorded. Of those schools that do not record depreciation expense, 20.5 per cent and 31.0 per cent, respectively, indicated that they make a provision for replacement of general educational plant and auxiliary enterprise plant.

Respondents Classified by Enrollment Level

Table 4 shows the responses by enrollment level of the institutions as well as in total. Responses of schools with enrollment of less than 750 indicate that a slightly lower per centage of them regularly refer to College and University Business Administration for guidance in accounting matters than those with enrollments of 750 or more. Regardless of this difference, the responses to the remainder of the questions on general accounting practices do not indicate any significant differences in general accounting practices between colleges of varying size.

Respondents Classified by Affluence

When the institutions are classified between those that are considered to be most affluent and least affluent, two minor variations may be noted. (See Table 5.) Fewer (77.6 per cent) of the affluent schools accrue revenues than do the nonaffluent (89.8 per cent) and a

TABLE 5

RESPONSES TO GENERAL ACCOUNTING PRACTICES QUESTIONS--
CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Is the book College and University Business Administration regularly used as a reference for guidance in accounting matters?	65	89.2	216	92.1	281	91.4
2. Are accounting records maintained in balanced fund groups?	66	92.4	215	98.1	281	96.8
3. Are revenues from tuition and fees recorded when they become payable (accrual basis) rather than when collected?	67	77.6	216	89.8	283	86.9
4. Are expenditures recorded on an accrual basis?	67	55.2	214	58.9	281	58.0
5. Are restricted revenues recorded only as they are expended?	64	68.8	213	59.2	277	61.4
6. Is the chart of accounts suggested in College and University Business Administration substantially followed?	64	89.1	213	94.4	277	93.1
7. Are auxiliary funds income and expenditures recorded and reported separately from other current funds?	64	89.1	208	90.6	272	90.4
8. Is depreciation expense recorded for:						
(a) general educational plant?	68	20.6	211	10.9	279	13.3
(b) auxiliary enterprise plant?	68	30.9	208	13.0	276	17.4
9. If depreciation expense is not recorded, is a provision for replacement recorded for:						
(a) general educational plant?	51	29.4	183	18.0	234	20.5
(b) auxiliary enterprise plant?	43	32.6	176	30.7	219	31.0

See Appendix A for a description of the factors considered to indicate affluence.

larger per centage of this group records depreciation expense (20.6 per cent and 30.9 per cent for general educational plant and auxiliary enterprise plant, respectively, compared to 10.9 per cent and 13.0 per cent among the nonaffluent institutions).

Budgeting

As indicated by the review of literature in Chapter III, budgeting is considered to be a well developed and widely used managerial accounting practice in educational institutions. The purpose of the questions in this area is to determine the extent of the use of this tool and the degree of sophistication with which it is carried out.

All Respondents

Table 6 summarizes the responses to the questions on budgeting practices. Ninety-four per cent of the colleges reported that they prepare an annual operating budget for all current funds. Of the responding colleges, 89.5 per cent prepare reports, quarterly or oftener, comparing actual and budgeted income and expenditures; 91.3 per cent classify the operating budget by department, program, or activity, in addition to classification by object; 85.1 per cent provide heads of budgetary units with quarterly statements of expenditures against their budgets; and 72.0 per cent budget by object classifications more detailed than the broad categories of salaries and wages, supplies and expenses, and equipment. These responses bear out the conclusion that budgeting practices are widely used and in some respects comprehensively used.

TABLE 6

RESPONSES TO BUDGETING PRACTICES QUESTIONS--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Is an annual operating budget for all current funds adopted prior to the beginning of each fiscal year?	6	66.7	26	88.5	66	93.4	81	95.1	64	93.8	28	100	12	100	283	94.0
2 Is the annual operating budget broken down into monthly amounts in accordance with the expected actual income and expenditures?	4	25.0	26	19.2	63	14.3	79	20.2	63	20.6	28	17.9	12	8.3	275	18.2
3. Are reports prepared either monthly or quarterly comparing actual and budgeted income and expenditures?	5	60.0	26	80.8	63	93.5	80	90.0	63	88.9	28	96.4	12	91.7	277	89.5
4. Is the annual operating budget broken down by department, program, or activity in addition to breakdown by object?	5	60.0	26	92.3	63	93.6	80	90.0	63	95.2	28	92.8	12	75.0	277	91.3
5. Are heads of budgetary units provided with statements of expenditures against their individual budgets as often as quarterly?	5	60.0	25	80.0	63	77.8	80	86.2	63	92.1	28	100	12	66.7	276	85.1
6. Are object breakdowns made any farther than the three broad categories of Salaries and Wages, Supplies and Expenses, and Equipment?	5	40.0	26	80.8	60	55.0	77	68.8	63	81.0	28	89.3	12	83.3	271	72.0
7. Are formulas used in preparing the annual budget which take into consideration the expected:																
(a) faculty-student ratio?	5	0.0	25	36.0	62	29.0	76	35.5	63	30.2	28	42.8	12	25.0	271	32.5
(b) proportions of upper division and lower division enrollment?	5	0.0	25	28.0	59	11.9	75	9.3	61	13.1	27	22.2	12	8.3	264	13.6
(c) proportions of enrollment in each instructional department?	5	0.0	26	23.1	61	21.3	76	13.2	62	24.2	28	35.7	12	16.7	270	20.7
(d) nonteaching staff to teaching staff within the instructional function?	5	0.0	25	20.0	60	15.0	76	9.2	61	11.5	28	25.0	12	8.3	267	13.5
(e) staff outside the instructional function to staff within the instructional function?	5	20.0	24	16.7	60	18.3	76	11.8	60	10.0	28	25.0	12	8.3	265	14.7

TABLE 6--Continued

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
8. Are cash budgets or cash flow projections prepared quarterly or oftener?	6	16.7	26	50.0	65	55.4	80	60.0	63	66.7	28	53.6	12	58.3	280	57.8
9. A budgeting concept called Planning, Programming, Budgeting System, which has been used by the U. S. government, has recently been discussed for colleges and universities.																
(a) Has this concept been applied in your institution?	6	0.0	25	8.0	66	4.5	79	8.9	61	11.5	28	3.6	12	8.3	277	7.6
(b) Is it being considered?	5	60.0	22	27.3	61	36.1	74	29.7	57	50.9	26	57.7	11	41.7	256	39.8

It is of interest to note that only 18.2 per cent of the respondents prepare monthly budgets underlying the annual budget. It appears that the absence of this practice limits the usefulness of budget status reports in the early part of the year.

The use of formulas in preparing the annual budget in private liberal arts colleges is not widespread. Faculty-student ratio formulas were reported in use by 32.5 per cent of the colleges and lesser proportions reported the use of other types of formulas.

Cash budgets were reported to be prepared quarterly or oftener by 57.8 per cent of the respondents.

The concepts of PPBS, or Planning, Programming, Budgeting Systems, have been applied by only 7.6 per cent of the responding colleges; however, 39.8 per cent indicated that they are considering such.

Respondents Classified by Enrollment Level

Table 6 shows the responses to the questions on budgeting practices classified by the enrollment level of the respondents. There appears to be no significant pattern to the budgeting practices of smaller schools as opposed to the larger ones.

Respondents Classified by Affluence

Responses summarized by most affluent and least affluent schools, as in Table 7, show that 27.3 per cent of the affluent schools prepare monthly budgets as opposed to 15.3 per cent of the nonaffluent. The other noticeable differences shown in this table are that among the affluent schools, 12.3 per cent have applied PPBS concepts and 48.2

TABLE 7

RESPONSES TO BUDGETING PRACTICE QUESTIONS--CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Is an annual operating budget for all current funds adopted prior to the beginning of each fiscal year?	68	94.1	215	94.0	283	94.0
2. Is the annual operating budget broken down into monthly amounts in accordance with the expected actual income and expenditures?	66	27.3	209	15.3	275	18.2
3. Are reports prepared either monthly or quarterly comparing actual and budgeted income and expenditures?	67	91.0	210	89.0	277	89.5
4. Is the annual operating budget broken down by department, program, or activity in addition to breakdown by object?	67	92.5	210	90.1	277	91.3
5. Are heads of budgetary units provided with statements of expenditures against their individual budgets as often as quarterly?	66	89.4	210	83.8	276	85.1
6. Are object breakdowns made any farther than the three broad categories of Salaries and Wages, Supplies and Expenses, and Equipment?	65	63.1	206	74.8	271	72.0
7. Are formulas used in preparing the annual budget which take into consideration the expected:						
(a) faculty-student ratio?	63	33.3	208	32.2	271	32.5
(b) proportions of upper division and lower division enrollment?	62	16.1	202	12.9	264	13.6
(c) proportions of enrollment in each instructional department?	63	23.8	207	19.8	270	20.7
(d) nonteaching staff to teaching staff within the instructional function?	63	11.1	204	14.2	267	13.5
(e) staff outside the instructional function to staff within the instructional function?	63	15.9	202	14.4	265	14.7

TABLE 7--Continued

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
8. Are cash budgets or cash flow projections prepared quarterly or oftener?	67	55.2	213	58.7	280	57.8
9. A budgeting concept called Planning, Programming, Budgeting System, which has been used by the U. S. Government, has recently been discussed for colleges and universities.						
(a) Has this concept been applied in your institution?	65	12.3	212	6.1	277	7.6
(b) Is it being considered?	56	48.2	200	37.5	256	39.8

See Appendix A for a description of the factors considered to indicate affluence.

per cent are planning to do so; whereas 6.1 per cent have applied these concepts among the nonaffluent schools and 37.5 per cent plan to.

The conclusions reached in the literature that budgeting practices are in widespread use in colleges and universities are born out in this survey of private liberal arts colleges. The infrequent use of monthly budgets indicates that research in that area might be useful. It appears that a greater use could be made of formulas to add objectivity to budget preparation. Although cash forecasts are prepared by 57.8 per cent of the respondents, this appears to be an area in which a minimum of additional effort on the part of accountants in the colleges that do not prepare them would provide valuable information to administrators.

Cost Analysis

Cost accounting for educational institutions has received much attention in the literature; however, not all of it has been favorable. Responses to questions about such practices are summarized in Table 8. They reflect a lack of the general acceptance that has been accorded budgeting practices.

All Respondents

Unit costs for the college as a whole were reported to be computed annually by 59.6 per cent of the responding colleges, and 49.3 per cent reported that unit costs of instruction are computed. Other unit costs are reportedly computed by the following proportions of schools: noninstructional departments, 18.7 per cent; academic

TABLE 8

RESPONSES TO COST ANALYSIS PRACTICES QUESTIONS--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Are unit costs (cost per full-time-equivalent student, student credit hour or some other unit) computed annually for:																
(a) the college as a whole?	5	60.0	26	53.8	65	66.2	78	60.2	63	55.6	27	55.6	11	63.6	275	59.6
(b) the instruction function?	5	40.0	25	44.0	62	53.2	78	57.7	62	38.7	27	51.8	11	36.4	270	49.3
(c) any noninstructional departments	5	0.0	24	29.2	61	16.4	77	19.5	62	17.7	27	14.8	11	27.3	267	18.7
(d) academic divisions within the instruction function?	5	20.0	24	12.5	61	23.0	77	26.0	62	30.6	27	33.3	11	18.2	267	25.5
(e) upper division and lower division instruction?	5	0.0	24	8.3	61	4.9	75	8.0	62	11.3	27	7.4	11	9.1	265	7.9
(f) individual courses?	5	20.0	24	20.8	60	16.7	76	19.7	61	16.4	27	25.9	11	18.2	264	18.9
2. If unit costs are computed, do they include prorated indirect costs (general overhead?)	3	100.0	15	53.3	44	52.3	57	38.6	36	38.9	17	47.0	8	50.0	180	45.6
3. If instructional unit costs are computed, are they based on student credit hours?	2	0.0	11	100.0	33	75.8	45	77.8	24	100.0	14	85.6	4	75.0	133	82.7
4. Are unit costs used for cost control through:																
(a) comparison with prior periods?	2	100.0	15	80.0	41	75.6	56	69.6	35	77.1	17	64.7	8	62.5	174	73.0
(b) comparison between departments?	3	33.3	15	53.3	31	35.5	51	43.1	35	40.0	16	56.2	8	25.0	159	42.1
(c) comparison with other institutions?	3	33.3	15	40.0	33	51.5	49	36.7	35	45.7	15	26.7	8	37.5	158	41.1
5. Are unit costs used in:																
(a) preparing annual budgets?	3	66.7	15	73.3	42	52.4	56	51.8	33	57.6	17	47.0	9	44.4	175	54.3
(b) long-range financial planning?	3	33.3	14	64.3	41	61.0	54	53.7	34	64.7	17	58.8	9	44.4	172	58.1
6. Are marginal or incremental costs computed for:																
(a) potential changes in enrollment level?	5	40.0	25	44.0	59	45.8	76	46.0	53	39.6	23	43.5	11	54.5	152	44.4
(b) potential additions or deletions of courses or programs?	5	20.0	22	27.3	56	35.7	73	30.1	54	29.6	23	34.8	11	18.2	244	30.7

TABLE 8--Continued

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
7. Some recent literature proposes defining and costing certain activities that cut across normal departmental lines, such as producing a degree that entails the efforts of several departments. Are any such activities defined and costed?	5	20.0	26	0.0	60	5.0	81	0.0	57	7.0	26	15.4	11	0.0	266	4.5
8. Are prorations of indirect costs such as general administration made to:																
(a) the instruction function?	5	40.0	25	28.0	60	21.7	81	21.0	61	23.0	27	22.2	11	27.3	270	23.0
(b) auxiliary enterprises?	5	20.0	23	52.2	60	36.7	81	37.0	61	49.2	27	55.5	11	45.4	268	42.9
(c) other noninstructional activities?	5	20.0	23	34.8	58	15.5	78	23.1	61	24.6	27	40.7	11	27.3	263	24.7
9. Have the effects on costs of alternative assumptions regarding faculty load been computed with regard to:																
(a) ratio of faculty to students?	5	40.0	25	48.0	57	36.8	79	54.4	58	51.7	26	61.5	11	45.4	261	49.4
(b) average credit hours taught per faculty member per semester (or other period)?	5	0.0	23	43.5	55	36.4	78	46.2	58	39.6	26	50.0	11	45.4	256	41.8
(c) noninstructional duties (research, etc.)?	5	0.0	21	14.3	54	9.2	77	13.0	57	10.5	25	12.0	11	27.3	250	12.0
10. Have expenditures been classified between those that are relatively fixed regardless of enrollment level and those that tend to vary with enrollment level?	5	40.0	26	46.2	64	34.4	81	40.7	62	33.9	28	50.0	11	54.5	277	39.7
11. If answer to 10 above is yes, are the results used to:																
(a) point up deviations in current expenditures from previous patterns?	2	100.0	10	70.0	18	66.7	29	72.4	21	66.7	13	84.6	6	66.7	99	71.7
(b) forecast expenditures under alternative future enrollment levels?	2	50.0	11	9.1	19	89.5	30	76.7	20	70.0	13	92.3	6	100.0	101	82.2
(c) plan expansion of programs or facilities by estimating the associated fixed costs?	2	50.0	9	66.7	19	68.4	29	62.1	20	60.0	13	84.6	6	83.3	98	67.3

TABLE 8--Continued

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
12. Based upon separation of fixed and variable expenses, has break-even analysis under various enrollment level assumptions been used?	2	50.0	12	41.7	20	40.0	32	43.8	20	35.0	14	42.8	6	33.3	106	40.6

divisions, 25.5 per cent; upper division and lower division instruction, 7.9 per cent; and individual courses, 18.9 per cent.

Of those colleges that compute unit costs, only 45.6 per cent indicated that such costs included prorated indirect costs or overhead. Student credit hours are the units for which costs are computed by 82.7 per cent of those which compute instructional unit costs.

Seventy-three per cent of the colleges computing unit costs use them for control purposes by comparing them with prior periods, whereas 42.1 per cent and 41.1 per cent, respectively, use them for control by interdepartmental and interinstitutional comparisons.

Unit costs are used for planning purposes, as indicated by the responses of those who compute unit costs; 54.3 per cent of whom use them in preparing the annual budget and 58.1 per cent of whom use them for long-range financial planning.

Forty-four and four-tenths per cent and 30.7 per cent, respectively, of the respondents indicated that they compute marginal or incremental costs in planning for changes in enrollment level and additions or deletions of courses or programs.

Activity cost finding other than that which is provided for by the chart of accounts suggested in College and University Business Administration, which is primarily department oriented, is virtually nonexistent in the private liberal arts colleges responding to this survey. Such is indicated by the fact that only 4.5 per cent of them define and cost interdepartmental activities.

The effects on costs of alternative assumptions regarding certain aspects of faculty load have been computed by respondents as follows: student-faculty ratio, 49.4 per cent; credit hours taught per faculty member, 41.8 per cent; and noninstructional duties, 12.0 per cent.

Thirty-nine and seven-tenths per cent of the colleges responding to this question stated that they have classified expenditures between those that are relatively fixed regardless of enrollment level and those that tend to vary with enrollment level. Those schools which make this classification reported that they make use of such classifications as follows: to point up deviations in current expenditures from previous patterns, 71.7 per cent; to forecast expenditures under alternative future enrollment levels, 82.2 per cent; to plan expansion of programs or facilities by estimating the associated fixed costs, 67.3 per cent; and for break-even analysis under various enrollment level assumptions, 40.6 per cent.

Respondents Classified by Enrollment Level

Analysis of the responses to the cost analysis section of the questionnaire by the enrollment level of the schools does not indicate any clear-cut difference in practices among different sizes of schools. (See Table 8.)

Respondents Classified by Affluence

Cost analysis practices do not appear to differ significantly between those schools considered to be affluent and those which are not. Table 9 shows the classification of responses to these questions in this manner.

TABLE 9

RESPONSES TO COST ANALYSIS PRACTICES QUESTIONS--
CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Are unit costs (cost per full-time-equivalent student, student credit hour, or some other unit) computed annually for:						
(a) the college as a whole?	65	56.9	210	60.5	275	59.6
(b) the instruction function?	65	40.0	205	52.2	270	49.2
(c) any noninstructional departments?	65	15.4	202	19.8	267	18.7
(d) academic divisions within the instruction function?	65	26.2	202	25.2	267	25.5
(e) upper division and lower division instruction?	65	10.8	200	7.0	265	7.9
(f) individual courses?	65	23.1	199	17.6	264	18.9
2. If unit costs are computed, do they include prorated indirect costs (general overhead)?	39	59.0	141	41.8	180	45.6
3. If instructional unit costs are computed, are they based on:						
(a) student credit hours?	26	96.1	107	79.4	133	82.7
4. Are unit costs used for cost control through:						
(a) comparison with prior periods?	34	79.4	140	71.4	174	73.0
(b) comparison between departments?	34	50.0	125	40.0	159	42.1
(c) comparison with other institutions?	34	44.1	124	40.3	158	41.1
5. Are unit costs used in:						
(a) preparing annual budgets?	36	66.7	139	51.1	175	54.3
(b) long-range financial planning?	37	62.2	135	57.0	172	58.1
6. Are marginal or incremental costs computed for:						
(a) potential changes in enrollment level?	58	37.9	194	46.4	252	44.4
(b) potential additions or deletions of courses or programs?	59	32.2	185	30.3	244	30.7

TABLE 9--Continued

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
7. Some recent literature proposes defining and costing certain activities that cut across normal departmental lines, such as producing a degree that entails the efforts of several departments. Are any such activities defined and costed?	66	9.1	200	3.0	266	4.5
8. Are prorations of indirect costs such as general administration made to:						
(a) the instruction function?	66	25.8	204	22.0	270	23.0
(b) auxiliary enterprises?	65	41.5	203	43.3	268	42.9
(c) other noninstructional activities	63	27.0	200	24.0	263	24.7
9. Have the effects on costs of alternative assumptions regarding faculty load been computed with regard to:						
(a) ratio of faculty to students?	58	55.2	203	47.8	261	49.4
(b) average credit hours taught per faculty member per semester (or other period)?	57	49.1	199	40.0	256	41.8
(c) noninstructional duties (research, etc.)?	54	20.4	196	9.7	250	12.0
10. Have expenditures been classified between those that are relatively fixed regardless of enrollment level and those that tend to vary with enrollment level?	67	37.3	210	40.5	277	39.7
11. If answer to 10 above is yes, are the results used to:						
(a) point up deviations in current expenditures from previous patterns	24	75.0	75	70.7	99	71.7
(b) forecast expenditures under alternative future enrollment levels?	25	76.0	76	84.2	101	82.2
(c) plan expansion of programs or facilities by estimating the associated fixed costs?	23	78.3	75	64.0	98	67.3
12. Based upon separation of fixed and variable expenses, has break-even analysis under various enrollment level assumptions been used?	26	50.0	80	37.5	106	40.6

The overall results of this section of the survey indicate that the types of cost analysis referred to therein are not widely practiced and that of the two classifications of the schools which were made, no single class appears to excel or lag far behind in this area.

Physical Plant Practices

Educational institutions invest relatively large amounts in physical plant. This fact is given special recognition in educational institution accounting practices in that depreciation expense is not recorded because it is assumed that plant replacements and additions cannot be made from educational and general revenues. It is assumed that such expenditures must be met by funds from other sources.

Also, because of the significance of physical plant investment, there has been a considerable amount in the literature about the efficiency of utilization of facilities. The questions in this area deal primarily with this aspect of the subject.

All Respondents

Fifty and four-tenths per cent of the respondents indicated that they had determined their maximum capacity under present and/or alternative policies regarding hours and days that classes will be conducted. (See Table 10.) This table also shows that 27.5 per cent of the colleges responding have studied the differences in costs between increasing utilization of existing plant versus construction of new facilities to accommodate specific enrollment increases; and that 38.0 per cent of them make annual computations of the per cent of classroom space utilization.

TABLE 10

RESPONSES TO PHYSICAL PLANT PRACTICES QUESTIONS--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000- Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Has maximum capacity of physical plant been determined under present and/or alternative policies regarding hours and days that classes will be conducted?	5	40.0	26	46.2	61	45.9	80	47.5	60	51.7	27	63.0	11	72.7	270	50.4
2. Have studies been made of differences in costs between increasing utilization of existing plant versus construction of new facilities to accommodate specific enrollment increases?	5	20.0	26	26.9	62	32.2	82	25.6	62	30.6	28	21.4	11	18.2	276	27.5
3. Are annual computations made of % of classroom space utilization under existing policies regarding days and hours that classes will be held?	4	25.0	26	26.9	62	32.2	82	35.4	61	45.9	28	46.4	11	54.5	274	38.0
4. Are inventory records of movable equipment maintained and substantiated by physical inspection annually or oftener?	6	66.7	26	26.9	65	61.5	81	39.5	62	45.2	28	64.3	11	54.5	279	48.4
5. Are expenditures for movable equipment charged to current operating expenses?	6	100.0	25	76.0	65	70.8	80	78.8	63	84.1	27	85.2	11	90.9	277	79.4

Respondents Classified by Enrollment Level

As one might expect, capacity and utilization studies become more prevalent as the schools become larger. In Table 10, it may be observed that the per centage of schools making studies of maximum capacity under present and/or alternative policies increases from 40.0 per cent in the smallest schools up to 72.7 per cent in the largest. This pattern occurs again in the responses to the question as to whether annual computations are made of the per cent of classroom space utilization. In this case, the affirmative answers range from 25.0 per cent in schools with less than 250 students, to 54.5 per cent in those with 2,000 or more students.

Respondents Classified by Affluence

The classification of responses by affluence of institutions in Table 11, shows that the most affluent schools are doing more physical plant analysis. Capacity studies are made by 52.3 per cent of affluent schools, compared to 49.8 per cent of all others; utilization computations are made annually by 46.2 per cent of affluent schools, compared to 35.4 per cent of all others; and, studies of costs of increasing utilization as opposed to constructing new facilities have been made by 38.8 per cent of affluent schools, compared to 23.9 per cent of others.

Responses to this portion of the questionnaire indicate that studies of physical plant utilization are not widespread. A conclusion cannot be drawn from this data as to whether the lack of such studies results from the fact that ample facilities exist at many schools or

TABLE 11

RESPONSES TO PHYSICAL PLANT PRACTICES QUESTIONS--
CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Has maximum capacity of physical plant been determined under present and/or alternative policies regarding hours and days that classes will be conducted?	65	52.3	205	49.8	270	50.4
2. Have studies been made of differences in costs between increasing utilization of existing plant versus construction of new facilities to accommodate specific enrollment increases?	67	38.8	209	23.9	276	27.5
3. Are annual computations made of per cent of classroom space utilization under existing policies regarding days and hours that classes will be held?	65	46.2	209	35.4	274	38.0
4. Are inventory records of movable equipment maintained and substantiated by physical inspection annually or oftener?	67	52.2	212	47.2	279	48.4
5. Are expenditures for movable equipment charged to current operating expenses	65	81.5	212	78.8	277	79.4

See Appendix A for a description of the factors considered to indicate affluence.

whether facilities are being added without the types of studies discussed herein.

Income Accounting Practices

Accuracy in projecting income is vital to successful budgeting in an educational institution, and since a substantial portion of the income of most private liberal arts colleges is derived from students, accurate enrollment projections are important for long-range planning. Gifts and grants are another substantial source of income which can be analyzed for purposes of control and planning.

All Respondents

As shown in Table 12, 70.9 per cent of the colleges indicated that they make use of formulas in projecting enrollment levels. Such formulas are no doubt based in part on analysis of enrollment. Annual analyses of certain aspects of enrollment are reported to be made by the responding colleges as follows: sources of students and trends within each source, 75.2 per cent; academic level of students and trend within each level, 61.1 per cent; academic area of study and trend within each area, 54.4 per cent. Twenty-eight and six-tenths per cent of the respondents indicated that they have researched the estimated effects upon total income from students of alternative tuition levels.

Gift and grant income and Development Department expenses are compared as a measure of performance of that department by 52.9 per cent of the respondents. Seventy-three and four-tenths per cent of the schools reported that they prepare annual analyses of gift and grant income classifying sources and showing trends in each source.

TABLE 12

RESPONSES TO INCOME ACCOUNTING PRACTICES QUESTIONS--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Are formulas used for projecting enrollment (and consequently, tuition income)?	5	40.0	25	68.0	65	76.9	81	74.1	60	65.0	28	67.8	11	72.7	275	70.9
2. Are annual analyses of enrollment prepared showing:																
(a) sources of students and trends within each source?	5	20.0	26	76.9	64	90.6	82	73.2	63	61.9	27	85.2	11	72.7	278	75.2
(b) academic level of students and trend within each level?	4	25.0	26	57.7	61	73.8	81	61.7	60	45.0	27	74.1	11	63.6	270	61.1
(c) academic area of study and trend within each area?	4	50.0	26	50.0	61	62.3	81	51.8	60	45.0	27	74.1	11	45.4	270	54.4
3. Have estimated effects upon total income from students of alternative tuition levels been researched?	5	20.0	26	23.1	60	33.3	81	28.4	61	31.1	26	23.1	10	20.0	269	28.6
4. Are gift and grant income and Development Department expenses compared as a measure of performance of that department?	5	20.0	26	38.5	62	51.6	81	61.7	61	59.0	28	42.8	11	36.4	274	52.9
5. Are annual analyses of gift and grant income classifying sources and showing trends in each source prepared?	5	40.0	26	57.7	64	85.9	81	74.1	63	69.8	28	71.4	11	72.7	278	73.4

Respondents Classified by Enrollment Level

The classification of responses by enrollment level, as shown in Table 12, does not indicate a pattern with respect to the per centage of respondents in each enrollment level class using formulas for projecting enrollment. Neither is such a pattern indicated with regard to the preparation of analyses of existing enrollment.

Although there are some substantial differences in the per centages of schools in each enrollment level classification that gave affirmative answers to the gift and grant income analysis questions, no trends by size of school are apparent.

Respondents Classified by Affluence

Slightly more, 71.6 per cent compared to 68.8 per cent, of the least affluent schools indicated that they make use of formulas for projecting enrollment. (See Table 13.) Likewise, the per centage of these schools performing the types of analysis of existing enrollment about which questions were asked exceeded the per centages of the most affluent schools that performed such analyses. These per centages are summarized as follows:

	Most Affluent	Least Affluent
Analyze sources of students and trends	70.1%	76.8%
Analyze by academic level of students and trends	51.6	64.1
Analyze by academic area of study and trends	43.8	57.8

This portion of the questionnaire responses indicates that high per centages of private liberal arts colleges are analyzing their

TABLE 13

RESPONSES TO INCOME ACCOUNTING PRACTICES QUESTIONS--
CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Are formulas used for projecting enrollment (and consequently, tuition income)?	64	68.8	211	71.6	275	70.9
2. Are annual analyses of enrollment prepared showing:						
(a) sources of students and trends within each source?	67	70.1	211	76.8	278	75.2
(b) academic level of students and trend within each level?	64	51.6	206	64.1	270	61.1
(c) academic area of study and trend within each area?	64	43.8	206	57.8	270	54.4
3. Have estimated effects upon total income from students of alternative tuition levels been researched?	63	28.6	206	28.6	269	28.6
4. Are gift and grant income and Development Department expenses compared as a measure of performance of that department?	65	61.5	209	50.2	274	52.9
5. Are annual analyses of gift and grant income classifying sources and showing trends in each source prepared?	66	74.2	212	73.1	278	73.4

See Appendix A for a description of the factors considered to indicate affluence.

enrollment data and gift and grant income data, which should provide useful information to administrators. There appears to be a lack of effort directed toward researching the effects of changes in tuition and fee levels upon the total income from students of an institution.

Long-Range Planning

Since the financing and construction of physical facilities and the development of faculties and administrators cannot be done on a year to year basis, long-range planning has been recognized by many educational leaders as a necessity for educational institutions. Hopefully, such planning will aid in selecting the best of several alternative courses of action and aid in avoiding decisions that might lead to financial problems.

All Respondents

Income and expenditure projections are made for five years in the future by 47.5 per cent of those responding to this questionnaire and for ten years in advance by 32.4 per cent, as shown in Table 14. Of those who make such five- and ten-year projections, 94.5 per cent and 88.2 per cent, respectively, classify projected income by its sources such as tuition and gifts and grants.

Of those schools making five-year projections of expenditures, 70.0 per cent classify them by department or activity and 34.5 per cent classify them by object farther than Salaries and Wages, Supplies and Expenses, and Equipment. Similar per centages for those schools making ten-year projections are 67.6 per cent and 46.3 per cent, respectively.

TABLE 14

RESPONSES TO LONG-RANGE PLANNING QUESTIONS—CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
1. Are income and expenditure projections made for:																
(a) two years hence?	5	0.0	19	57.9	50	64.0	70	45.7	53	49.0	23	65.2	9	55.6	229	52.8
(b) three years hence?	5	20.0	18	27.8	48	45.8	65	32.3	50	38.0	23	52.2	8	25.0	217	37.8
(c) five years hence?	5	20.0	22	50.0	54	48.1	69	42.0	55	45.4	25	64.0	10	60.0	240	47.5
(d) ten years hence?	5	0.0	20	20.0	55	40.0	69	33.3	53	24.5	27	40.7	9	44.4	238	32.4
2. If answer to any part of 1 above is yes, are income projections broken down between tuition, gift and grants, etc. for the period:																
(a) two years hence?	0	0.0	11	81.8	29	86.2	32	93.8	26	100.0	15	100.0	5	100.0	118	93.2
(b) three years hence?	1	0.0	5	100.0	22	90.9	21	95.2	19	100.0	13	92.3	2	100.0	83	94.0
(c) five years hence?	1	0.0	11	100.0	26	92.3	28	92.8	23	100.0	14	92.8	6	100.0	109	94.5
(d) ten years hence?	0	0.0	4	50.0	22	86.4	23	91.3	12	100.0	10	90.0	5	80.0	76	88.2
3. For expenditures projected five years, are they:																
(a) broken down by department or activity?	1	0.0	9	88.9	26	65.4	28	57.1	24	75.0	16	75.0	6	100.0	110	70.0
(b) broken down by object farther than the three classifications, Salaries and Wages, Supplies and Expenses, and Equipment?	1	0.0	9	55.6	26	26.9	29	41.4	25	28.0	14	35.7	6	33.3	110	34.5
4. For expenditures projected ten years, are they:																
(a) broken down as in 3(a) above?	0	0.0	4	50.0	20	65.0	20	80.0	12	58.3	9	55.6	3	100.0	68	67.6
(b) broken down as in 3(b) above?	0	0.0	2	0.0	20	45.0	21	42.8	12	66.7	8	25.0	4	75.0	67	46.3
5. Are formulas used to relate projected expenditures to projected enrollment for:																
(a) instruction?	3	0.0	22	40.9	59	49.2	67	50.7	54	42.6	25	36.0	9	66.7	239	46.0
(b) noninstructional departments or activities?	3	0.0	22	18.2	54	37.0	63	39.7	53	30.2	25	32.0	9	66.7	229	34.5

TABLE 14--Continued

	ENROLLMENT LEVEL															
	0-249		250-499		500-749		750-999		1000-1499		1500-1999		2000-Up		Total	
	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes	No.	% Yes
6. Recent literature refers to financial models (a series of inter-related formulas) into which variables representing assumptions about future circumstances can be inserted in order to simulate future financial results.																
(a) Has a model been developed for your institution?	4	25.0	25	4.0	59	5.1	77	11.7	58	5.2	28	7.1	11	0.0	252	7.2
(b) Are there plans to develop a model?	3	0.0	23	13.0	58	20.7	70	22.8	55	30.9	24	33.3	11	18.2	244	23.8
7. Has the function of Institutional Research been assigned to an office or a person?	4	25.0	24	29.2	62	38.7	79	44.3	61	41.0	28	42.8	11	18.2	269	39.4
8. If answer to 7 is yes, is this function under the Business Manager or Chief Financial Officer?	1	0.0	7	28.6	23	4.3	35	28.5	26	19.2	12	25.0	2	0.0	106	19.8

Seven and two-tenths per cent of the respondents stated that a financial model for simulating results of alternative assumptions about future circumstances had been developed for their institution. Twenty-three and eight-tenths per cent indicated that they planned to develop such a model.

The function of institutional research has been assigned to an office or a person by 39.4 per cent of the responding colleges. Of these, 19.8 per cent have assigned this function to the Business Manager or the Chief Financial Officer.

Respondents Classified by Enrollment Level

There are no clear-cut indications of greater or lesser activity in long-range planning among the respondents when classified by enrollment level, although the two largest classes, 1,500-1,999, and 2,000 up, appear to be more active in five- and ten-year projections. Table 14 shows that 64.0 per cent and 60.0 per cent, respectively, of those schools plan for five years compared to the overall per centage of 47.5, and that 40.7 per cent and 44.4 per cent, respectively, plan for ten years compared to 32.4 per cent, overall.

The classification of responses by enrollment level indicates no significant differences among classes with regard to responses to the financial model and institutional research questions.

Respondents Classified by Affluence

The more affluent schools appear to be more active in long-range planning. Table 15 shows that 52.7 per cent and 41.3 per cent

TABLE 15

RESPONSES TO LONG-RANGE PLANNING QUESTIONS--
CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
1. Are income and expenditure projections made for:						
(a) two years hence?	57	45.6	172	55.2	229	52.8
(b) three years hence?	52	38.5	165	37.6	217	37.8
(c) five years hence?	55	52.7	185	45.9	240	47.5
(d) ten years hence?	58	41.3	180	29.4	238	32.4
2. If answer to any part of 1 above is yes, are income projections broken down between tuition, gift and grants, etc. for the period:						
(a) two years hence?	25	96.0	93	92.5	118	93.2
(b) three years hence?	20	95.0	63	93.6	83	94.0
(c) five years hence?	29	96.6	80	93.8	109	94.5
(d) ten years hence?	23	95.6	53	84.9	76	88.2
3. For expenditures projected five years, are they:						
(a) broken down by department or activity?	28	71.4	82	69.5	110	70.0
(b) broken down by object farther than the three classifications, Salaries and Wages, Supplies and Expenses, and Equipment?	28	39.3	82	32.9	110	34.5
4. For expenditures projected ten years, are they:						
(a) broken down as in 3(a) above?	20	75.0	48	64.6	68	67.6
(b) broken down as in 3(b) above?	17	58.8	50	42.0	67	46.3
5. Are formulas used to relate projected expenditures to projected enrollment for:						
(a) instruction?	55	41.8	184	47.3	239	46.0
(b) noninstructional departments or activities?	53	30.2	176	35.8	229	34.5

TABLE 15--Continued

	Most Affluent		Least Affluent		Total	
	No.	% Yes	No.	% Yes	No.	% Yes
6. Recent literature refers to financial models (a series of inter-related formulas) into which variables representing assumptions about future circumstances can be inserted in order to simulate future financial results.						
(a) Has a model been developed for your institution?	62	8.1	200	7.0	262	7.2
(b) Are there plans to develop a model?	53	17.0	191	25.6	244	23.8
7. Has the function of Institutional Research been assigned to an office or a person?	64	40.6	205	39.0	269	39.4
8. If answer to 7 is yes, is this function under the Business Manager or Chief Financial Officer?	26	15.4	80	21.2	106	19.8

See Appendix A for a description of the factors considered to indicate affluence.

of the most affluent schools project income and expenditures for five and ten years, respectively. This compares to 45.9 per cent and 29.4 per cent, respectively, of the least affluent schools.

There appears to be no similar differences with regard to the use of financial models and institutional research activity.

Many institutions do not yet make use of long-range financial plans. Financial models have quite limited use, although many schools who are not using them indicate that they plan to do so. A minority of private liberal arts colleges have assigned institutional research responsibilities and of these, only a small proportion assign them to accounting officers.

Financial Data Preferences of Private Liberal Arts College Presidents

In order to determine the felt needs of private liberal arts college presidents for financial data, they were requested to complete a form, ranking ten items relating to managerial accounting data in accordance with the degree of desirability of each to them. The items were worded to encourage each respondent to take into consideration the degree to which that need was already being met so that an item that was considered to be adequately met would be ranked inferior to an item not being adequately met.

The form used to obtain the rankings is presented in Appendix C. The items were ranked one through ten, with the most desirable items being ranked with the lowest numbers. An effort was made to include

only the most important areas of financial analysis in the list of items to be ranked, in order that all of them could be considered in relation to the others without undue confusion. The items to be ranked were selected to give coverage of both planning and control accounting techniques. The selection was also related to the prominence that these subjects have received in educational literature.

There were 272 forms completed in a usable manner out of a population of 451 colleges. Reference is again made to Appendix A for the definition of the population represented by these findings, the methods used in obtaining the data, and the bases for concluding that the respondents are representative of the population.

Table 16 contains a summary of all of the rankings by all of the presidents who responded. In addition to showing the number of times that each item was ranked, one through ten, it shows the average rank of each item. Some items were ranked equally by some respondents and some respondents did not rank all ten items, consequently the total number of rankings at each of the ten levels is not equal. The items are arranged in the order of the average rank that each received.

Table 17 shows the average rank given each item by the respondents, classified by the enrollment level of the institutions represented, as well as the total average rank given by all respondents. In addition, it shows the order of the average ranks assigned by each class. The items are again arranged in the order of the average rank that each received by all respondents combined.

TABLE 16

RANKING OF FINANCIAL DATA PREFERENCES BY PRESIDENTS--ALL RESPONDENTS

	Average Rank	Number of Times Ranked									
		One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten
1. Better methods for projecting long-range income and expenditures under alternative assumptions about future circumstances.	3.9	60	50	32	24	28	20	14	20	12	6
2. More analysis of teaching loads and effects on costs of changes in class size or hours taught per teacher.	4.4	30	38	41	48	32	31	16	13	11	9
3. Better methods for determining effects on costs of adding or deleting a course, program, or activity.	4.9	24	39	36	22	34	34	26	19	17	16
4. More analysis of cost per full-time-equivalent student (or some other unit).	5.1	32	28	34	29	24	28	27	23	23	18
5. More analysis of efficiency of utilization of physical plant and effects on costs of more efficiency.	5.5	12	13	31	37	44	49	27	17	17	21
6. Better methods for preparing the annual budget.	5.6	41	22	20	25	21	17	27	30	31	33
7. More frequent reports of actual income and expenditures compared to budgeted income and expenditures.	5.9	53	18	14	18	10	18	23	25	34	53
8. More detailed reports of expenditures with regard to departments, activities and object of expenditure.	6.0	14	23	24	22	29	24	31	37	41	20
9. More detailed and more reliable comparisons of costs with similar institutions.	6.0	17	26	20	30	29	20	30	24	24	47
10. More detailed analysis of sources of gift and grant income and trend in each source.	6.6	12	20	19	12	18	19	38	51	43	32

TABLE 17

RANKING OF FINANCIAL DATA PREFERENCES BY PRESIDENTS--AVERAGE RANK--CLASSIFIED BY ENROLLMENT LEVEL OF RESPONDENTS

	ENROLLMENT LEVEL													
	Total	0-249		250-499		500-749		750-999		1000-1499		1500-2000		2000-Up	
	Ave. Rank	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order
1. Better methods for projecting long-range income and expenditures under alternative assumptions about future circumstances.	3.9	3.5	3	3.7	1	3.6	1	4.2	1,2	4.0	1	4.1	2	3.5	1,2
2. More analysis of teaching loads and effects on costs of changes in class size or hours taught per teacher.	4.4	4.7	4	4.8	3	4.9	2	4.2	1,2	4.4	2	3.3	1	3.5	1,2
3. Better methods for determining effects on costs of adding or deleting a course, program, or activity.	4.9	6.2	6	4.6	2	5.2	4,5	4.6	3	5.4	4	4.5	4	4.1	3,4
4. More analysis of cost per full-time-equivalent student (or some other unit).	5.1	1.7	1	5.3	5,6	5.1	3	4.9	4	5.6	5	4.3	3	6.1	7
5. More analysis of efficiency of utilization of physical plant and effects on costs of more efficiency.	5.5	7.0	8	5.7	7	5.4	6	5.4	5	5.7	6,7	5.9	6	4.1	3,4
6. Better methods for preparing the annual budget.	5.6	5.5	5	5.1	4	5.9	7,8,9	5.8	7,8	5.0	3	6.0	7	5.7	5
7. More frequent reports of actual income and expenditures compared to budgeted income and expenditures.	5.9	7.5	9	5.3	5,6	5.2	4,5	6.4	10	5.7	6,7	6.2	8	6.4	8
8. More detailed reports of expenditures with regard to departments, activities and object of expenditure.	6.0	6.8	7	5.8	8	5.9	7,8,9	5.8	7,8	6.0	8	6.4	9	7.0	9

TABLE 17—Continued

	ENROLLMENT LEVEL															
	Total	0-249		250-499		500-749		750-999		1000-1499		1500-2000		2000-Up	
	Ave. Rank	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order	Ave. Rank	Order
9. More detailed and more reliable comparisons of costs with similar institutions.	6.0	3.3	2	7.2	10	6.4	10	5.5	6	6.2	9	5.6	5	5.8	6
10. More detailed analysis of sources of gift and grant income and trend in each source.	6.6	8.8	10	6.5	9	5.9	7,8,9	6.3	9	7.0	10	7.0	10	7.9	10

Table 18 shows the average rank given each item by the respondents, classified as to either Most Affluent or Least Affluent, as well as the total average rank given by all respondents. The order of the average ranks assigned by each class is also shown. Again, the items are arranged in the order of the average rank that each received by all respondents combined.

The items are discussed in the order of the average rank given each by all respondents combined.

Long-Range Planning

All Respondents

Better Methods for Projecting Long-Range Income and Expenditures Under Alternative Assumptions About Future Circumstances is clearly the single item, of the ten ranked, that the presidents of private liberal arts colleges most desire. This item received an average rank of 3.9, as shown in Table 16. In addition to receiving the highest average rank, the dispersion of the individual rankings, when compared to that of the other items, indicates that more presidents placed this item first and second in their rankings and fewer placed it last.

Respondents Classified by Enrollment Level

The 0-249 enrollment level class, containing only six respondents, placed this item third in average rank and the 1,500-1,999 enrollment level class placed it second. (See Table 17.) All of the remaining enrollment level classes gave this item an average rank order of one, or ranked it equally with another item at the one and two levels.

TABLE 18

RANKING OF FINANCIAL DATA PREFERENCES BY PRESIDENTS--AVERAGE RANK--CLASSIFIED BY AFFLUENCE OF RESPONDENTS

	Total	Most Affluent		Least Affluent	
	Ave. Rank	Ave. Rank	Order	Ave. Rank	Order
1. Better methods for projecting long-range income and expenditures under alternative assumptions about future circumstances.	3.9	3.6	1	4.0	1
2. More analysis of teaching loads and effects on costs of changes in class size or hours taught per teacher.	4.4	4.4	2	4.3	2
3. Better methods for determining effects on costs of adding or deleting a course, program, or activity.	4.9	4.6	3	5.0	3
4. More analysis of cost per full-time-equivalent student (or some other unit).	5.1	4.7	4	5.2	4
5. More analysis of efficiency of utilization of physical plant and effects on costs of more efficiency.	5.5	5.8	6,7	5.4	5
6. Better methods for preparing the annual budget.	5.6	5.7	5	5.6	6
7. More frequent reports of actual income and expenditures compared to budgeted income and expenditures.	5.9	6.5	10	5.7	7
8. More detailed reports of expenditures with regard to departments, activities and object of expenditure.	6.0	6.2	8	5.8	8
9. More detailed and more reliable comparisons of costs with similar institutions.	6.0	5.8	6,7	6.1	9
10. More detailed analysis of sources of gift and grant income and trend in each source.	6.6	6.4	9	6.7	10

Respondents Classified by Affluence

The presidents of both the most affluent and least affluent classifications of these colleges ranked the long-range planning item first, as shown in Table 18. The difference between the average rank of this item and the item ranked at the second level is greater for the most affluent schools.

Tickton popularized the concept of long-range planning in colleges in the early 1960's and the literature has given it a considerable amount of attention since then.[1] These factors have no doubt been instrumental in bringing the problem to the attention of heads of colleges, causing them to rank this need at a high level as they have done in this survey. However, the fact that the need is ranked this high indicates that satisfactory procedures for long-range projections are not yet in widespread use.

Table 14, in which the long-range planning section of the accounting practices questionnaire are summarized, shows that 47.5 per cent of the private liberal arts colleges responding to that questionnaire project income and expenditures for five years and 32.4 per cent for ten years. This same table shows that only 7.2 per cent of these colleges have developed financial models, which indicates that more or less brute force methods are in use by those colleges which do make long-range projections. These findings appear to be consistent with the ranking results which indicate a felt need for better methods of making long-range financial projections.

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[1]Tickton, Needed: A Ten Year College Budget, op. cit.

Cost-volume-profit analysis in educational institutions would provide a rudimentary beginning to building a model for long-range financial projections. Table 8 shows that 39.7 per cent of the private liberal arts colleges responding to that survey have classified expenses as to their variable or nonvariable nature. The simplest model for projecting income and expenditures should consider the behavior of costs and revenues with volume. The lack of activity in this technique no doubt underlies the high priority given to long-range projections by the presidents in their responses to the Ranking of Financial Data Preferences form.

Cost Analysis

All Respondents

Three of the items of financial data which were ranked by the college presidents may be classified generally as cost analysis. Their average ranks and average rank order, as shown in Table 16, are summarized below:

	Average Rank	Order
More analysis of teaching loads and effects on costs of changes in class size or hours taught per teacher	4.4	2
Better methods for determining the effects on costs of adding or deleting a course, program, or activity	4.9	3
More analysis of cost per full-time equivalent student (or some other unit).	5.1	4

None of these three items was ranked first with greater frequency than all other levels; however, they were ranked frequently at the second through fifth levels with a definite tailing off of frequencies at the more inferior levels. It appears that a great number of presidents who were not willing to give cost analysis items the highest ranking were, at the same time, reluctant to push them too far down in their rankings.

Respondents Classified by Enrollment Level

When the average rankings of these items are classified by the enrollment level of the colleges represented by the responding presidents, as shown in Table 17, there is close agreement among the classes. The only classes in which the average rank order of any of the three items varies from the overall average rank order by more than one level are the 0-249 enrollment level class and the 2,000-Up class. The average rank order of these three items by the six schools in the 0-249 class are four, six, and one, respectively, as opposed to two, three, and four, overall. The exception in the 2,000-Up class is that the item referring to unit costing has an average rank order of seven, as opposed to the overall average rank order of four.

Respondents Classified by Affluence

The average rank order of the three cost analysis items is identical for the most affluent and least affluent classifications. As shown in Table 18, the average rank of the analysis of teaching loads

item is approximately the same in both classes; however, the affluent schools gave the items regarding costs of adding or deleting a course, program, or activity and costs per unit a higher average rank.

Emphasis in the literature on efficiency in educational institutions in recent years, as reflected in the faculty-student ratio, which was dramatically pointed out by Ruml,[2] may have contributed to the interest shown in Item 2, More Analysis of Teaching Loads and Effects on Costs of Changes in Class Size or Hours Taught per Teacher. The fact that the item has an average rank order of two, indicates that the presidents of private liberal arts colleges desire more information than is presently being provided in this area. The accounting practices questionnaire results showed that less than half of the respondents had computed the effects on costs of alternative assumptions regarding the faculty-student ratio. (See Table 8.)

Item 3, Better Methods for Determining Effects on Costs of Adding or Deleting A Course, Program or Activity, has been the subject of more recent educational literature. (See Chapter III.) Accomplishment of this item depends, to a large degree, upon determining the cost of activities which cut across normal departmental lines, sometimes called activity cost analysis. Only 4.5 per cent of the respondents to the accounting practices questionnaire indicated that such cost analysis had been done. (See Table 8.) The average rank order of three, given this item, indicates that additional efforts in this area would be welcomed by private liberal arts college presidents. The separation of

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[2]Ruml, op. cit.

costs into their variable and nonvariable components, which is the initial step in cost-volume-profit analysis, would also be an initial step in making this kind of cost analysis.

More Analysis of Cost per Full-Time-Equivalent Student, given average rank order number four by these presidents, has been the subject of much educational literature for almost sixty years, as discussed in Chapter III. Even so, Table 8 shows that only 59.6 per cent and 49.3 per cent, respectively, of the accounting practices questionnaire respondents indicated that they regularly computed unit costs for the college as a whole and for the instruction function.

Physical Plant

All Respondents

The item described as More Analysis of Efficiency of Utilization of Physical Plant and Effects on Costs of More Efficiency received an average rank order five, as shown in Table 16. This item received a relatively small number of extremely high or extremely low rankings, with the majority of presidents ranking it from the third to the seventh level.

Respondents Classified by Enrollment Level

There is some indication, in Table 17, that the presidents of the smaller schools are less concerned with plant utilization. This is evidenced by the average rank orders of eight and seven given this item by the 0-249 and the 250-499 enrollment level classes, respectively. At the same time, the largest enrollment level class gave equal

average ranks to this item and another for third or fourth level average rank orders, compared to the overall average rank order of five.

Respondents Classified by Affluence

The results shown in Table 18 indicate that the most affluent institutions' presidents feel relatively less need for more plant utilization analysis than do the least affluent colleges' presidents. The former ranked this item equally with another item at the sixth and seventh levels, while the latter gave it an average rank order of five.

The literature frequently considers the need for and methods for studying space utilization. Nevertheless, the portion of the accounting practices questionnaire results summarized in Table 10 indicates that only 50.4 per cent of the responding private liberal arts colleges have made studies of maximum capacity and 38.0 per cent make annual computations of the per centage of classroom space utilization. These results could indicate a lack of need for such studies because of the existence of more than adequate facilities at many institutions; however, the average rank order given this item by the presidents appears to indicate some desire for additional analysis in this area.

Budgeting

All Respondents

The average rank of the item, Better Methods for Preparing the Annual Budget was 5.6, placing it sixth in order of all of the average ranks. (See Table 16.) The highest frequency of rankings occurred in

the first and tenth levels. This appears to be an indication that a significant number of schools are not satisfied with their budgeting procedures but that larger numbers are satisfied to the extent of ranking the budgeting item among the last half of the ten items.

Respondents Classified by Enrollment Level

Two enrollment level classes place the average rank order of the budgeting methods item more than one level away from the overall average rank order of six. Table 17 shows that enrollment level class 250-499, placed an average rank of 5.1, for an average rank order of four, on this item and that enrollment level class 1,000-1,499, ranked this item at 5.0 on the average for an average rank order of three. There is no apparent explanation for these deviations. Results in the other classes are reasonably consistent.

Respondents Classified by Affluence

The item, Better Methods for Preparing the Annual Budget was given an average rank of 5.7, by the most affluent respondents and 5.6, by the least affluent. (See Table 18.) Average rank orders of five and six, respectively, resulted. No significant differences in the preferences of the presidents of these two groups are indicated by these results.

The overall rankings of the budgeting item are consistent with the results of the accounting practices questionnaire which showed that, of the specialized accounting practices dealt with therein, budgeting is practiced much more widely than the others. These results are also

consistent with the literature which indicates that annual budgeting is now a widespread practice in educational institutions.

There were a sufficient number of rankings of this item in the first five levels to indicate that there are many college presidents who still place better methods for preparing the annual budget on a higher priority than several of the other items included in this study. This indicates that the quality of budgeting practices may not have kept pace with the quantity.

General Accounting

All Respondents

Items seven, eight, and nine fall into the classification of general accounting matters, primarily with respect to reporting practices. The average ranking of these items and their order, relative to all ten items ranked, are as follows:

	Average Rank	Order
More frequent reports of actual income and expenditures compared to budgeted income and expenditures.	5.9	7
More detailed reports of expenditures with regard to departments, activities, and object of expenditure.	6.0	8
More detailed and more reliable comparisons of costs with similar institutions	6.0	9

An equal number ranked the first of these items number one and number ten. This appears to indicate that those who do not feel that this need is met tend to rank it high, whereas once it is felt that

this need is met, it is ranked low. In contrast, the second of these items, which has approximately the same average rank, is ranked neither first nor last by a large number of presidents. This indicates that there are more varying degrees of satisfaction with regard to this item, as opposed to one being either wholly satisfied or wholly dissatisfied. The rankings of the third of these items appear to reflect mixed opinions with regard to the importance of comparisons of costs with other institutions, with the exception of a significantly larger group who placed this item last in their rankings.

Respondents Classified by Enrollment Level

Table 17, which shows the average ranks of the items with the responses classified by enrollment level of the colleges, indicates that items seven and eight, dealing with the frequency and detailed nature of income and expenditure reports, are ranked of slightly less importance by the larger schools. The 0-249 enrollment level class average rank is an exception to this conclusion; however, only six schools are included therein. The average rankings by enrollment level class indicate that the larger schools rank more detailed and more reliable comparisons of costs with similar institutions more favorably than do the smaller schools. The 0-249 and the 1,000-1,499 enrollment level classes represent exceptions to this conclusion. Again, the fact that there are only six schools in the former class makes its results less susceptible to the law of large numbers. There is no apparent reason for the 1,000-1,499 enrollment level class placing this item in

average rank order of nine while the respondents in the class immediately preceding this one and the two succeeding classes place it either fifth or sixth.

Respondents Classified by Affluence

Comparisons of the average ranks and the order of the average ranks relative to all ten of the items for the most affluent as opposed to the least affluent institutions follow:

	Most Affluent		Least Affluent	
	Average Rank	Order	Average Rank	Order
More frequent reports of actual income and expenditures compared to budgeted income and expenditures	6.5	10	5.7	7
More detailed reports of expenditures with regard to departments, activities, and object of expenditure	6.2	8	5.8	8
More detailed and more reliable comparisons of costs with similar institutions	5.8	6,7	6.1	9

The most affluent schools rank More Frequent Reports of Actual Income and Expenditures Compared to Budgeted Income and Expenditures last among the ten items, compared to an average rank order of seven for the least affluent schools. Both rank More Detailed Reports of Expenditures with Regard to Departments, Activities, and Object of Expenditures in eighth place, on the average. The most affluent schools appear to value cost comparisons with similar institutions more highly than the least affluent, placing this item in the sixth or seventh

average rank order as opposed to ninth for the least affluent schools.

As a whole, considering the average rank order of seven, eight, and nine, placed on these items by all respondents as a group, it appears to be reasonable to conclude that basic reporting of income and expenditures is of less concern to private liberal arts college presidents than other planning and control information. It is possible that the influence of College and University Business Administration has been instrumental in satisfying the needs of administrators for this type of information. As shown by Table 4, this book is regularly referred to for guidance in accounting matters by 91.4 per cent of the private liberal arts colleges responding to the accounting practices questionnaire.

In general, educational literature has dealt more thoroughly with general accounting matters of this type than with other managerial accounting techniques.

Income

All Respondents

Relative to the other items in the list to be ranked, presidents of private liberal arts colleges apparently feel that they are receiving adequate analysis of gift and grant income, or they place less importance on this type of analysis. Table 16 shows that this item was given an average rank of 6.6 which places it last in average rank order.

Respondents Classified by Enrollment Level

As shown in Table 17, three enrollment level classes gave this item an average rank order higher than ten. They were the 250-499 and 750-999 classes which gave average rank orders of nine, and the 500-749 class which gave equal average rank orders to this item and two others at levels seven, eight, and nine.

Respondents Classified by Affluence

As indicated in Table 18, the most affluent college presidents gave More Detailed Analysis of Sources of Gift and Grant Income an average rank order of nine as opposed to ten for the least affluent.

The results of the accounting practices questionnaire shown in Table 12, indicate that 73.4 per cent of the private liberal arts colleges responding are preparing such analyses of gift and grant income annually. This result is consistent with the average rankings made by the presidents.

This chapter summarized the findings with regard to certain managerial accounting techniques being practiced in private liberal arts colleges and with regard to the preference of private liberal arts college presidents for additional efforts in selected areas of managerial accounting. Chapter V pursues the application of cost-volume-profit analysis to a private liberal arts college and its relationship to various other areas of managerial accounting.

CHAPTER V

COST-VOLUME-PROFIT ANALYSIS AS A MANAGEMENT TOOL IN PRIVATE LIBERAL ARTS COLLEGES

The literature related to managerial accounting for colleges and universities, which is reviewed in Chapter III, and the research findings, which are summarized in Chapter IV, indicate that there has not yet been a clear and widespread application of cost-volume-profit analysis techniques in colleges and universities. The name used for such techniques might be appropriately shortened to cost-volume analysis when applied to nonprofit organizations, but the underlying concept is unchanged. In fact, a frequent criticism of "break-even" analysis for commercial enterprises is that emphasis is placed on breaking even, whereas it is the desire and intention of management to make a profit. The nonprofit organization is properly interested in focusing on the break-even point.

Review of Cost-Volume-Profit Analysis Concepts

There are many causal factors associated with revenues, costs, and profits. Market demand, competitive conditions, and selling efforts affect costs. Some of these elements and many others manifest themselves in the quantifiable, and to some degree predictable, factor of volume level. Although individual factors that can be further

analyzed underlie volume level, it has been singled out for special attention as a fundamental determinant of profits.

It is not difficult to visualize and to show that at a given price level revenues will vary directly with the volume of output in units. It is more difficult, both conceptually and analytically, to show how total costs behave with respect to volume level of output. Consequently, most of the efforts in cost-volume-profit analysis have been in the area of establishing the cost-volume relationship.

Fixed Costs

The presence of certain costs that are fixed in amount for a given period of time, within a relevant volume range, causes the relationship of total costs and volume level to be disproportionate. Such costs are referred to as "fixed," "capacity," "period," "standby," and "time" costs. They are of three primary origins:

1. Costs of the use of facilities,

2. Costs of having an organization in readiness, such as the costs of key employees or a minimum working staff required for a minimum output.

3. Costs of following plans or policies that are considered necessary for the long-term good of the organization, such as advertising and research.[1]

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[1]National Association of Accountants, The Analysis of Cost-Volume-Profit Relationships (New York: National Association of Accountants, n.d.), p. 3.

Fixed costs are determined by the volume of business anticipated and by the methods chosen to conduct it.[2] Within a framework of assumptions regarding the relevant range of volume, stable price levels, unchanged production techniques, and a period of time too short to change capacity, they will remain the same regardless of fluctuations in volume. Since some of these assumptions hold for longer periods than others, costs considered fixed during a short period may not be considered so in a longer period.

The fact that fixed costs do exist within the time period limitations imposed, brings about the disproportionate relationship of total costs to volume at different volume levels.

Variable Costs

At the other end of the continuum that represents the degree of variability of costs with relation to volume are costs that vary in exact proportion with volume. The classic examples of such costs in a manufacturing concern are direct materials and direct labor. By making numerous observations of variable cost levels at different volume levels, a functional relationship (generally considered to be a straight line, within the relevant volume range) between such costs and volume levels can be obtained.

Not all costs that are considered variable vary automatically. The degree of variability of such costs depends upon the control that is exercised to reduce them when the level of volume falls. Because of

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[2] Ibid., pp. 3-4.

this subjective factor, costs which are considered variable by one firm may be considered fixed by another firm which doesn't intend to exercise strict control. Such costs would be in the nature of those considered "fixed" by administrative policy.

Semi-Variable Costs

Certain costs do not lend themselves to clear-cut identification as either fixed or variable. A National Association of Accountant's publication lists three possible reasons for this:

1. A certain minimum of an expense, such as power expense, is required to remain operational. Beyond this minimum, the usage varies with volume.

2. Accounting classifications by object of expenditure may combine the expense for usage of a commodity or service, part of which is dependent upon volume and part of which is dependent upon some other factor. Fuel used for both heating and for production purposes is an example.

3. There are some expenses that cannot be divided into infinitely small parts and which consequently increase in steps as volume increases. A change from a single shift to two shifts is an example.[3]

The first two types of semi-variable costs can be further analyzed and classified as either fixed or variable. The third type of cost may be averaged out and treated as variable, treated as fixed, or the steps may be dealt with as such. The significance of the steps would be factors to consider in determining which method to follow.

Measuring Volume Level

A unit of measure that reflects the activity level of an organization must be selected. For a single-product organization, the

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[3]National Association of Accountants, op. cit., p. 8.

number of units of that product sold is generally the most satisfactory measure. For a multiproduct company it is usually necessary to develop a composite index of output and this index is only valid for the specified "mix" of products. In such cases the most useful application of cost-volume-profit analysis might be at the individual plant or department level.

General Objectives and Uses

The primary purpose of cost-volume-profit analysis is for use as a tool to project results of operations at alternative volume levels. In the absence of the establishment of a generalized relationship of costs and volume, the only alternative for projecting results of operations is to prepare a detailed budget of operating costs at each level of volume that appears to be a relevant possibility. A related use of the cost-volume relationships is that of flexible budgeting procedures. Under such procedures budgeted costs depend upon the actual volume level attained, based upon the cost-volume relationships that have been established.

Other uses include providing answers to various "What if . . ." questions, such as:

What if fixed costs are increased or decreased by a certain amount?

What if the variable cost rate is increased or decreased by a certain amount?

What if there is a combination of changes in fixed costs and the variable cost rate?

What if there is a change in selling prices, either with or without a change in units sold?

Also, the relationships developed in cost-volume-profit analysis reduce the number of variables that are considered in planning and decision-making to a manageable size, so that they are more easily understood by administrators. The relationships of the factors lend themselves to graphic presentation for further clarity.

Finally, the establishment of the variable cost-volume relationship establishes a norm or standard against which actual performance may be later measured.

General Applicability of Cost-Volume-Profit Analysis to Private Liberal Arts Colleges

It is interesting to note that many of the circumstances that are considered to place limitations on the usefulness of cost-volume-profit analysis for industry do not appear to exist in educational institutions, hence hinting at the possibility that such analysis may be even more useful to such organizations than to some profit-making enterprises.

Measuring Volume Level

The first of these has to do with finding a satisfactory measure of volume for the organization that has a variety of products. Assuming that such a measure is determined, there is the probability that the products make different profit contributions, which means that a change in product mix will invalidate the use of the measure.

It appears that most private liberal arts colleges can be considered to be "single-product" organizations from the standpoint of measuring their output. The literature contains a considerable amount of discussion of the selection of a unit of measurement for the output of educational institutions in connection with the development of unit costs. (See Chapter III.) Once the attempt to have the measure reflect quality as well as quantity of output is abandoned, the number of full-time-equivalent students or student credit hours taught offer satisfactory measures of the activity level of a private liberal arts college.

Production "Mix"

It is true that the cost-volume relationship of the institution may be affected by the distribution of the output among academic departments that have differing unit-costs. Two characteristics of a college keep this from causing an insurmountable "change in mix" problem. One is, that there are few enough academic departments in a college that changes in the number of students or credit hours produced by a department can be easily determined and the effects on total cost isolated. The other is that dramatic changes in mix over a short-to-intermediate period of time is unlikely. A change in mix is even less likely to change the revenue-volume relationship, because differential pricing among the academic areas is infrequent. If differential pricing is practiced, through special course fees or otherwise, the effect of changes in mix can easily be accounted for because of the relatively small number of "products" or academic departments.

Production Methods

A second limitation, or necessary assumption, in applying cost-volume-profit analysis is that production techniques do not change. Although there are changes in teaching techniques which might change cost-volume relationships over a period of time, such changes are not frequent or sudden. When they do occur, the effect on cost relationships is primarily reflected in the student-faculty ratio. The effect of a change in student-faculty ratio can be easily isolated.

Changes in Product Specifications

The third limitation is that frequent changes in product specifications which change the nature of product costs effect the usefulness of cost-volume analysis in a manufacturing enterprise. Similar changes in a service-dispensing organization such as an educational institution are more apt to be gradual and perhaps imperceptible.

Prices of Factors

The volatility and lack of predictability of factor prices, as well as output prices, place another possible limitation on cost-volume-profit analysis in commercial enterprises. This is particularly true in manufacturing firms where raw material costs are significant. Since a larger proportion of the costs of educational institutions is for employee services, the prices of which do not change as rapidly or as unpredictably as raw material costs, a generalized cost-volume relationship does not appear to be as susceptible to disturbance from price changes.

Price Elasticity of Demand

Since many factors other than price weigh heavily upon the selection of a college by students such as location, religious associations, parental influence, and specialized academic expertise, it is doubtful that the total revenue of a college reflects as high a degree of price elasticity of demand as most commercial enterprises. If this is true, the revenue-volume relationship of an educational institution can be predicted with greater accuracy, resulting in a more accurate volume-profit relationship.

Based upon the potential applicability of cost-volume-profit analysis to educational institutions as indicated by the preceding discussion as well as the brief references to fixed and variable cost behavior in the literature related to college and university accounting, it appears to be worthwhile to explore the specific concepts, techniques, and problems of developing a cost-volume-profit model for an educational institution. The usefulness of such a model for an institution would be for guidance in answering administrators' questions such as:

1. What will be the effect on projected financial results of operations if the number of students in a future period is more or less than anticipated?

2. What will be the effect on required income in a future period, under alternative assumptions about future conditions?

3. What will be the financial effect of obtaining greater output from existing facilities as opposed to adding new?

4. What level of enrollment will be required to offset the additional fixed costs of adding a new building or a new academic program?

5. Which and how much of the institution's costs are fixed or variable in the short-term, and thereby subject to control in the short-term?

The remainder of this chapter is devoted to a study of the concepts, problems, and techniques for applying general cost-volume-profit analysis specifically to nonprofit private liberal arts colleges.

Applying Cost-Volume-Profit Analysis to Private Liberal Arts Colleges

The heart of cost-volume-profit analysis lies in the assumption that some costs remain the same regardless of the activity level of the organization, that others will increase or decrease with the activity level, and that the two can be distinguished. One of the unique aspects of educational institutions, as opposed to most commercial organizations, is that the volume level remains the same for a sustained period rather than fluctuating on a daily, weekly, or even monthly basis. At the minimum, the relevant period for measuring volume is the school term (quarter, semester, etc.) and assuming that a relatively constant relationship exists between the enrollment level of the various terms in a year, the calendar year may be the most practical period for each observation of costs and volume level to be used in arriving at a generalized relationship between cost behavior and volume level.

On the other hand, some costs that are considered to be variable, such as certain faculty salaries, may be difficult to reduce promptly when enrollment levels fall because annual contracts are generally made in advance of the school year, tenure agreements make curtailment difficult, and the presence of and need for specialists in certain academic areas mitigate against orderly "lay-offs" based on seniority. The short-term for determining the variability of these expenses may be at least two years.

The fact that different volume levels are sustained for long periods should make the historical relationship of variable costs and volume more reliable for forecasting purposes since the longer period allows time for variable costs to be reduced to a level commensurate with the volume level. An exception is the faculty cost discussed in the preceding paragraph. In attempting to arrive at a functional relationship, those costs that cannot be reduced in the same period that volume declines should be separated from other variable costs. Offsetting the advantage of the longer periods in which variable costs can be adjusted to the volume level is the fact that if only one observation per year of volume level and variable expenses is possible, then it is difficult to obtain a large number of observations for purposes of the application of least-squares techniques to derive a functional relationship based on several observations. The constant price level, mix, and technology assumptions lose their validity as the individual observations become several years old.

Fixed or Capacity Costs

Inasmuch as service organizations do not have the counterpart of a manufacturing firm's classic variable costs of direct material and direct labor, it is likely that fixed costs are relatively more important in a college than in an organization that produces tangible products. A high degree of operating leverage resulting from a high proportion of fixed costs makes financial results of operations in a college quite sensitive to changes in enrollment levels.

Fixed costs must be related to a specific capacity, for when that capacity is reached the assumption is that the volume level can go no higher without incurring additional fixed costs. Capacity concepts in an educational institution differ from those of a business enterprise in that capacity of the college is determined by subjective decisions as to what hours of the day, days of the week and months of the year that classes will be conducted. Capacity of a manufacturing firm is generally objectively set at a specified proportion of a rated capacity. This proportion can generally be related to industry norms or customs with regard to standard working hours and a specified number of shifts.

A given school, under certain circumstances, might consider its operations at capacity if classrooms are completely utilized during the morning hours for five days a week. Another may not consider that it has reached capacity until classrooms are utilized for sixteen hours a day for six days a week. The clientele of the college will largely determine what constitutes capacity for a given institution.

The administration must sense what this capacity is in making its determinations of when additional fixed costs will be required to increase capacity.

Relevant Volume Range

A discussion of fixed or capacity costs must relate such costs to a relevant volume range. Capacity, as discussed in the preceding paragraph, establishes the upper limit of this range. There is obviously a lower limit under which certain costs considered to be necessary within the relevant range of volume would no longer be considered necessary. At volume levels below the relevant range, certain costs that may have been considered fixed by policy, such as certain public relations expenditures, would be reduced. Organization costs such as the cost of a placement director or a dean's office might necessarily be reduced. Finally, committed costs might be reduced by closing a part of the plant at such low volume levels.

Committed Fixed Costs

With one major exception, colleges incur the same types of committed fixed costs as do commercial organizations. Such costs are defined as those resulting from decisions to acquire long-lived assets or enter long-term contracts requiring continuing cash outlays for the use of facilities.[4] Once such commitments are made they are not easily reversed without substantial losses. Such costs are often termed occupancy costs.

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[4]National Association of Accountants, op. cit., p. 3.

The major difference between business organizations and colleges in this area of costs is in the recognition of depreciation of physical plant. The predominate view in educational finance is that depreciation expense should not be recognized. (See p. 36, Chapter III, for a discussion of this subject.) This view is based on the assumption that the cost of existing physical plant was not met from educational and general revenues, nor will the cost of future facilities be so met. Such costs have customarily been met from funds of benefactors over and above normal contributions to finance operating deficits, and educational "accounting principles" assume that this will continue to be the case.

In establishing the fixed costs of a specific institution, this concept of recognizing depreciation expense may or may not be followed, but it should be specifically considered and the appropriate assumptions clearly stated. If the institution follows the practice of relying on funds other than from normal recurring sources for the replacement of physical plant, depreciation may be omitted as a fixed cost. If it attempts to cover all costs including depreciation, from its year to year revenues, then depreciation should be included in fixed costs.

Since most educational institutions are not required to pay property taxes, they do not have this major fixed expense. If for any reason (such as the college being a profit-making organization) property taxes are paid, they should be classified as fixed.

Insurance of the plant against physical damage is a fixed expense that is common to virtually all institutions. Even though such expense may be classified as General Institutional expense rather than Operation and Maintenance of Plant, it is closely related to committed or occupancy costs. If all insurance expense is charged to a single account, it will be necessary to analyze the charges to determine the amount that represents this type of coverage.

Plant operation and maintenance salaries and wages require detailed analysis to determine the amount that would be required to maintain the physical plant and grounds whether or not the activity level, as reflected by enrollment levels or credit hours taught, increased or decreased. The industrial engineering study approach would appear to be applicable to the determination of the appropriate number and nature of employees required to maintain the physical plant. This does not mean that an engineer is required to make this determination but rather that a knowledgeable person such as the Supervisor of Buildings and Grounds could be consulted as to the costs of accomplishing the "fixed" operation and maintenance of the plant. This approach appears to be more direct and reliable for this type of expense than would an analysis of historical costs.

A certain portion of supplies expense would be required for the minimum operation and maintenance of plant. Analysis of the types and costs of supplies used would be necessary to segregate these fixed costs.

A certain portion of utilities costs would be incurred regardless of the number of students enrolled during a given period. A higher proportion of these costs is likely to be fixed for the service-dispensing educational institution than for a manufacturing organization that consumes the output of utilities in its manufacturing process. Consultation with the Supervisor of Buildings and Grounds as well as reference to minimum utility company charges would be in order to establish the fixed or standby utility costs.

Contractual expenditures that should be included in committed fixed costs are rentals of land, plant, or equipment, the use of which is required for accommodating the planned volume levels and interest expense that is being met from educational and general revenues.

All other expenditures should be reviewed to isolate those that must be continued in order to protect or maintain the future benefits of past expenditures. Likewise, any other expenditures that are contractually required should be sought out and classified as committed fixed costs. Finally, in order for the results of the analysis to have applicability to the future, committed fixed costs that will be incurred as the result of plans for plant expansion or contractual obligations must be estimated. Information from which such estimates are made must be obtained from the administrators and the governing board.

Organizational Fixed Costs

Within the relevant range of possible volume levels, the expenses of certain administrative offices must be considered to be fixed.

The core of such offices in the typical private liberal arts college consists of the chief executive officer and the chief academic, business, development, and student services officers. The organization of a given institution may provide for the division of the responsibilities of one or more of these areas of responsibility among more than one person. To the extent that this division would be considered to be necessary, even at the lower extreme of the relevant volume level, the cost of each of these persons would be considered to be organizational fixed costs. The minimum amount of secretarial and clerical help that would be required to support these offices constitutes organizational fixed costs.

In making the determination as to which of these organizational costs would continue throughout the relevant volume range, the opinions of the chief executive officer should be sought. Since such costs are not committed, their fixed nature is a subjective judgment that must be made by the person responsible for seeing that the capacity is provided for conducting the institution's business.

A more difficult area of potential organizational fixed costs lies in the instructional organization. There are several factors at work in this area that would tend to cause the cost of certain personnel to have fixed characteristics. One of these is the necessity of maintaining certain academic departments in order to maintain accreditation. Others are the presence of academic specialists in programs that are considered vital to the continued viability of the school, tenure policies, and decisions to overstaff in order to entice additional students or in anticipation of a higher enrollment.

The first factor suggests that the cost of at least one faculty member, probably the chairman, in each of the departments considered to be necessary for the continued accreditation of the institution, should be considered fixed. In addition, if the minimum subject matter offerings of one of these departments is such that more than one person would be required to conduct them, the cost of the additional faculty would also be fixed. Consultation with the chief academic officer and perhaps other administrators would be necessary to make these determinations and to arrive at the appropriate amount of such fixed costs.

The second factor requires more subjective judgment than the first in that a decision is required as to whether the program that depends upon the academic specialist, who is not covered in the class discussed in the preceding paragraph, will be maintained if volume falls within the relevant range. Whether any fixed costs of this nature exist depends entirely upon the decision of the administration and must be determined by consultation with them. The fixed nature of such costs hinges primarily on the degree to which the institution depends upon the program under consideration to provide a uniqueness to the institution or to fulfill the demands of its clientele.

Finally, a potential element of fixed instructional cost that must be considered is that caused by the granting of tenure. Even though tenure agreements may provide for termination in the case of financial hardship, the intention of the administration to invoke this provision must be the deciding factor as to whether the cost of tenured faculty, who do not fall into one of the two previously discussed fixed cost categories, should be considered fixed.

It is possible that some minimum supporting secretarial and clerical staff should be associated with the faculty, the cost of which is determined to be fixed as the result of the analysis of organizational costs.

Policy Fixed Costs

Certain costs are incurred by organizations that are neither committed nor technically necessary to provide the capacity for conducting their basic operations. In a manufacturing organization the policy of maintaining a minimum production work force would cause the costs of doing so to be considered to be fixed. The educational institution policies that would be comparable to this type of cost were discussed under the category of organizational fixed costs.

In arriving at policy fixed costs it is necessary to challenge virtually every cost that has not been classified as fixed under the committed or organizational categories. If the administration has demonstrated by its actions or indicated in response to inquiries that certain costs would be continued at the lower limit of the relevant volume range, such costs must be considered fixed. Although the objects of expenditure that would be considered fixed for this reason would differ greatly among institutions, there are certain ones that would be likely candidates, such as health services, student recruitment, news service and public relations, fund raising, alumni affairs, placement services, public services, memberships and dues, travel, publications, intercollegiate athletic expenditures, intramural activities, and student aid.

Although some, or all, of these costs may be related to the level of activity of an institution, if there is no intention of controlling their level, with changes in the activity level within the relevant volume range, they should be classified as fixed costs.

As noted at the beginning of this discussion, the sum of the three general classes of fixed costs is likely to be substantial, particularly if those resulting from administrative decisions are carefully sought out. One of the principal benefits derived from such an analysis may be the insights gained from the necessity of having to consider which costs would be reduced and which would not under the stress of low activity levels. In fact, a definite plan or hierarchy of cost reduction measures to be invoked when enrollment levels fall to certain levels could be developed from such a study.

The determination of the amount of capacity costs may also serve as an incentive to strive to keep enrollment at or near the top of the relevant volume range in order to keep the per-student or the per-student-credit-hour fixed costs at a minimum. The recognition of the significance of total fixed costs may also serve as an incentive to consider adjusting the policies that establish the capacity of the institution.

Variable Costs

After fixed or capacity costs have been isolated, the problem remains of determining how the remaining costs behave with reference to some measure that reflects the activity level of the institution.

Measuring Volume Level

The number of full-time-equivalent students or student credit hours taught are measures of volume that can be related to variable costs in substantially all departments or functional areas of a private liberal arts college. Class hours are another possibility; however, they are not usually as readily available for the institution as a whole. In addition, it appears that teaching loads are most often measured in credit hours rather than class hours. Such institutions lend themselves to an overall cost-volume analysis of the general and educational functions. A more diverse organization experiences difficulty in defining a single measure of activity level that can be related to the incurrence of costs in all of its divisions, departments, or functional areas. The objections that are raised to the full-time-equivalent student or the student credit hour as appropriate units for cost accounting purposes are not valid for cost-volume analysis. (See Chapter III.) In the latter case, no attempt is being made to determine what the proper output of an educational institution should be. The only purpose is to find an indicator of activity that moves in the same direction as costs and in the same general proportions.

There are two basic methods of relating variable costs to the unit of measure of volume that is selected. One is the "engineering" approach and the other is the statistical-analysis-of-historical-costs approach.

Engineering Approach to Variable Cost Analysis

The engineering approach has the advantage of yielding results that are not distorted by the effects of factors other than volume that might exist during the period being used for statistical analysis. Educational institutions do not incur one of the major variable costs that lends itself to the engineering approach in a manufacturing concern, namely, raw materials costs. Another cost that lends itself to the engineering approach in industry, direct labor, does have a counterpart in the educational institution. This counterpart is the cost of instruction, and the engineering standard by which it may be measured is the student-faculty ratio.

Although there are factors that cause instructional costs to be "sticky" with respect to reduction in the volume level of an institution on a year to year basis, the overall student-faculty ratio can be planned. In addition, a particular mix of faculty rank can be planned and used as a basis for an average faculty salary. From these two sets of "engineered" facts the per-unit cost for faculty salaries can be derived.

Student-Faculty Ratio

Two assumptions can be made with respect to planning the student-faculty ratio. These assumptions have a direct bearing on the classification of faculty costs between fixed and variable. The first is that the institution will maintain a specific overall student-faculty ratio, or, if there are changes in this ratio they will be planned rather than the result of a change in enrollment level. In other words,

within reasonable limits, considering lag time, the number of faculty will be adjusted to maintain the ratio when the enrollment level changes. When a faculty member teaches less than a full load because of administrative or other duties, full-time-equivalent faculty concepts must be applied.

Under the assumption that a specific overall student-faculty ratio will be maintained, there is no need to classify any faculty costs as fixed, as discussed under the topic of fixed costs beginning on page 178. By definition, total faculty costs are variable when the policy is to maintain a specific student-faculty ratio. An exception would occur when the lower limit of the relevant volume range of an institution is less than the enrollment level that would be required to maintain those faculty members considered to be part of the fixed organization at the specified student-faculty ratio. In actuality, this would not be an exception to the conclusion that all faculty costs are variable under this assumption, but rather it would be an exception to the assumption that the student-faculty ratio will be maintained at a specified level. This assumption, then, is only tenable for institutions whose relevant volume range is higher than the enrollment level that would be warranted by the faculty members considered to be part of the fixed organization, taking into consideration a specified student-faculty ratio.

The second assumption regarding planning of the student-faculty ratio was alluded to in discussing the first. It is that a specific student-faculty ratio will be maintained unless the enrollment level

falls below that which would be required to sustain the "fixed faculty." Under this assumption about the relevant volume range, it is necessary to identify the fixed faculty costs.

Graph A, in Figure 5, illustrates the circumstances of an institution whose relevant volume range begins at an enrollment level of 500 and whose total faculty costs exceed fixed faculty costs at that enrollment level. Either subjective judgment, based upon past enrollment levels, that it is unnecessary to consider lower volume levels or the objective conclusion that the institution could not justify its continued existence, financially, at lower enrollment levels may cause institution A to reach the conclusion that its relevant volume range begins at an enrollment level of 500.

Graph B, Figure 5, illustrates faculty cost-volume behavior for an institution whose relevant volume range reaches below the enrollment level where a minimum faculty cost would be incurred. A conclusion that can be drawn from this graph is that at any enrollment level below 200, additional volume could be handled with no variable faculty costs until that level is reached. Above the enrollment level of 200, total faculty costs per student would be determined by the specified student-faculty ratio and the average faculty salary.

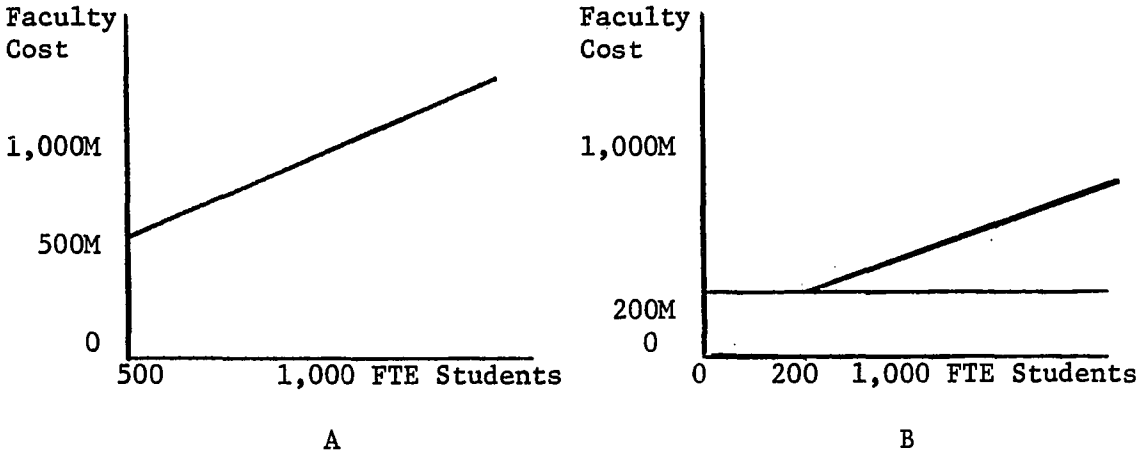

Fig. 5.--Graphs of faculty cost behavior under different relevant volume range assumptions.

Analysis of Historical Records

If there are no "engineering specifications," such as the student-faculty ratio or the mix of faculty rank from which average faculty salaries can be computed, then it will be necessary to lump faculty salaries in with other nonfixed expenses that do not lend themselves to the engineering approach for determination of total variable cost per unit. The variable cost-volume relationship of such costs must then be determined by statistical analysis of historical data.

The statistical analysis of historical costs is accomplished by making several observations of volume levels for specific periods of time and total cost levels for the same periods. These observations can be combined to arrive at conclusions regarding the relationship of costs and volume by means of a scatter chart or by more sophisticated least squares techniques. The desired end result is an average cost per unit for the units in which the volume level is measured and an indication of the amounts of fixed costs contained in the remaining expenses.

The appropriate period of time for which the individual observations are made is a first consideration. A discussion at the beginning of this section, page 176, of some of the unique features of applying cost-volume analysis to colleges, suggested that the academic year might be the most appropriate period for each observation of volume and costs. It appears that generally a full year would be required to have an observation contain a complete production cycle for which a clear cut-off of the expenses related to a given amount of production could be obtained. The possibility of obtaining satisfactory observations of both volume and expenses for shorter periods such as quarters, trimesters, or semesters is not precluded but it is doubtful that most private liberal arts colleges' accounting records would warrant such segmentation. Many respondents to the accounting practices questionnaire, which is discussed in Chapter IV, indicated that accrual accounting entries were made only at fiscal year-end. It was also noted at the beginning of this section, that if the length of each observation period is a year, the number of observations that can be made are few because of the possibility of factors other than volume affecting total costs over a long period of time. The farther back in history that each observation occurs, the more difficult will be the adjustment of the historical costs for the effects of other factors.

Adjustments for Non-Volume Factors

After fixed costs have been separated from total costs, leaving those that are considered to be variable with volume to some degree, the first obvious step in adjusting those costs to remove the effects

of nonvolume factors is to attempt to determine if the factors assumed to be constant actually were. The effect of changes in prices may be broken down into salary and nonsalary changes. It would not be difficult for most private liberal arts colleges to schedule every employee, or job, and isolate actual salary increases or decreases from one observation period to the next. This would account for price changes in the single most significant variable expense. In the absence of specific knowledge about the price behavior of other significant variable expenses during the observation periods, overall adjustments based on an appropriate price index may be applied to the remaining variable expenses.

The effect on variable costs of any significant change in methods would likely be reflected in salaries, also. Comparisons of the student-teacher ratio between observation periods would indicate changes in instruction methods and would also provide the data necessary for the adjustment of costs to make all of the periods comparable. Also, within the instructional cost area, it would be necessary to determine whether changes in methods had affected other costs such as audiovisual costs or supplies costs. Such changes would be indicated by the amounts of individual expenses and would require confirmation by inquiry of the appropriate personnel. The entire organization other than the instructional function would require review to determine whether there had been changes in methods that increased or decreased variable costs from one period to the next during the periods included in the analysis. Such changes that resulted in additional fixed costs

would have been accounted for in the determination of fixed costs and should not be considered again. An example of a change in methods is the addition of a student placement office. A review of annual reports of the institution and minutes of meetings, as well as inquiries, might yield information regarding changes in methods that make adjustments of variable costs necessary in order for all periods to be comparable.

The constant "mix" assumption should also be challenged before the variable costs of the periods are considered to be comparable. Reference to enrollment by academic area during each period would be the primary method of determining whether there was a possibility that such changes had affected variable costs. Significant changes in proportions of enrollment by academic area would only effect variable costs if there were differences in the unit costs of teaching each full-time-equivalent student among the academic areas. For example, if an academic department whose costs per full-time-equivalent student were known to be 20 per cent higher than the overall average costs of the institution doubled its enrollment, while the enrollment in all other areas remained the same, adjustments to the variable costs would be required to remove the effects of this change in "mix" on comparability between the periods. It appears unlikely that the combination of a significant disproportionate growth of one academic area and significant disproportionate unit costs in that area would occur in a private liberal arts college.

Finally, individual costs should be compared from period to period to detect any random fluctuations that can be attributed to

nonrecurrent causes. If a nonrecurring event was of such a far-reaching nature as to affect many costs of one or more periods significantly, such as the disruption of an entire school year by a major fire or some similar event, the entire period should be eliminated as an observation to be used in deriving normal cost relationships. If isolated expenses are affected by the nonrecurring event, appropriate adjustments can be made to eliminate its effect. It is conceivable that an adjustment to historical costs would be required to eliminate past inefficiencies in order for the resulting unit-cost amounts to be useful as a standard for the future.

The adjustments arrived at after the analysis described in the preceding paragraphs should be applied in such a manner as to place all of the periods reviewed on the basis of the most current circumstances as opposed to adjusting the costs of each succeeding period to eliminate the effects of the changes that occurred in that period. This is so because the relationship of costs and volume that is finally arrived at is intended for use in gauging current operations or forecasting operations. In fact, adjusted historical variable cost amounts may require further adjustment for expected changes in nonvolume factors that will be in affect during the forecasted period.

Variable Costs Per Unit

In the case where an institution's relevant volume range is above the level where additional enrollment could be accommodated with the "organizational fixed" faculty, and all faculty costs are included in variable costs in the analysis of historical costs, a single

per-unit variable cost amount may be derived from the use of a scatter chart or a least squares computation. As mentioned previously, it may be desirable to omit faculty salaries from the historical variable cost analysis and combine "engineered" faculty costs per unit with the historical costs per unit of all other variable costs.

If the relevant volume range reaches below the enrollment level where the "organizational fixed" faculty could accommodate additional enrollment, and all faculty costs are excluded from variable costs, a per-unit variable cost may be derived for the remaining costs. This per-unit cost is applicable to all enrollment levels in the relevant volume range. In addition, the "engineered" faculty costs per unit become applicable at the enrollment level where the "organizational fixed" faculty could no longer accommodate additional enrollment. These circumstances suggest a kinked variable cost curve with the kink occurring at the enrollment level where faculty in addition to that considered to be fixed is required. This is illustrated in Figure 6, assuming that the enrollment level at which nonfixed faculty costs will be incurred is 200.

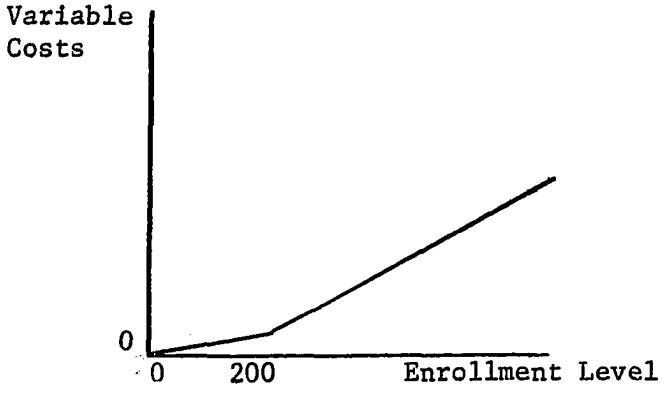

Fig. 6.--Graph of educational institution variable cost curve

This treatment of the variable cost curve is an exception to the straight-line assumption of most cost-volume-profit literature.[5] It is deemed to be warranted in the case of private liberal arts colleges because of the possibility that many such colleges operate in the volume range that includes the kink, and because faculty costs are significant enough in relation to total variable costs that they warrant separate consideration. There is a significant possibility that variable unit-cost figures that did not take these circumstances into consideration would be misleading.

Control of Variable Costs

In a manufacturing organization, a significant part of variable costs is often for direct materials which will vary upward or downward, automatically, with variations in volume. Another significant variable cost, direct labor, may vary almost automatically because of the nature of the work and the terms of employment of most hourly paid employees. There is no direct counterpart, with respect to this automatic variability, to either of these variable costs in educational institutions; consequently, definite plans and positive action are required in order that variable costs may be made to vary when enrollment levels decline. It may not be possible to force faculty costs to decline in the same period that a decline in enrollment levels takes place because of annual contracts which are consummated before the enrollment level for the year to which they apply is known. It may be desirable to take

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[5] Ibid., p. 16.

this downward "stickiness" into consideration if the variable cost relationship is being used for planning purposes. On the other hand, if the variable cost relationship is being used for control purposes, it may be desirable to retain an "engineered" variable cost function in order to show the effect of the downward "stickiness." In either case, it is desirable to have faculty costs expressed as a relationship, separate from other variable costs, so that they may be given the individual consideration that their relative size warrants.

Semi-Variable Costs

Semivariable costs do not appear to present a significant problem when cost relationships for the college as a whole are considered. The approach that has been taken to identifying fixed organizational costs accounts for the semivariable nature of administrative organizational costs by isolating the fixed elements. Although the addition of one faculty member may cause a significant lump in the cost curve of that department, if it were considered individually, it is not nearly so significant when related to total costs of the college. Another indivisible production factor that is sometimes significant in an industrial organization is the addition of indirect labor required when an additional work shift is added. The extension of the academic production day does not give rise to a similar step-up in total costs.

Revenue-Volume Relationship

There are two problem areas in the revenue-volume relationship of business firms which sell tangible products that are not significant

for private liberal arts colleges. The first of these is that a change in mix of the products sold may change the expected total revenue of the firm at a given level of activity. Colleges normally have a single selling price for their output even though the mix of the output may vary between academic departments. The second problem area in projecting revenues to be associated with each activity level for firms dealing in tangible products is that the sales volume will not reflect the production activity level in periods when the inventory is increasing or decreasing. In the absence of these problems the private liberal arts college can more accurately associate total revenues from tuition and fees with given activity levels.

A unique aspect of many educational institutions' revenues is the presence of fixed revenue from endowment income and/or gift income. Revenues from these sources may vary to some extent from year to year but not necessarily in any relationship to volume levels. They are fixed in the sense that their amounts are reasonably accurately predicted in advance without regard to volume level. Total revenues, under these circumstances, may be graphed as shown in Figure 7. A difference between average and marginal revenues results from this total revenue behavior.

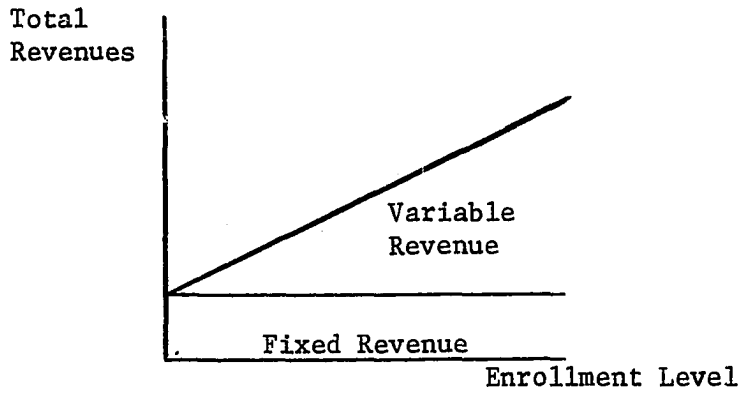

Fig. 7.--Graph of educational institution revenue curve

Uses of Cost-Volume-Profit Analysis in Private Liberal Arts Colleges

Break-Even Analysis

The classic use of cost-volume-profit analysis, as it was developed by commercial enterprises, is for determination of the level of activity at which total revenues are equal to total costs. This concept has particular significance for nonprofit institutions, such as most colleges, whose long-run financial goal is to break even. A familiar method of displaying the relationships of cost and revenue with volume is by use of the break-even chart.

Break-Even Charts

A conventional break-even chart for the typical commercial enterprise is shown in Figure 8, Chart A. A similar chart for a private liberal arts college, based upon the relationships of costs and revenues with volume that were discussed in the preceding paragraphs, is shown in Chart B of Figure 8.

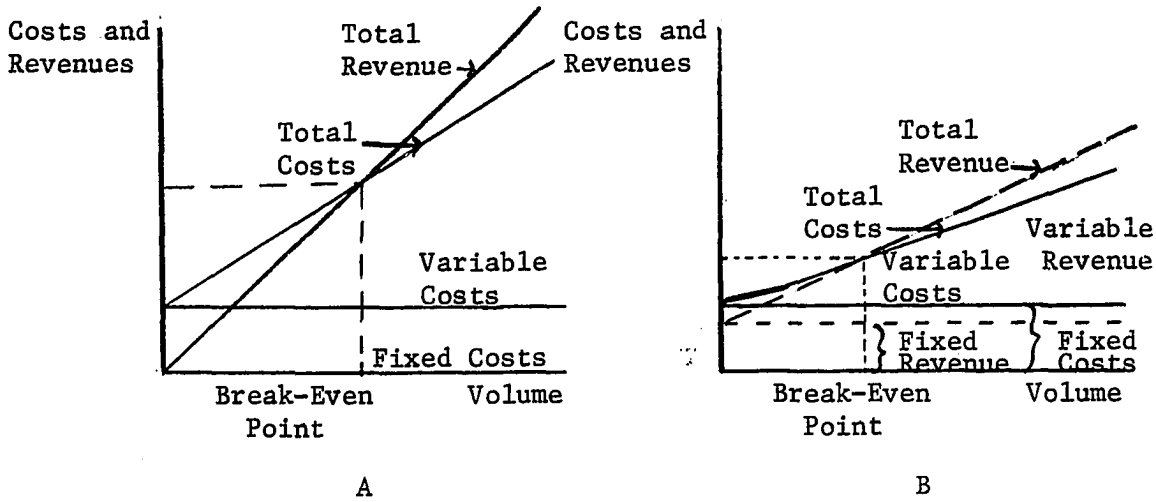

Fig. 8.--Break-even charts of typical commercial enterprise and educational institution.

Two unique circumstances, relevant to many colleges, are reflected in chart B of Figure 8. The first is that the relevant range of volume for a college may include an enrollment level that is less than that which could be accommodated by the faculty that is considered to be necessary to provide the minimum capacity. The effect of this circumstance is to cause variable expense per unit to be less at enrollment levels under that which can be accommodated by the "fixed faculty" than they would be at higher enrollment levels. Thus, the variable cost line and the total cost line have kinks at the level where faculty is required in addition to that considered to be fixed. This implies that until an enrollment level is reached that fully utilizes the capacity of the fixed faculty, unit costs of increased enrollment, or marginal costs, will be less than after that level is reached. Depending upon the individual institution's policies with respect to the programs that it considers necessary, the level of enrollment where this occurs could be relatively high.

The second of the circumstances reflected in Figure 8, Chart B, that is unique to colleges, is the presence of fixed income as well as variable income. Endowment income, gift income, and church support are possible sources of fixed income for private liberal arts colleges. The different possible combinations of fixed income and fixed expenses present different pictures of results of operations at various enrollment levels. Figure 9 contains charts depicting these possibilities.

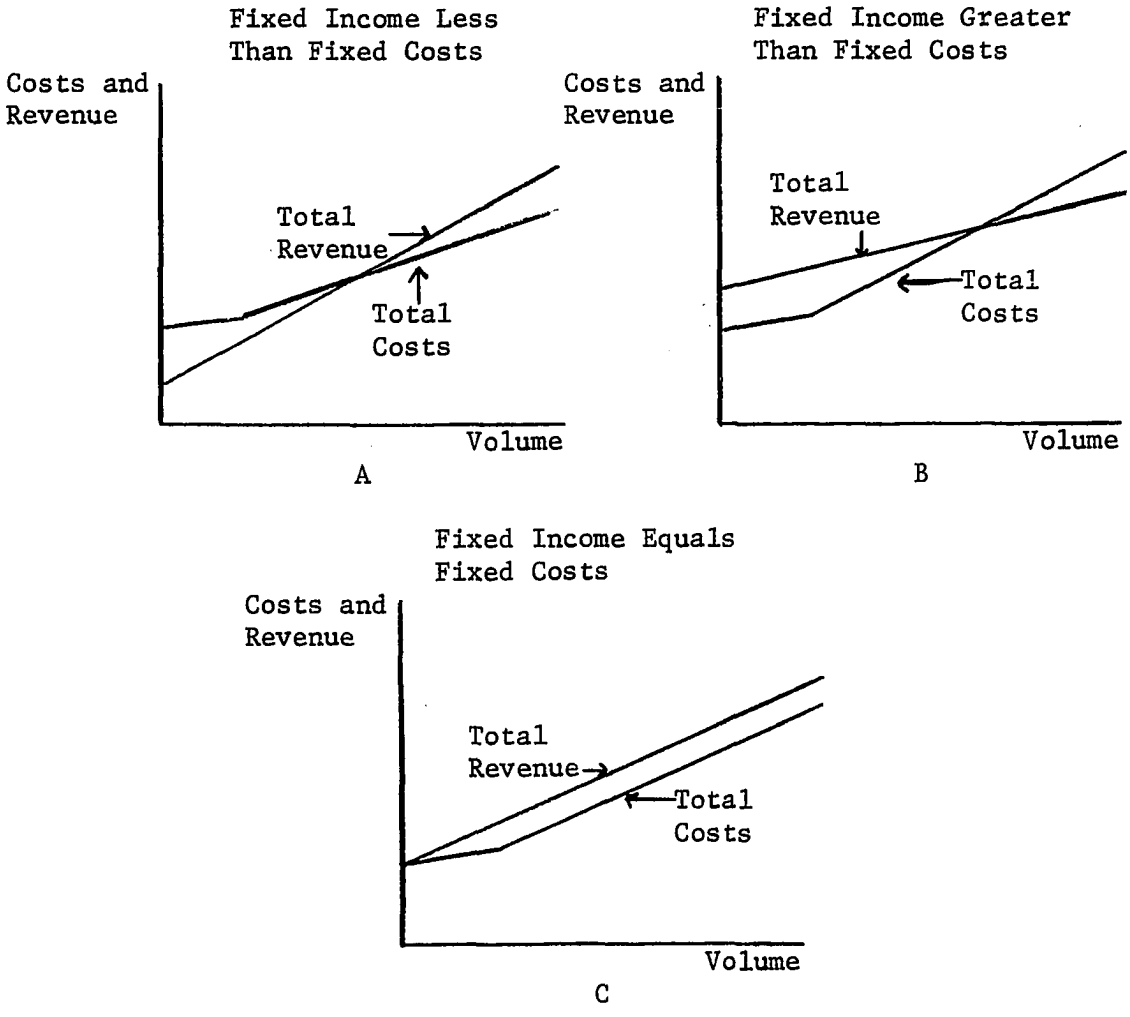

Fig. 9.--Graphs of educational institution costs and revenues under different assumptions regarding relationships of fixed costs and fixed revenues.

Chart A, Figure 9, presents a conventional relationship where, even though some fixed income exists, it is less than fixed expense. Under these circumstances, it is necessary that variable income per unit exceeds variable expense per unit in order for a break-even point to exist. Chart B, Figure 9, pictures fixed income exceeding fixed expenses, which makes operating with variable income per unit less than variable expense per unit possible within a limited range of enrollment. Beyond this range a loss is incurred. A college in these circumstances would definitely have a maximum enrollment level unless tuition and fee rates were adjusted to equal variable costs per unit. Chart C, Figure 9, shows fixed revenue equal to fixed expense and variable revenue per unit equal to variable income per unit. Only the kink in the total cost curve keeps total revenue and total cost from being equal at all enrollment levels under these circumstances. If variable income per unit exceeds variable expense per unit when fixed income is equal to or greater than fixed expense, a continually increasing excess of revenues over expenses exists.

Equally as important as the break-even point in this type of analysis is the amount of the difference between total revenues and total expenses at all volume levels within the relevant range. The rate at which this difference grows as indicated by the rate of divergence of the total cost line and the total revenue line, in Figure 9, Chart B, will indicate the significance of enrollment variations to administrators. Knowing these circumstances, the administrators may be encouraged to take extra precautions to insure that unfavorable

enrollment variations do not occur and, on a long-run basis, they may be encouraged to attempt to alter the cost and income relationships to reduce the effect of enrollment variations on the difference between total revenues and total expenses.

General Algebraic Relationships

The break-even chart is useful for showing cost-volume-profit relationships under specific circumstances; however, if it is desired to see what affect certain changes in the variables underlying total cost and revenue behavior would have on these relationships it is necessary to construct a new chart. Algebraic expressions of the relationships lend themselves to manipulation for purposes of determining the affect of changes in certain variables.

The general cost relationships may be stated as follows:

FC = total fixed costs

VC = total variable costs

a = variable costs per full-time-equivalent student, excluding faculty costs

a_1 = variable faculty costs per full-time-equivalent student

E = full-time-equivalent enrollment

TC = total costs

$TC = FC + VC$

However, two total cost relationships exist if the relevant volume range of the institution includes the minimum capacity enrollment level:

(1) $TC = FC + aE$ at enrollment levels below minimum capacity, and

(2) $TC = FC + aE + a_1E$ at enrollment levels above minimum capacity.

The generalized revenue relationships may be described:

FI = total fixed income

VI = total variable income

b = variable income per full-time-equivalent student

TI = total income

TI = FI + VI, or

(3) $TI = FI + bE$

Finding the enrollment level where total revenue and total costs would be equal, under given assumptions about the cost and revenue functions, requires solving two equations because of the variable faculty cost relationship to volume which becomes effective at the enrollment level where the "fixed faculty" can no longer meet the needs. To find whether a break-even point exists at less than the minimum capacity level of enrollment:

$$FI + bE = FC + aE$$

(4) $$E = \frac{FC - FI}{b - a}$$

If the enrollment level arrived at by this equation is higher than the minimum capacity, it is irrelevant because variable faculty costs must be considered in a solution involving that enrollment level. The second total cost equation, (2), would be appropriate and the break-even equation may be restated in terms of the required enrollment level, as follows:

$$FI + bE = FC + aE + a_1E$$

(5) $$E = \frac{FC - FI}{b - a - a_1}$$

It is possible that a break-even point exists at both a level under the minimum capacity and a level above the minimum capacity. This circumstance is illustrated in Figure 10.

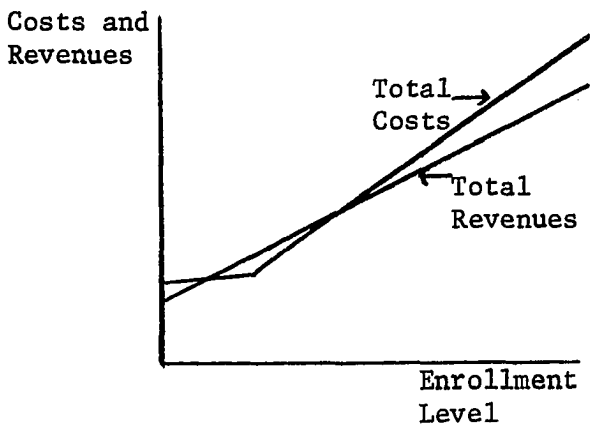

Fig. 10.--Break-even chart of educational institution with two break-even points

Many institutions are not able to influence the enrollment level significantly by administrative action. In such cases it may be more useful to accept an expected enrollment level as given and determine what changes in cost or revenue factors would be required to obtain the desired results. Assuming that the expected enrollment level is above the minimum capacity, the variable faculty cost factor must be considered and:

$$FI + bE = FC + aE + a_1E$$

Solving for a tuition rate that would be required with all other factors given:

$$bE = FC - FI + E(a + a_1), \text{ and}$$

$$(6) \qquad b = \frac{FC - FI + E(a + a_1)}{E}$$

Any of the variables in the break-even formula may be similarly isolated to determine what change would be required in each to accomplish break-even, assuming all of the other factors can be estimated.

A form of sensitivity analysis is another useful approach. An answer to the question, "How much would the break-even enrollment level be changed if fixed costs were reduced or increased by a stipulated amount?," may be approximated by changing the fixed cost variable and again solving the break-even equation. The same approach could be taken to determine the affect on any other variable of a change in one or more of the given variables.

The break-even equation may be further generalized by inserting, in place of the single variable faculty cost factor, the two variables which determine that factor as follows:

AFS = weighted average faculty salary

N = the student factor in the student-faculty ratio

(7) $\frac{AFS}{N} = a_1$ = variable faculty cost per full-time-equivalent student

The insertion of this variable into the break-even equation will allow the equation to be used to measure the sensitivity of other variables to changes in either average faculty salaries, the student-faculty ratio, or both.

In a circumstance where the administration feels that total revenues cannot be further increased by increasing the enrollment level or the rate of tuition and fees, it may be appropriate to solve for either the average faculty salary that may be paid at the existing

student-faculty ratio or the student-faculty ratio that must be attained if the average faculty salary is to be maintained.

$$bE + FI = FC + aE + \frac{AFS}{N}E$$

$$(8) \qquad AFS = \frac{N(bE + FI - FC - aE)}{E}$$

$$(9) \qquad N = \frac{AFS(E)}{bE + FI - FC - aE}$$

An important determination for an institution that expects growth in enrollment, and is planning additional capacity to accommodate the growth, is the enrollment level that will be required for total revenues to equal total expenses when the additional fixed costs associated with the additional capacity are incurred. The solution of equation (5), with the amount of fixed costs expected at the new capacity substituted therein, yields the required enrollment level.

Operating Leverage

Implicit in the cost relationships used in break-even analysis is the element of declining fixed costs per full-time-equivalent student as enrollment levels increase. When enrollment reaches a level where a decision must be made whether to continue existing policies regarding utilization of facilities and expand physical plant, or attempt to increase the capacity of existing facilities by changing policies, a knowledge of this relationship is beneficial. A new break-even enrollment level, taking into consideration the new fixed costs may be computed. The vulnerability of the high fixed cost organization to declines in volume level can be demonstrated by adapting the break-even

equation to show results of operations at an enrollment level less than the new break-even volume, with fixed costs stated at the level expected if the expansion is carried out.

(10) Results of Operations = $FI + bE - \left[FC + E(a + a_1)\right]$

The final decision would be based upon subjective evaluations of the detrimental effects of increasing the utilization of existing facilities and the probability of obtaining and maintaining the enrollment level required to break even with the new facilities.

Closely related to the problems inherent in incurring additional fixed costs for additional physical capacity are the problems inherent in incurring additional fixed costs to add either academic or administrative programs. Their effect upon the break-even volume level and the increased vulnerability of an institution to declines in volume level, due to increased operating leverage, must be considered in the same manner as physical capacity additions.

Budgeting and Cost-Volume-Profit Analysis

Cost-volume-profit analysis provides a significant amount of information that is useful in the objective preparation of the annual budget. The literature indicates, however, that many college budgets are not prepared on an objective basis but rather on a basis of the prior year's budget with adjustments which reflect the relative influence or vociferousness of individual departmental or functional managers.

Both budgeting and cost-volume analysis are tied directly to the volume variable of an organization. The research findings

discussed in Chapter IV, indicate that only 39.7 per cent of the private liberal arts colleges identify fixed and variable expenses and that 82.2 per cent of these use knowledge of their fixed and variable costs to forecast expenditures. Since most budgets are based upon the expected activity level and the activity level of educational institutions can usually be projected with reasonable accuracy, it follows that knowledge of cost-volume relationships should improve the objectivity and accuracy with which their budgets are prepared.

Flexible Budgeting

The concept of flexible budgeting procedures appears to be especially useful to colleges because of the possibility of deriving a single unit of measure of the activity level of the college as a whole and for individual departments. The flexible budget would be especially useful to the administration in guiding attention to costs that should be less than budgeted amounts when the activity level is less than the level budgeted. Another reason for the usefulness of the flexible budget in colleges is that the volume level for the year is reasonably well established at the beginning of the school year. When the activity level for the year is thus established, there is reasonable certainty that it will not change during the current year, whereas in most commercial organizations the prospect of a decline in the activity level being temporary exists. College administrators can invoke the necessary controls to bring costs within an alternative lower level budget, whereas the commercial organization administrator may be

hesitant because of the possibility of the activity level returning to that which was expected.

The classification of fixed costs between those that are committed, and largely uncontrollable in an annual period, and those that are fixed by policy, allows flexible budgeting procedures to be applicable to the latter type. It may not be desirable to consider these costs to be flexible within a normal volume range but the possibility should be recognized that some fractional volume level of that which is expected would make the organizational costs, considered to be fixed at normal volume levels, intolerable.

Long-Range Financial Planning and Cost-Volume-Profit Analysis

Tickton directed attention to the need for and a method of long-range financial planning in his book in 1961.[6] Since that time there has been a considerable amount of literature devoted to this subject as indicated in Chapter III. The research findings in Chapter IV indicate that 47.5 per cent of the private liberal arts colleges represented in that survey make financial plans for five years and 32.4 per cent for ten.

One of the reasons for the lack of long-range planning is no doubt the difficulty involved in foreseeing future circumstances and policies clearly enough to place credence in financial data associated with them. Tickton's method of long-range financial planning up to

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[6]Tickton, Needed: A Ten Year College Budget, op. cit.

ten years involved tedious detailing of future circumstances and policies and deriving associated forecasts of income and expenses. To make forecasts under alternative assumptions required virtually starting from scratch, since no general relationships of costs and other factors were developed. No indication was given as to how the amounts of expenditures other than faculty salaries should be estimated for each future year.

The information and relationships developed in cost-volume-profit analysis provide a basis for an objective forecast of income and expenditures. Even more important is the ease with which the relationships can be adjusted for alternative assumptions about future circumstances and policies. The flexibility provided by the general relationships of costs, revenues, and volume provides the capability of making several long-range forecasts until the combination of policies and expected circumstances that make the institution most viable is determined.

Planning Changes in Capacity

The physical plant capacity determinations required by cost-volume-profit analysis, when coupled with the enrollment projection, provide a basis for forecasting when additional fixed costs for additional physical plant capacity is required. Knowledge of the behavior of fixed organizational costs and fixed policy costs which must be considered in cost-volume-profit analysis will give insights into the increases in costs in future years that are associated with new

programs or policies. In general, the analysis that is required to isolate fixed costs for cost-volume-profit analysis purposes will serve as a basis for forecasting costs that are not associated with the activity level of the institution.

Future Volume Levels

It was indicated at the beginning of this chapter, that of the many causal factors underlying cost and revenue levels, the volume level is one of the most significant. For this reason cost-volume-profit analysis was developed. The variable cost-volume relationship determined in cost-volume-profit analysis may serve as the cornerstone on which long-range forecasting can be based. Other factors that are known to influence this relationship such as prices, mix, and methods can be provided for as modifications to the basic variable cost-volume relationship in accordance with alternative assumptions about the future.

A final factor that makes the relationship derived from cost-volume-profit analysis useful in long-range planning is the relative accuracy with which future enrollment levels can be projected. Even those schools that have not developed good enrollment projection mechanics would not be likely to be any more successful at projecting other factors to which future costs and revenues can be related.

Planning Operating Leverage and Marginal Cost-Marginal Revenue Relationships

Long-range financial plans which separate projected fixed and variable costs are more useful than those which do not, even if it can

be shown that they are not more accurate. Projections of fixed cost levels under a specific set of assumptions allows administrators to foresee the degree of operating leverage that will result and the resulting affect on the results of operations when the enrollment level deviates from the expected level. Since no costs are fixed in the long-run, an unfavorable fixed cost level might be avoided if projections of certain assumptions indicate that possibility.

The variable cost per student, or other unit of measure, that is determined from cost-volume-profit analysis, and that is suggested for forecasting variable costs, is useful for comparison with variable income per unit. Long-range planning of tuition and fees (variable income) should benefit from knowledge of variable costs.

Model Building

The cost-volume-profit relationships provide a beginning point for more sophisticated model-building. As factors, other than enrollment levels, that effect certain costs are isolated, appropriate modifications can be made to the basic cost-volume-profit relationships to allow for additional variables. The area of study referred to as activity cost analysis, which is discussed in Chapter III, deals with the accumulation of data which may result in measures of activity, other than enrollment level or student credit hours, being used for indicators of the level of activity of certain departments or functional areas. As more variables are provided for in a model and the possibility of interaction between the variables occurs, the need for

more sophisticated mathematical equations and solutions by the use of computers is indicated.

Other Uses

The cost and revenue relationships developed in cost-volume-profit analysis are useful in day-to-day decisions that require knowledge of marginal or incremental costs and revenues, as well as in the major managerial accounting procedures of annual budgeting and long-range financial planning. For example, a decision regarding the offering of continuing education courses, in addition to the normal undergraduate program, requires knowledge of the potential incremental costs. Even though administrators generally recognize the existence of fixed costs in making this type of decision, an actual analysis of cost relationships is required before their effects can be explicitly incorporated into the criteria on which the decision is based. Other decisions, such as granting additional scholarships or offering one or more additional courses in a specific term, may rest in part upon the expected incremental costs that will be incurred.

The most valuable use of cost-volume-profit analysis in private liberal arts colleges may well be its educational value in displaying to administrators and faculty the effects of different combinations of fixed and variable costs at various levels of enrollment. The break-even chart that may be derived from such analysis lends itself to understanding, at least conceptually, by those who are unskilled in quantitative methods. A tool or device which contributes to the understanding of an organization's financial planning and circumstances

contributes much to the attainment of the common goals of those who make up the organization.

This chapter reviewed the rudiments of cost-volume-profit analysis and the conceptual applicability of such analysis to private liberal arts colleges. In addition, a specific cost-volume-profit model was developed which takes into consideration some of the unique operational aspects of educational institutions. Finally the "by-products" of cost-volume-profit analysis, such as the provision of information that is useful in budgeting and long-range planning were reviewed.

Chapter VI contains the conclusions and recommendations resulting from this study.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Introduction

There has been a sharp increase in the college age population and in the desire and ability to attend college since World War II. These circumstances have focused attention on the financial problems associated with them, since, generally, the amounts paid by students are less than the average cost of providing their education. This is not necessarily true with respect to marginal costs for schools that are not operating at capacity; however, even these schools feel the effects, indirectly, through the increased demand for faculty in the marketplace.

Private colleges are particularly vulnerable to a cost-squeeze because, in the absence of state aid, they must charge students with proportionately more of the cost of education, which tends to reduce their enrollment.

The efficiency of management in higher education has been challenged by those both within and without the education field. Others have responded that the output of education cannot be related to its cost because of its intangible nature. An extension of this controversy is whether profit-making organization management techniques should be applied to educational institutions.

The objectives of this study were to determine for private liberal arts colleges:

1. the management accounting practices presently in use,

2. the presidents' felt needs for additional or improved financial data for control, planning, and decision making, and

3. the applicability and usefulness of cost-volume-profit analysis in meeting these needs.

Conclusions

Educational Institution Literature

College and university accounting literature has been weighted heavily toward the stewardship and uniformity aspects of accounting, to the detriment of attention to managerial accounting for control, planning, and decision-making. The separation of accounts by funds and the lack of recognition of depreciation expense are two distinguishing features of educational institution accounting.

Cost analysis has been debated in the literature for many years, but the current authoritative publication, College and University Business Administration, devotes no space to cost accounting, as such. A prevailing view has been that unit costs, if computed, would be used as the sole criteria for evaluating a program or activity, to the exclusion of all subjective considerations.

Educators have studied teaching loads, generally, but educational institution accountants have ignored the subject with respect to their effect on costs. Such "production" data is vital for

interpreting cost data. Similarly, physical plant capacity and its utilization have not been dealt with directly by educational institution accountants as a factor in cost analysis.

Some recent literature supports the need for classifying educational institution costs by activities as well as by responsibility centers as provided for in College and University Business Administration. The purpose is to determine costs in terms of activities or programs so that they may be evaluated in the context of their contributions toward institutional goals.

Although there has been some recognition of the difference in behavior of variable and nonvariable costs, cost-volume-profit analysis has not been pursued in educational institution literature.

The literature indicates that budgeting procedures are in widespread use but that their use is primarily that of balancing revenues and expenditures rather than planning, coordinating, and communicating financial matters.

Long-range financial planning has received considerable emphasis in the last ten years, but its ultimate usefulness appears to hinge upon the development of models which provide the flexibility of planning under several alternative assumptions regarding future circumstances and events.

Private Liberal Arts College Accounting Practices

The survey conducted among private liberal arts colleges in the course of this study indicated that there are "generally accepted educational institution accounting principles." The degree to which

respondents indicate that they refer to College and University Business Administration bears out this statement. Although depreciation practices and the use of fund accounting are the primary procedures described therein that have the stature of principles, there are other recommendations such as the chart of accounts, which also have widespread acceptance. This indicates that this publication would be an excellent vehicle for acquainting the educational accounting field with managerial accounting techniques as well as general accounting matters. As presently constituted, it provides little guidance in such techniques.

Annual budgeting is practiced widely in private liberal arts colleges. Two factors tend to bear out the conclusions of some writers that budgeting practices are primarily a device for balancing revenues and expenses: first, few colleges prepare monthly budgets to underlie the annual budget; second, the use of objective formulas to aid in budgeting is minimal. College presidents tended to bear out these conclusions by giving "better methods for preparing the annual budget" a relatively inferior priority among managerial accounting items while at the same time a significant number of them still ranked it as their first preference, indicating a lack of satisfaction with the procedures in use.

Unit-cost accounting and cost analysis, in general, are not practiced extensively by private liberal arts colleges, reflecting the mixed opinions that are contained in educational institution literature. College presidents indicated their feelings of relative need in this

area by ranking only long-range planning ahead of the cost analysis items in their preferences for selected financial data.

Studies of physical plant capacity and utilization are not widespread in private liberal arts colleges. Although the literature contains a considerable amount of information in this area, it is not generally related to accounting procedures. The presidents of private liberal arts colleges expressed some preference for this kind of analysis by ranking it fifth of ten items of financial data.

A substantial majority of private liberal arts colleges are using objective means of projecting enrollment and making various types of enrollment analyses showing the sources of enrollment and trends within each source. Relatively few have researched the price elasticity of demand for their services. A substantial majority of these colleges also analyze the sources of gift and grant income. The presidents' ranking of the item relating to this type of analysis is consistent with these reported practices.

Private liberal arts colleges practicing long-range planning are in the minority. This may be partly attributed to the fact that this subject has become relatively prominent in the literature in the last ten years. Presidents of these colleges reflected either a lack of long-range planning activity or their desire for improvements in such planning by ranking this item first in a list of ten items of financial data improvements. The development of financial models has hardly begun in private liberal arts colleges. The key to satisfactory long-range planning hinges upon the continued development of such models.

Private liberal arts colleges have followed the trend indicated in educational institution literature by assigning institutional research responsibilities to the chief financial officer in a small per centage of instances. Since some of the types of studies usually made by offices of institutional research are in the area of managerial accounting, it may be concluded that accounting officers have failed to meet such needs.

Although there are differences in the degree to which certain procedures are practiced among enrollment level classes and the classes which are based on affluence of the schools, there is no clear-cut overall pattern in the responses to the accounting practices questionnaire which indicates that any class excels or lags far behind in the application of managerial accounting practices. The rankings of financial data preferences by private liberal arts college presidents likewise show no distinct differences among the schools when they are classified by enrollment level or by affluence.

Cost-Volume-Profit Analysis and Managerial Accounting in Private Liberal Arts Colleges

Cost-volume-profit analysis concepts have not been prominently discussed in educational institution literature. Several characteristics of educational institutions make them more susceptible to such analysis than many profit-making organizations. They are: relative ease of measuring the volume level, the relative lack of the production mix problem, relative constancy of production methods, relative constancy of product specifications, relative stability of prices of

factors, and the fact that volume levels are sustained long enough (a term or a school year) to establish more accurate relationships of many variable costs with volume.

Organizational fixed costs are unique in the instructional function because of minimum faculty requirements to offer courses necessary for accreditation, the presence of the academic specialist, and tenure agreements. The largest item of variable costs for many colleges, which is instruction, lends itself to being "engineered." The engineering specifiations which determine the rate of variable instruction costs are the planned mix of faculty rank, salary scales, and the planned student-faculty ratio. If the variable faculty cost rate is determined separately, as these factors suggest, then one variable cost factor (exclusive of faculty costs) is in effect up to the volume level where the "organizational fixed" faculty can no longer meet the needs, and a higher variable cost factor (including the engineered faculty costs) is in effect beyond that enrollment level. The result is a kinked variable cost curve with the kink occurring at the enrollment level where the "organizationally fixed" faculty is no longer sufficient.

Few variable costs of an educational institution will vary downward automatically, as in the case of raw material costs in a manufacturing firm, but rather must be controlled. It may not be possible to control variable faculty costs in the same period in which volume declines because of the use of annual contracts.

A significant amount of educational institution revenues, such as gifts and endowment income, is not directly related to the volume

level of operation and consequently, the fixed or variable nature of revenues, as well as expenditures, should be considered in cost-volume-profit analysis.

When the unique aspects of educational institution revenues and expenditures are taken into consideration, either graphic or algebraic break-even analysis should be useful to administrators in determining enrollment levels required to support the existing cost and revenue structures, or arriving at more favorable cost and revenue structures when enrollment level cannot be influenced.

The determination of fixed and variable costs which is necessary for cost-volume-profit analysis should be especially useful to educational institutions in making use of flexible budgeting techniques. The existence of a convenient unit of measure of the activity level of a college and the fact that the activity level is established for the period of a school year or at least a school term make the determination of the need for budget adjustment, under a flexible budget, more obvious than in the business enterprise that has multiple products and a rapidly fluctuating activity level.

The establishment of the variability of revenues and expenses for cost-volume-profit analysis is a beginning point for providing the flexibility that is needed in long-range financial planning to provide for alternative assumptions about future circumstances. The relative accuracy with which enrollment levels can be projected makes the relationships developed in cost-volume-profit analysis useful for long-range planning.

As sophistication is gained in isolating other variables which affect costs and revenues, through activity cost analysis, variables in addition to volume can be taken into consideration in developing more sophisticated financial models.

The most valuable use of cost-volume-profit analysis in private liberal arts colleges may well be as an educational device for displaying to administrators and faculty the effects of different combinations of fixed and variable costs and revenues at various levels of enrollment.

Recommendations

The following recommendations are made as the result of this study:

1. Educational accountants should study profit-making enterprise managerial accounting techniques and adopt those that will assist in measuring or planning for operational efficiency. They should not assume that such tools would harm the educational processes by being applied without regard to subjective factors, but rather that they can aid in making subjective determinations.

2. The education field should direct efforts toward research in managerial accounting techniques in a similar manner to that which resulted in the financial accounting techniques that are described in College and University Business Administration. Perhaps a broad-based committee similar to the one which authored that work, with the addition of representatives from the commercial accounting field, should

carry out this research. The degree of acceptance that has been given this volume suggests that it would be an excellent vehicle for conveying managerial accounting techniques to educational institution accountants.

3. College accountants should expand their analyses of costs as to their fixed or variable components and the uses of such cost data. Such analysis is useful in cost-volume-profit analysis, budgeting, determination of incremental costs, long-range planning, and cost control.

4. Activity cost analysis should be expanded for purposes of evaluating the cost of activities against their contribution to institutional goals and for isolating variables other than volume that affect costs. Such analysis can provide a data base from which more sophisticated models than those used in cost-volume-profit analysis can be developed.

5. Accounting officers of private liberal arts colleges should free themselves from day to day clerical duties and devote a significant proportion of their efforts to analyzing and interpreting accounting data for use by administrators in planning, controlling, and decision-making.

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APPENDIX A

QUESTIONNAIRE RESEARCH PROCEDURES

Selection of Population

In order for the research findings to be representative of a reasonably homogeneous group of private liberal arts colleges, the population was limited to senior colleges accredited by a regional accrediting association or professional agency. The American Council on Education's American Universities and Colleges, 10th edition, was used as a source for compiling a detailed listing.[1] All colleges included in this directory which are designated in the following manner are included in the population:

Level II--highest level of training offered is bachelor's and/or first professional degree.

Type: b--liberal arts and general.

c--liberal arts and general and terminal-occupational.

d--primarily teacher preparatory.

e--both liberal arts and general, and teacher preparatory.

f--liberal arts and general, terminal-occupational, and teacher preparatory.

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[1]American Council on Education, American Universities and Colleges, 10th ed., Washington, D. C.: American Council on Education, 1968, pp. 1720-1753.

j--liberal arts and general with one or two professional schools.

Control--all schools designated as being under private control as opposed to public control.

A tentative population of 459 colleges was obtained by selecting those that met the criteria described above. Of these, it was learned that eight had closed, combined with another college, or no longer met the population criteria; consequently, a final population of 451 was obtained.

Other Characteristics of Population

The following additional information was obtained for each college from the American Council on Education directory:

Nature of sponsorship--Protestant, Roman Catholic, and Other.

Per cent of applicants accepted for school year 1967-68.

Income from tuition and fees, 1966-67.

Total educational and general income, 1966-67.

Endowment assets, 1967.

Amount of physical plant, 1967.

In addition, the full-time and part-time enrollment of each college for the school year, 1968-69, was obtained from Opening Fall Enrollment in Higher Education, 1968, published by the U. S. Department of Health, Education, and Welfare.[2]

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[2]U. S. Department of Health, Education and Welfare, Opening Fall Enrollment in Higher Education, 1968, Washington, D. C.: Government Printing Office, 1969.

Each college was assigned to a geographic region in accordance with a regional classification of the 50 states that is used by the Department of Health, Education, and Welfare. These regions are New England, Mideast, Great Lakes, Plains, Southeast, Southwest, Rocky Mountain, and Far West.

Circularization Procedures

The Accounting Practices in Private Liberal Arts Colleges questionnaire and the Ranking of Financial Data Preferences form (both reproduced in Appendix C) were mailed to the president of each college with a cover letter (Appendix B) requesting him to complete the ranking form and the chief accounting officer to complete the questionnaire. This request was mailed with postage-paid return envelopes on November 10, 1969. A second request was made of those who had not responded on December 12, 1969. The cover letter for the second request is reproduced as Appendix D.

Representativeness of Responses

Usable responses to the accounting practices questionnaire were received from 284, or 63.0 per cent of the population, and usable responses to the ranking form were received from 272, or 60.3 per cent. Table 19 shows the population and the number of responses classified by geographic region, enrollment level, sponsorship, and affluence. The substantial per centage of responses to the population in each of the various classifications indicates that those colleges that responded were reasonably representative of the population.

TABLE 19

ANALYSIS OF QUESTIONNAIRE RESPONSES BY GEOGRAPHIC REGION, ENROLLMENT LEVEL, SPONSORSHIP, AND AFFLUENCE

	Accounting Practices Questionnaire			Ranking Form		
Geographic Region	No. in Population	No. of Responses	% Responding	No. in Population	No. of Responses	% Responding
New England	28	12	42.9	28	12	42.9
Mideast	81	44	54.3	81	43	53.1
Great Lakes	84	54	61.9	84	49	58.3
Plains	80	60	75.0	80	59	73.7
Southeast	122	74	60.7	122	70	57.4
Southwest	20	13	65.0	20	13	65.0
Rocky Mountain	8	4	50.0	8	4	50.0
Far West	28	23	82.1	28	22	78.6
Total	451	284	63.0	451	272	60.3
Enrollment Level						
0-249	16	6	37.5	16	6	37.5
250-499	48	26	54.2	48	25	52.1
500-749	105	66	62.9	105	62	59.0
750-999	123	82	66.7	123	78	63.4
1000-1499	95	64	67.4	95	62	65.3
1500-1999	43	28	65.1	43	27	62.8
2000 and over	21	12	57.1	21	12	57.1
Total	451	284	63.0	451	272	60.3
Sponsorship						
Protestant	241	154	63.9	241	143	59.3
Roman Catholic	138	90	65.2	138	91	65.9
Independent and other	72	40	55.6	72	38	52.8
Total	451	284	63.0	451	272	60.3
Affluence						
Most Affluent	116	68	58.6	116	61	52.6
Least Affluent	335	216	64.5	335	211	63.0
Total	451	284	63.0	451	272	60.3

Colleges meeting two of the following three criteria were classified as Most Affluent and all others were classified as Least Affluent:

1. Endowment assets per student exceed the simple average of endowment assets per student of all colleges in the population.

2. Per cent of applicants accepted is less than the simple average of the per cent accepted by all colleges in the population.

3. Per cent of income from tuition and fees to total educational and general income is less than the simple average of those per centages for all colleges in the population.

For purposes of classification of the colleges by enrollment level, one-half of the part-time enrollment was added to the full-time enrollment to arrive at the total enrollment level of each college.

APPENDIX B

COVER LETTER FOR FIRST REQUESTS FOR QUESTIONNAIRE RESPONSES

Oklahoma
Christian College

241

AREA CODE 405 478-1661 / OKLAHOMA CITY, OKLAHOMA 73111

DIVISION
OF BUSINESS

November 10, 1969

Dear :

I am making a study of managerial accounting practices in private liberal arts colleges. This study is unique in two ways. It includes only private liberal arts colleges and it is directed towards accounting practices which provide decision-making information to management.

Your help is needed. No time-consuming research is necessary to provide the information requested. Although the information is not of a confidential nature it will be treated confidentially. Your response will be of great benefit to me personally since this survey is a part of my doctoral dissertation research.

Would you do these two things, now, while they have your attention?

1. Complete the enclosed one-page form. Its purpose is to obtain the preferences of college presidents regarding financial information.

2. Ask your Business Officer to complete the simple yes-or-no-type-questionnaire regarding existing accounting practices.

If you indicate your desire on the forms that you return, I will be pleased to send you the summarized results of the survey.

I would appreciate very much having the responses by November 21, 1969. A postage-paid envelope is enclosed for your convenience in responding.

Respectfully yours,

Howard D. Leftwich
Assistant Professor of Business

jrl
Enclosures 2

APPENDIX C

QUESTIONNAIRE FORMS USED IN SURVEY

Return to:
H. D. Leftwich
Oklahoma Christian College
Route 1, Box 141
Oklahoma City, Okla. 73111

TO BE COMPLETED BY ACCOUNTING OFFICER

ACCOUNTING PRACTICES IN PRIVATE LIBERAL ARTS COLLEGES

Instructions

Please check either Yes or No after each question. Space is provided at the end of the questionnaire for any comments about specific questions or general comments about college and university accounting that you wish to make.

General Accounting:	Yes	No
1. Is the book *College and University Business Administration* regularly used as a reference for guidance in accounting matters?	___	___
2. Are accounting records maintained in balanced fund groups?	___	___
3. Are revenues from tuition and fees recorded when they become payable (accrual basis) rather than when collected?	___	___
4. Are expenditures recorded on an accrual basis?	___	___
5. Are restricted revenues recorded only as they are expended?	___	___
6. Is the chart of accounts suggested in *College and University Business Administration* substantially followed?	___	___
7. Are auxiliary funds income and expenditures recorded and reported separately from other current funds?	___	___

Budgeting:		
	___	___
1. Is an annual operating budget for all current funds adopted prior to the beginning of each fiscal year?	___	___
2. Is the annual operating budget broken down into monthly amounts in accordance with the expected actual income and expenditures?	___	___
3, Are reports prepared either monthly or quarterly comparing actual and budgeted income and expenditures?	___	___
4. Is the annual operating budget broken down by department, program, or activity in addition to break-down by object?	___	___
5. Are heads of budgetary units provided with statements of expenditures against their individual budgets as often as quarterly?	___	___
6. Are object break-downs made any farther than the three broad categories of Salaries and Wages, Supplies and Expenses, and Equipment?	___	___
7. Are formulas used in preparing the annual budget which take into consideration the expected:		
(a) faculty-student ratio?	___	___
(b) proportions of upper division and lower division enrollment?	___	___
(c) proportions of enrollment in each instructional department?	___	___
(d) non-teaching staff to teaching staff within the instructional function?	___	___

	Yes	No
(e) staff outside the instructional function to staff within the instructional function?		
8. Are cash budgets or cash flow projections prepared quarterly or oftener?		
9. A budgeting concept called Planning, Programming, Budgeting System, which has been used by the U. S. government, has recently been discussed for colleges and universities.		
(a) Has this concept been applied in your institution?		
(b) Is it being considered?		
Cost Analysis:		
1. Are unit costs (cost per full time equivalent student, student credit hour, or some other unit) computed annually for:		
(a) the college as a whole?		
(b) the instruction function?		
(c) any non-instructional departments?		
(d) academic divisions within the instruction function?		
(e) upper division and lower division instruction?		
(f) individual courses?		
2. If unit costs are computed, do they include prorated indirect costs (general overhead)?		
3. If instructional unit costs are computed, are they based on:		
(a) student credit hours?		
(b) some other unit? (Please describe_____)		
4. Are unit costs used for cost control through:		
(a) comparison with prior periods?		
(b) comparison between departments?		
(c) comparison with other institutions?		
5. Are unit costs used in:		
(a) preparing annual budgets?		
(b) long-range financial planning?		
6. Are marginal or incremental costs computed for:		
(a) potential changes in enrollment level?		
(b) potential additions or deletions of courses or programs?		
7. Some recent literature proposes defining and costing certain activities that cut across normal departmental lines, such as producing a degree that entails the efforts of several departments. Are any such activities defined and costed?		
8. Are prorations of indirect costs such as general administration made to:		
(a) the instruction function?		
(b) auxiliary enterprises?		
(c) other non-instructional activities?		
9. Has maximum capacity of physical plant been determined under present and/or alternative policies regarding hours and days that classes will be conducted?		
10. Have the effects on costs of alternative assumptions regarding faculty load been computed with regard to:		

Cost Analysis (cont'd):	Yes	No
(a) ratio of faculty to students?	—	—
(b) average credit hours taught per faculty member per semester (or other period)?	—	—
(c) non-instructional duties (research, etc.)?	—	—
Cost-Volume Analysis:		
1. Have expenditures been classified between those that are relatively fixed regardless of enrollment level and those that tend to vary with enrollment level?	—	—
2. If answer to 1 above is yes, are the results used to:		
(a) point up deviations in current expenditures from previous patterns?	—	—
(b) forecast expenditures under alternative future enrollment levels?	—	—
(c) plan expansion of programs or facilities by estimating the associated fixed costs?	—	—
3. Based upon separation of fixed and variable expenses, has break-even analysis under various enrollment level assumptions been used?	—	—
Plant and Depreciation:		
1. Are annual computations made of % of classroom space utilization under existing policies regarding days and hours that classes will be held?	—	—
2. Have studies been made of differences in costs between increasing utilization of existing plant versus construction of new facilities to accomodate specific enrollment increases?	—	—
3. Is depreciation expense recorded for:		
(a) general educational plant?	—	—
(b) auxiliary enterprise plant?	—	—
4. If depreciation expense is not recorded, is a provision for replacement recorded for:		
(a) general educational plant?	—	—
(b) auxiliary enterprise plant?	—	—
5. Are inventory records of movable equipment maintained *and* substantiated by physical inspection annually or oftener?	—	—
6. Are expenditures for movable equipment charged to current operating expenses?	—	—
Income:	—	—
1. Are formulas used for projecting enrollment (and consequently, tuition income)?	—	—
2. Are gift and grant income and Development Department expenses compared as a measure of performance of that department?	—	—
3. Are annual analyses of gift and grant income classifying sources *and* showing trends in each source prepared?	—	—
4. Are annual analyses of enrollment prepared showing:		
(a) sources of students and trends within each source?	—	—

Income (cont'd):	Yes	No
(b) academic level of students and trend within each level?	___	___
(c) academic area of study and trend within each area?	___	___
5. Have estimated effects upon total income from students of alternative tuition levels been researched?	___	___
Long-Range Planning:		
1. Are income and expenditure projections made for:		
(a) two years hence?	___	___
(b) three years hence?	___	___
(c) five years hence?	___	___
(d) ten years hence?	___	___
2. If answer to any part of 1 above is yes, are income projections broken down between tuition, gift and grants, etc. for the period:		
(a) two years hence?	___	___
(b) three years hence?	___	___
(c) five years hence?	___	___
(d) ten years hence?	___	___
3. For expenditures projected five years, are they:		
(a) broken down by department or activity?	___	___
(b) broken down by object farther than the three classifications, Salaries and Wages, Supplies and Expenses, and Equipment?	___	___
4. For expenditures projected ten years, are they:		
(a) broken down as in 3 (a) above?	___	___
(b) broken down as in 3 (b) above?	___	___
5. Are formulas used to relate projected expenditures to projected enrollment for:		
(a) instruction?	___	___
(b) non-instructional departments or activities?	___	___
6. Recent literature refers to financial models (a series of inter-related formulas) into which variables representing assumptions about future circumstances can be inserted in order to simulate future financial results.		
(a) Has a model been developed for your institution?	___	___
(b) Are there plans to develop a model?	___	___
7. Has the function of Institutional Research been assigned to an office or a person?	___	___
8. If answer to 7 is yes, is this function under the Business Manager or Chief Financial Officer?	___	___

GENERAL COMMENTS OR COMMENTS ABOUT SPECIFIC QUESTIONS:

_____

_____

_____

_____

_____

DO YOU WISH TO RECEIVE THE SUMMARIZED RESULTS OF THIS SURVEY? Yes_____ No_____

Name of Institution _____

Return to:
H. D. Leftwich
Oklahoma Christian College
Route 1, Box 141
Oklahoma City, Okla. 73111

TO BE COMPLETED BY PRESIDENT

RANKING OF FINANCIAL DATA PREFERENCES

Please rank all of the items by placing the number 1 opposite the most desirable item and continuing to the least desirable until each has been numbered. Your general comments on college accounting and your suggestions of additional items that should be included in this ranking list are solicited in the space provided.

NOTE: Please rank the items without regard to cost or difficulty of obtaining the data. A purely idealistic approach is desired.

Item	Rank
More frequent reports of actual income and expenditures compared to budgeted income and expenditures.	____
More detailed reports of expenditures with regard to departments, activities and object of expenditure.	____
More detailed analysis of sources of gift and grant income and trend in each source.	____
More analysis of cost per full time equivalent student (or some other unit).	____
More detailed and more reliable comparisons of costs with similar institutions.	____
More analysis of efficiency of utilization of physical plant and effects on costs of more efficiency.	____
More analysis of teaching loads and effects on costs of changes in class size or hours taught per teacher.	____
Better methods for preparing the annual budget.	____
Better methods for projecting long-range income and expenditures under alternative assumptions about future circumstances.	____
Better methods for determining effects on costs of adding or deleting a course, program, or activity.	____

GENERAL COMMENTS OR ADDITIONAL ITEMS THAT YOU FEEL SHOULD BE INCLUDED ABOVE:

_____

_____

_____

_____

_____

DO YOU WISH TO RECEIVE THE SUMMARIZED RESULTS OF THIS SURVEY?
Yes____ No____

Name of Institution_____

APPENDIX D

COVER LETTER FOR SECOND REQUESTS FOR QUESTIONNAIRE RESPONSES

Oklahoma
Christian College

AREA CODE 405 478-1661 / OKLAHOMA CITY, OKLAHOMA 73111

DIVISION
OF BUSINESS

December 12, 1969

Dear :

Over 200 private liberal arts colleges have responded to the managerial accounting practices survey that I am conducting. This response has been tremendously gratifying and indicates a widespread interest in this subject as well as a great spirit of cooperation.

If you have not completed the forms that were sent you a few weeks ago, would you take a few minutes now to complete the enclosed forms so that the results of the study may be further enriched by the inclusion of your school? The forms should be completed as follows:

1. The green ranking form is to be completed by the president and is designed to determine his preferences for financial data, taking present circumstances into consideration.

2. The buff form is to be completed by the Business Manager and is designed to determine certain aspects of managerial accounting practices presently in use.

The forms are not difficult to complete and the individual responses will be treated confidentially. The summarized results of the survey will be provided you if you indicate your desire on the completed forms. As I mentioned in the first request, your response will be of great benefit to me personally since this survey is a part of my doctoral dissertation research.

May I have your response by December 31, 1969? A postage-paid envelope is enclosed for your convenience.

Respectfully yours,

Howard D. Leftwich
Assistant Professor of Business

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