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Financial management for community colleges.

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FINANCIAL MANAGEMENT FOR COMMUNITY COLLEGES

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THE PROBLEM

STATEMENT OF THE PROBLEM

If institutions of higher learning are to achieve their maximum potential within the educational hierarchy, they require a comprehensive program of financial management. At present, few have one. This paper will address itself to the problem as exemplified by the decision making process for capital expenditures in public junior colleges. Specifically, the inquiry will be directed at the following questions.

> Can the concepts and techniques presently utilized by corporate and governmental financial management be adapted to capital expenditure decisions in the public junior colleges?
>
> Can cost-benefit and econometric analyses of the financial implications of a capital project be utilized to present the relative benefits of the competing alternatives?

Can these analyses of capital expenditures sharpen the decision making process of the educational administrator and assist him in selecting those capital items which most closely meet the future requirement of the institution?

Of equal importance, can these concepts and techniques be presented in a format easily understood not only by the administrator and his staff, but also by the governing legislature or trustees so that they become useful tools and not esoteric administrative status symbols?

ANALYSIS OF THE PROBLEM

During its entire history the American society has placed increasing emphasis on education. Though the trend has been the most dramatic since World War II, its roots lay in a broad movement discerned more than one hundred and thirty years ago by Alexis de Tocqueville, who observed that in the United States, the many would demand what in other lands was reserved for the few. The movement was formed and is sustained by the general public, not by governmental or authoritarian design. The demand for education has been generated at the lowest level of public pressure and forced upwards. Yet it is ironic that, of all the major

public functions in America, education alone received no mention in the Constitution; particularly since it is rapidly becoming a dominate feature of our culture.

Though authorities differ on the scope and thrust of education in the future, they all agree that it will increase not only in absolute, but in relative importance and size. Partially as a result of this, and possibly the cause of it, a growing role in the educational hierarchy has been assumed by the public junior colleges. Today they represent the most rapidly expanding segment of higher education and there are numerous indications that the trend will continue into the foreseeable future.

In building a comprehensive educational system, administrators have tended to concentrate on the academic functions and ignore the financial implications of their decisions. Particularly in higher education the emphasis in finance has been on obtaining more funds, not on more efficient and effective utilization of the funds presently available. In some ways this inexact financial management could be tolerated in the past. As long as higher education absorbed only a small part of the national resources and looked to the private sector of the economy to supply its funds, there was no pressing need for reform. Expansion was limited and gradual and the errors of intuitive decision making could readily be absorbed by the static financial bulk of the college without threatening its existence or causing a major disruption of the academic scheme.

As a whole, educational administrators have been slow to

realize that the situation has changed; and that the traditional scope of financial management can no longer meet the problems of today, much less those looming in the future. They have been reluctant to adopt techniques and concepts that are better suited to deal with the urgent problems now confronting them.

The explosive growth, not only in the number of students enrolled, but in the number of institutions engaged in collegiate level education has imposed new demands on academic administrations. From 1950 to 1965, enrollment in colleges and universities almost tripled from 2,281,298 to 5,920,864[1] and the number of colleges and universities rose from 1,851 in 1950[2] to 2,230 in 1965.[3] (Over one third of the new institutions were junior colleges.)

Expenditures for operating funds and capital investment increased from 2.678 billion dollars in 1950 to 8.870 billion in 1962.[4] Preliminary estimates indicate that the total in 1966 exceeded 10.000 billion dollars.[5] These statistics give

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[1] Digest of Educational Statistics, 1966 (Washington: U.S. Department of Health, Education and Welfare, 1966), p. 64.

[2] U.S. Department of Commerce and Bureau of the Census, Statistical Abstract of the United States: 1966, prepared under the direction of Edwin D. Goldfield (Washington: U.S. Government Printing Office, 1966), Table 144, p. 107.

[3] Digest of Educational Statistics, op. cit., p. 78.

[4] Ibid., p. 88.

[5] Government funds for all purposes were 5,863 million. Statistical Abstract, op. cit., Table 576, p. 420.

realize that the situation has changed and also the considerable range of financial requirements who is larger than the problems of Europe, even Jews living locally in the Tribunal. They have been educated in great Republicans and Democrats that may further added to deal with the United Products and conditions.

The economists agreed, not only in the economy of stupendous material, but in the problem of transportation because in maintaining Jewish education was learned from Germany on realistic administration. From 1930 to 1941, millions in military and universities almost bribed from 2,221,241 to 3,070,000[1] and the number of military and universities from 1,132 in 1932 to 2,170 in 1939. (Over one third of the new institutions were public colleges.)

Appropriations for secondary-level and higher education from 2,171 million marks in 1930 to 5,070 million in 1933.[2] Preliminary estimates indicate that the total in 1941 exceeded 10,000 million marks.[3] Their activities also

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[1] Journal of Economics Principles, Inc. (Independent) 2.2: Department of Health, Education and Welfare. 1940, p. 20.

[2] U.S. Department of Commerce and Bureau of the Census, Statistical Abstract of the United States (1941), Washington Gotter and Statistics of Jobs in Principal Cities (1940) Department Publication 1940, p. 127.

[3] Journal of Economics Principles. op. cit., p. 20.

[4] Ibid., p. 21.

[5] Commerce Trade for all purposes were 2,212 million. Statistical Abstract, op. cit., Table 128, p. 80.

some indication of the growth occuring today, but they only hint at the educational explosion of the future.

All colleges are caught up in this dynamic growth pattern and the changing roles played by the private and public sectors of our society; but it is at the public junior college that these forces are most concentrated, most evident and most critical. The newest member of the academic hierarchy, unsure of its future role, beset by conflicting pressures, and undergoing the greatest rate of growth, the junior college has the most to benefit from comprehensive financial management and yet often appears to be the least prepared to accept it.

As startling as this documentation of growth may be, the major problem is embodied in the entry of government into the field of higher education. In 1948 less than half the students were enrolled in publicly supported colleges; by 1964 the total exceeded sixty five percent.[1] The increase of government support has not been restricted to state and local levels. The federal government has rapidly expanded its share. From 1960 to 1965 its contributions in direct grants and loans alone increased from 1.000 billion dollars to 2.456 billion[2] and this reflects only what is euphemistically termed the "take off" phase of federal assistance. Though the full impact of this move will not be apparent for some time,

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[1]Kenneth A. Simon, Digest of Educational Statistics, 1964, U.S. Department of Health, Education and Welfare (Washington: U.S. Government Printing Office, 1964), Table 51, p. 74.

[2]Statistical Abstract, op. cit., Table 202, p. 143.

it is already beginning to have an influence on the decision making process at the higher levels of educational administration and this influence will permeate down to and spread through the lowest levels. Without commenting on the philosophical issues or the political considerations involved, it is reasonable to expect that as the federal government assumes a greater proportion of the financial support of higher education it will demand a more exact justification and management of those funds. There is ample evidence of this trend in the administration of other federal programs such as highways, hospitals and welfare. There is no reason to believe that the academic community will be exempted. This does not imply that the federal government will necessarily dictate policy; only that it will pre-condition funds on the adoption of a standard system of financial management.[1] Even if funds are not granted directly to the recipient institution and are allocated to the state for distribution, there will be a steady increase in pressure on the state to conform to the federal financial standards and this will be transmitted down to the individual colleges and universities. The same reaction will probably occur with the secondary supporting funds, such as student assistance and scholarships.

The drive for advanced financial management will probably not be initiated by the state governments themselves, even

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[1]As an example, the final section of Public Law 89-329 (Commonly referred to as the Higher Education Act of 1965) is titled: "Federal Control of Education Prohibited", and indicates the intent, if not the practice, of federal assistance. See: U.S. Statutes At Large, Public Law 89-329, Stat. 1219, P. 52.

though they are at present the heaviest contributors to higher education. First, the state governing boards and legislatures are much more subject to direct, immediate political pressure to maintain the status quo in the colleges; and secondly, most state governments are not much further advanced than the schools in the field of exact financial analysis. The federal government is far more sophisticated than most other levels of government in financial management.[1]

When modern systems are instituted by the state governments--as inevitably they must be--the college that is best prepared to operate under the new concepts will be the one that is in a commanding position to receive supporting governmental funds. It may be considered raw opportunism, but no administrator can ignore the federal and state funds; and the better he understands the techniques involved the better are his chances of obtaining them. It will become a basic fact of life if they are to survive and have a viable academic program.

And their survival is not guaranteed. From 1960 to 1964 this was brought home to thirteen junior colleges in the United States. Six simply closed their doors. Two more were merged with stronger institutions and the others were unable[2]

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[1] Planning-Programming-Budgeting has been used by the Department of Defense for almost ten years and in 1966 was made mandatory for all federal departments (See: Bureau of the Budget Bulletin 66-3 and supplement) but is only beginning to win acceptance by other levels of government.

[2] Edmund J. Gleazer, Jr., (ed.), American Junior Colleges (6th ed.; Washington: American Council on Education, 1964), p. 538.

to maintain their accreditation. Final data has not been compiled for the intervening period, but it appears that the total will be even higher. These failures were during a time of unprecedented prosperity for academic institutions. Though poor financial management may not have been the only cause, inefficiencies in academic administration are of major proportions. Writing in 1958 Seymour Harris estimated that if the simple economies he proposed were adopted, over two billion dollars could be saved by 1970 with no deterioration in the academic standards; and these funds reallocated to either improving the level of instruction or reducing the financial demands on the students and the taxpayers.[1]

Many colleges, and particularly the junior colleges, have been founded and have always operated in a climate of optimistic prosperity. Almost one third of the junior colleges operating today are less than twenty years old and have enjoyed a vigorous national economic environment for their entire existence. But should a retrenchment occur, even on a modest scale, with a reduction of disposable personal income, the colleges will come under pressure to lower costs from the supporting governmental agency and simultaneously from their student clientele. (This would be particularly true of state and local governments where Keynesian economics does not enjoy the favor found in the federal government.) The inefficiently managed college will find it difficult to economize without lowering

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[1]Seymour Harris, "Financing of Higher Education: Broad Issues", Financing Higher Education: 1960-1970, ed. Dexter M. Keezer (New York, McGraw-Hill Book Co., 1959), p. 37.

the quality of its instruction. As this is written, California is engaged in a bitter struggle over funds for higher education, the outcome of which may well jeopardize the academic standards, if not the existence, of the more marginally managed colleges. Though poor financial management appears to be critical in the public junior colleges, other institutions are exposed to the same dangers. The University of Pittsburgh surrendered its independent status, not because of academic deficiencies, but through inadequate financial management. The University of Buffalo (New York) endured the same fate three years earlier in 1962. There is reason to believe that some public junior colleges exist today only by virtue of the apparently insatiable demand for their services and the abundance of supporting funds presently available. It is also reasonable to assume that at some future time the demand will become more discriminating and that a "shake out" and consolidation will occur. It will be a difficult moment for those colleges who have neglected to build a solid foundation of financial management, regardless of their academic prowess. This does not include those public junior colleges which were planned but because of poor financial management never opened.[1]

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[1]An examples of a college that was planned but failed to open is provided by one of the case studies. It will be discussed at greater length later in the paper.

PURPOSE OF THE STUDY

It is the purpose of this study to demonstrate that there are existent today techniques and concepts of financial management which are adaptable to the present and future capital expenditure problems of the public junior colleges. These concepts are derived from government and private business and have proven successful in solving similar problems within those segments of society. In themselves these concepts are not new. The application of them to educational administration is. While there have been some rudimentary efforts, they have been mostly confined to the field of program budgeting.[1] In actual practice these business concepts make use of relatively sophisticated tools of analysis but they are basically simple and easily understood by the average educational administrator.

Though this paper will deal primarily with the capital expenditure program, it is implicit that the same concepts are equally applicable to other areas of financial management within the junior colleges; and that there are other techniques available for capital expenditure decisions.

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[1]See: Sidney G. Tickton, Needed: A Ten Year College Budget (New York: The Fund For The Advancement Of Education, 1961), and: Hans H. Jenny, "Putting the 10 Year Budget in Practice", College and University Business, XXXVIII, No. 2 (February, 1965), p. 35-40.

SIGNIFICANCE OF THE STUDY

The entry of the federal government into the financial support of the junior colleges tends to obscure what would otherwise be the most significant aspect of the problem and this study. This aspect is based firmly in the puritan ethic and the diffusion of democratic ideals in the American society. Simply stated it is that the educational administrators in a democratic society have a moral obligation to provide a given level of education at the lowest possible cost to the citizens so that the maximum number may receive its benefits. Conversely, though it applies more to private institutions than to the public ones, the administrator should provide the best education possible at a given cost. Unlike the preceding points of the study which are practical and utilitarian, this one is founded on a moral obligation inherent in our culture. By itself it is ample justification for financial management in educational institutions.

Capital expenditures have a special significance as a point of inquiry, for it is at this point within the administrative function of any organization that the widest range of divergent disciplines must meet and come to an agreement. Capital expenditures represent the largest single items in the financial plan and they have implications that extend over the longest period of time. Once committed to concrete, the decision cannot be reversed and represents a continuing constraint on the future course of the college.

In a public junior college the educator must define the future goals and aspirations of his institution; the architect must confine his vision to practical parameters; and the fund supplying agency must set the constraints in resource allocation and give its imprimatur to the project. It is here that the public and political pressures will focus. It is a point in time when dreams and harsh reality must merge. Capital items are ideas and intangibles translated into brick and concrete; and what ever the decision, the results of it will be evident far into the future and will indelibly alter the character of the institution. The decision to build a stadium rather than a library, to cite an extreme example, will effect the entire college: students, faculty and administrators. A partially utilized laboratory stands as a mute memorial to inadequate or faulty planning no less than over crowded lecture halls.

It is to this decision making process that the financial manager must first apply his skills and techniques. It is here that all the significant elements must inexorably join into a common goal.

NEED FOR THE STUDY

The colleges and universities have always, and justifiably, held the role as leaders in new ideas, concepts and techniques. Thus it is ironic that there should be a need for a study such as this and even more ironic that it should be

initiated not by an educator, but by a member of the business community. The future emphasis on financial management is obvious; but as a whole not only have educational administrators not adopted the concepts and techniques available and successfully avoided serious inquiry into the subject, but have chosen to ignore those writers who have proposed new methods. And yet it is the educational community that initially developed most of these very techniques.

Past studies have separated into two distinct approaches. The majority have concentrated on improving present methods and tend to be of the "nuts and bolts" variety more applicable to accountants than to administrators and academic managers. The second group exhibits a much broader scope, but with a few notable exceptions, has not attempted to translate their concepts into meaningful techniques and thus suffer from being dismissed by the administrators as probably a good idea but not suitable to their particular college.

A study is needed that encompasses that area between these two to present the conceptual basis to the administrator but also translate it into a demonstration for a specific example without becoming entangled in superflous details. This study attempts to answer only one problem--capital expenditures. Many other similar studies are urgently needed to complete the picture. As one administrator said, "The college administrator needs a practical ten year financial guide."[1] This study answers but a small portion of the

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[1]Personal interview with John G. Caffrey, Director, Commission on Administrative Affairs, American Council on Education, Washington, D.C., January 18, 1967.

need for that guide.

ASSUMPTIONS

In an effort to simplify the demonstration of the concepts and techniques, several assumptions must be made. Since the discussion will be confined to publicly supported junior colleges, though no distinction will be made as to which level of governmental activity provides the funds, or if more than one, the relative share of each, it is implicit that there is some measure of legislative or administrative coordination and control over the local level finances. However, it is to be assumed that the planning for capital expenditures is conducted by the individual college and that the selection, justification, and recommendation of alternatives is a function of the local administration. It is also assumed that the junior college does not plan to transition into a four year institution. (In the period 1960 to 1964 thirty one junior colleges expanded into senior institutions[1] and there appears to be a small butcontinuing group who do so each year.) It must be assumed that the junior colbge will continue to grow and has not reached a mature and relatively static state; nor is it a "package" campus with all facilities completed during the initial construction.

One of the most basic of assumptions is that, for the

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[1]Edmund J. Gleason, American Junior Colleges 6th ed., loc.cit.

foreseeable future, the senior educational administrators will be drawn from the academic community and not from the ranks of trained managers. This may or may not be a valid assumption. There is some controversy at present as to which discipline best equips a presidential level leader for his duties. There are indications that managerial skills may become predominate, particularly at state or district level administrations.[1] However, the design of this paper rests on the assumption that the senior administrator is only slightly knowledgeable in the semantics and concepts of the business community and that the financial manager, if any, is maintained in an advisory staff roll.

DELINEATIONS OF THE STUDY

All delinitations of the study are arbitrary and are imposed only to maintain the paper within parameters compatible with the time allotted.

Although equally valid for all institutions in the educational hierarchy, the actual demonstration of techniques will center on community orientated public junior colleges, for they are subject to the greatest pressures that complicate the implementation of a comprehensive system of financial management. Thus by selecting the type of institution that presents

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[1]Personal interview with Robert O. Berdahl, Director, Study of Statewide Systems of Higher Education, American Council on Education, Washington, D.C., January 20, 1967.

the most formidable obstacles, the validity of the concept should be proven for any college.

Though a program for planning and budgeting would normally encompass all facets of input and output for an objective, this discussion will be delimited to capital and items only. Again this represents the most difficult application of the techniques and the most critical element of the decision.

By far the most artificial constraint imposed is that the discussion will be limited to manual solutions to the problem. The flow of information and the computations required are computer compatible and the use of automated data systems would sharpen the distinction among alternatives, expand the range of information inputs and allow more discrimination in decision making. In actual application it would be almost mandatory that automated equipment be utilized. However, as it is a basic tenet of this study that the concepts and techniques should not require detailed specific knowledge, they are presented in a manner which should be easily understood by all educational administrators.

OPERATIONAL DEFINITIONS

The semantics of junior colleges, like the institutions themselves, have not yet been stabilized. There is no shortage of definitions, only of agreement on them. It is not the purpose of this paper to present a comprehensive glossary

of terms, but definition of some of the more important concepts seems to be advisable.

The term "junior college" appears to have been coined just prior to the turn of the century. At least seven institutions have laid claim to the honor of being the first to be so designated.[1] To add to the confusion, the junior colleges embrace a heterogeneous group of philosophies, orientations and conceptual foundations; thus any definition will be more notable for its inexactitude and omissions than for its clarity. However, there are two factors which separate the junior colleges from all but a few educational institutions. A junior college offers academic courses of instruction of a post high school level, the normal completion of which requires two academic years; and it does not grant bachelor degrees or their equivalent, though it may bestow "associate" degrees or other certificates of completion.

Junior colleges are divided into two broad catagories: privately supported and publicly supported. These correspond to the dichotomy evident in traditional colleges and universities; though the term is basically a misnomer. Private colleges may receive a portion of their support from public funds and conversely, there is some private support of public institutions. To illustrate, privately controlled colleges received 24.7 percent of their income from governmental sources in the

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[1] Ralph R. Fields, The Community College Movement (New York: The McGraw-Hill Book Co., 1962), p. 15.

academic year 1961-62;[1] and though the percentage of private support for public schools was smaller, it still amounted to ninety eight million dollars in the same year.[2]

The degree of centralized control of public junior colleges varies greatly from state to state.[3] Some are amalgamated into a state wide system, others are only loosely federated and are predominately controlled by local school districts. A third variety exists as an extension center of a state university. All of these patterns may coexist within a single state.[4] The trend, however, is for greater centralization of financial control with educational control remaining at the local level.[5] Normally there is no attempt to differentiate between the types of controls when defining "junior college".

Within any category of control there is a further division in the conceptual basis of the junior college which could be defined as "post high school" and "college equivalent".

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[1]Kenneth A. Simon, op. cit., Table 79, p. 97.

[2]Ibid.

[3]Berdahl interview, loc. cit. An in depth study of statewide coordination of higher education is being undertaken by the American Council on Education. Publication is expected early in 1968.

[4]Edmund J. Gleazer, American Junior Colleges 6th ed., op. cit., p. 53-480.

[5]Arthur Milton Jensen, "An Investigation of the Administration of Junior College Districts with Multi-Campuses", (unpublished Ph.D. dissertation, Department of Education, University of California), p. 128.

Historically the junior college was considered an extension of high school. Many of them today not only operate under that philosophy, but are included under the same administration as the local elementary and secondary schools and in some cases even share facilities. However, in the 1920's a different concept emerged. This placed the junior colleges in a position equal to, but parallel with the traditional college and university. California was the first state to give legislative notice to this development.[1] It was patterned after the gymnasium and the lycée of Europe, offering general courses in preparation for the more specialized studies in the universities. This trend has continued though by no means is it universally accepted, even within a given junior college.

A characteristic of junior colleges that is increasingly being associated with its definition is its orientation toward student geography. Traditionally a student was required to travel to the institution of higher learning and to reside within its confines. The junior college was the precursor of an opposite orientation: it brought the educational facilities to the student. The location of the possible student population is a universal criteria for the establishment of a community junior college. The required total population varies widely from 5,000 in Iowa, North Dakota and South Carolina to 100,000 in Ohio.[2] This community orientation is

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[1]Fields, op. cit., p. 29. California has been a consistent leader in the field of junior colleges.

[2]Edmund J. Gleazer, American Junior Colleges 6th ed., op.cit., p. 37.

based on the popular demand for higher education. Centralized colleges and universities were becoming unwieldy with the growing number of students, thus some geographic scattering was necessary. In addition, the community college, by eliminating the need for student housing and its attendant ancillary functions, could offer education at a lower cost. Though seldom mentioned by contemporary writers, there appears to be an additional factor in the community orientated college. It has been axiomatic in the American society that education was a local responsibility. As long as higher education was available to only a few members of that society there was little necessity for local control. But as the number of students increased and more citizens became directly involved in higher education, the pressure to bring the institutions into close proximity and under the control of the local population underwent a proportional intensification. This reinforced the already strong justification for a community orientated college. The community junior college has become so pervasive that for practical purposes the term is synonymous with public junior college[1] and will be used interchangeably in this study.

There are two other terms which are often used in any discussion of junior colleges and a short definition is appropos. Transfer courses (or students) refers to the academic subjects of a junior college which parallel traditional insti-

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[1]See page 62 .

tutions and as the term implies, are designed to prepare the student for transfer to a senior college. Terminal courses are those that can be completed within two years and are normally associated with specific technical skills.

In the discussion to follow, any terms of a technical nature, either in the business or educational fields, will be defined in context with their application.

METHODOLOGY

This study was designed and is presented in three separate, though overlapping, phases: background and trends, the creation of a composite community college model, and the demonstration of advanced financial management techniques on the model college.

The first phase was concerned with research into the history, present status, and future projections of the community college movement and an analysis of the collected statistical data of higher education in general and the community college in particular. In the research, inquiry was made into financial management at all levels of higher education. In addition, interviews were held with educational administrators and researchers to determine the current thrust of activity in this area and the alternatives to traditional financial management which have been proposed or attempted. This portion of the study was more notable for what it did not accomplish than for what it did; for, as a whole, with a few--

and occasionally perceptive--exceptions, the bulk of the current writing on the subject was devoted to detailed accounting procedures, suggested methods to obtain more funds, or dismisses financial management in a college as a pedestrian activity with which the academic administrator should not concern himself, or "which the wise administrator will delegate at the earliest possible moment".[1]

The statistical analysis was somewhat more productive. Data was gathered, as far as possible, from primary collecting sources; the three major ones of which are the United States Office of Education, the American Association of Junior Colleges and the American Council on Education. Only when data was unobtainable from the primary source and was considered significant to the study, was it extracted from secondary documents. The plethora of statistics proved to be a mixed blessing. Different statistical standards were often used by separate agencies collecting the same information; and the time span covered by the surveys varied widely. There were several instances where two or more agencies would conduct a survey utilizing the same data base and the same time frame and still come up with divergent totals. In order to insure compatibility of comparative data it was often required to utilize older figures, and to cover a shorter period of time, even though more current information over a longer period of years was available in one set. Occasionally data was utilized from two or more sources to

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[1]James W. Thornton Jr., The Community Junior College (New York: John Wiley and Sons Inc., 1960), p. 128.

compile a single table or chart if it could be positively determined that the same data base and standards had been used. Where the information was considered significant and the sources did not agree, all variations were given with, where possible, an indication of the relative reliability of each along with possible explanations of the disagreement. In all cases where statistics were used in this study, a strenuous effort has been made to indicate the source and to catalog any variances with alternative sources.

Another source of information was correspondence and interviews with regional administrators. This included an analysis of research reports and planning documents prepared for local use in connection with specific community colleges.

This first phase was devoted to establishing at what state of development the community college has reached and to give some projections of its future course.

The second phase of the study consisted of a detailed analysis of three community colleges representing progressive stages in the development of a single institution. They were selected from three different states to present some indication of the different methods and amounts of financial control being utilized among the fifty states.

Columbiana County (Ohio) Community College was planned, initially approved, but failed to be chartered for, among other reasons, incomplete financial programs. It is presently moribund. The Northern Virginia Community College has been approved and chartered, and is presently being constructed in Fairfax County. It began classes in 1965. Montgomery Junior

College (Maryland) is a mature community college which first opened in 1946. The Columbiana County College was to have been a relatively independent college only loosely federated with the state educational system; Virginia will be fully integrated into a state wide system; and the Maryland community college is governed by the local board of trustees which also serve the public schools of the county.

This analysis was made on the basis of a comprehensive review of the financial documents of the selected community colleges and interviews with their financial and administrative executives. Where appropriate, initial planning documents were reviewed to establish the progression of the financial plan.

In addition, federal and representative state financial legislation was reviewed to determine any patterns or characteristic constraints imposed by the legislatures on the financial management of community colleges.

This phase provided the information to create a composite community college as a demonstration model. This college was constructed within the general parameters of the majority of the states and in concurrence with present federal regulations. It reflected the financial management in the three case studies as well as additional research into the techniques and trends evident throughout the community college movement.

A third phase of the study was devoted to the application of advanced financial management techniques to the composite community college, comparing the decision making possible

under the traditional system with a system of comprehensive financial management. As an example of capital expenditures, the construction of additional class rooms was selected. The specific techniques utilized were program budgeting[1], critical path method for the sequencing of activities, present value discounting and return on investment. These techniques and concepts will be explained in detail as their application to community colleges is demonstrated. All are based on previous research and study conducted under the Navy Graduate Financial Management Program. Though they are only a few of the techniques available, they appear sufficient for the purposes envisioned.

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[1]Capital expenditures would normally constitute only an element of a sub-program; however, the concept is adequately demonstrated even with these limitations.

CHAPTER TWO

SURVEY OF RELATED LITERATURE

A survey of the related literature reveals that the bulk of it is only tangentially applicable to the subject addressed in this study. There is a great deal of writing on higher education and on the junior colleges, but it all tends to separate into two main catagories: statistics devoid of a critical analysis and analyses which often suffer from too much enthusiasm and not enough data to prove the case. A valid comparison would be that there are salesmen of junior colleges and accountants of junior colleges--each with their peculiar abilities and faults.

These two categories of information are available from four principal sources: publications of agencies of the federal government (and to a lesser degree state governments) particularly the Bureau of Census and the Office of Education in the Department of Health Education and Welfare; books and articles by educational administrators, the majority of which are in conjunction with the national educational associations and their in-house publications; the schools themselves in the form of reports, studies and letters representing the accumulated experience of the administrators; and the commercial business community.

Historical as well as projected statistics for every phase of public junior colleges are more than sufficient for a study such as this though they must be treated with a healthy academic suspicion. The Department of Education, through the U.S. Government Printing Office has relatively complete data. However, they utilize a unique data base which is at variance with the schools themselves. Information from the educational associations is also abundant though it is only realistic to assume that they have a point of view that is less than completely objective. This in no way suggests any duplicity, for their efforts are obviously honest. But they do have a parochial interest in the schools and with the confused conditions of the statistics it is relatively easy to support just about any hypothesis chosen.

Much of the published literature on traditional higher education either totally ignores the community college or includes it as a highly subservient addendum. Much of that published on community colleges tends to neglect the position of the schools within the entire educational hierarchy and the resulting interdependence of junior colleges with the rest of the system.

One book which avoids these pitfalls and is worthy of special notice is The Two Year College: A Social Synthesis, by Blocker, Plummer and Richardson,[1] all of whom are actively

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[1] Clyde E. Blocker, Robert H. Plummer, Richard C. Richardson, Jr., The Two Year College: A Social Synthesis (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1965).

employed in junior colleges. The basic premise of their analysis, which includes financial management in the broad sense, is well delineated in the preface and would serve well any author attempting to deal with the community colleges. In part, it is:

> The two-year college may still be regarded among dowager circles as the "enfant terrible" of American education, but there can be little question that as an institution it has arrived. Characteristic of any growing movement however, particularly in its early stages, is a sensitivity to criticism, an unwillingness to admit that present philosophies do not represent eternal verities. The two year college has seen its share of this point of view among the small band of pioneers who fostered and supported the institution in less affluent days.
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> . . . . . .
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> Change inevitably results in conflict between the defenders of the established order and those who see the need for new approaches to meet new problems. When the two year college, as an institution, was required to struggle for its existence, little time was available for healthy controversy within the ranks of the faithful. All effort was required to sustain the organism. No one today, however, can claim that the existence . . . is seriously threatened. . . . Those within the field will raise no important questions that will not eventually come to the attention of those without.[1]

Their book contains a critical and searching analysis of not only the role of the community college within society, but the role of the conflicting academic and financial demands within the school. While it is not known whether they so intended, few authors have so well articulated the central problem of the community college which demands sophisticated

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[1] Ibid., p. ix.

financial management for solution.

Another author, who at first glance appears to deal with a subject only peripherally germane to the community college and financial management, but who actually comes to grips with the fundamental problem, is Harold Dodds in his book, The Academic President--Educator or Caretaker?[1]. Although his conclusions relating to the role of financial management in a college are diametrically opposed to those offered in this paper, he has faced the problem squarely and has offered a penetrating analysis. His book is, in effect, a comprehensive guide for the college president in his role of coordinator and leader of the academic and administrative functions of any institution. He is perceptive and pragmatic writer who presents the dilemma often facing the chief educational administrator without resorting to polemics or deluging the reader with statistics. He draws on his many years as President of Yale for illustrations and yet keeps theanalysis on a level that is applicable to all colleges.

No review of authors concerned with the junior college movement would be complete without mention of Edmund J. Gleazer, Jr. A long-time proponent of junior colleges, prolific writer, active editor, collector of information and perennial administrator of college associations, he is the most widely known commentator of the subject. His range of

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[1] Harold W. Dodds, The Academic President--Educator or Caretaker? (New York; McGraw-Hill Book Co., 1962).

interests covers all aspects and he unquestionably is the most persistent representative of the movement. If for no other reason, he should be noted for providing statistical data on junior colleges which cover the longest period of time, with one or two well documented exceptions, utilizing the same assumptions and definitions for a data base.

Two authors who have recently published land mark books dealing with the subject of financial management in education have been Sidney G. Tickton and Harry Williams. Tickton in his book, Needed: A Ten Year College Budget[1] has made an eloquent call for the adoption by colleges of what has been a long established technique in business—long range budget planning. Other writers have taken up his theme and expanded on it. In at least one example, his ideas actually have been put into effect and the results analyzed.[2] Tickton represents a new force in contemporary writing and, if nothing else, has succeeded in creating an interest in long range financial management where little existed before.

In his small but definitive book Planning for Effective Resource Allocation in Universities, Williams has adopted the semantics and techniques of a concept widely used in the Department of Defense and one which is rapidly gaining favor in all levels of government.[3] (The reliance on DOD techniques is

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[1] See Sidney G. Tickton, loc. cit.

[2] See: Hans H. Jenny, loc. cit.

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

not coincidental--he was on loan to the American Council on Education from his position as Assistant Director for Economic Studies, Institute for Defense Analyses.)

While he confines the main point of his discussion to the budget process, he demonstrates the validity of the entire concept of advanced financial management and concludes that they are indeed applicable to educational institutions. Williams proposes an adoption of the program budget and carefully explains the use of a decision matrix to implement the planning necessary for that budget. Unfortunately his book was not published until late in 1966 and as yet the reaction of other writers is not known. But his book has the marks of becoming a required primer for all academic financial managers.

Much of the current writing is to be found in the "trade" journals of the educational administrators. Two of the most important are The Junior College Journal and College and University Business. The articles present many authors, points of view and degrees of detail. However they also represent a valuable commentary on the present progress of academic financial management and the relative sophistication in the application of advanced concepts and techniques.

Reports and studies prepared by foundations and institutions, including those of the federal government and, to a lesser degree, studies by private research corporations, represent another source of writing. Unfortunately they are scattered and do not enjoy wide circulation. In a few instances the authors have been reluctant to provide copies

to researchers for they can contain "sensitive" information.[1] Additionally, the private reports involve proprietary rights and the results and recommendations are seldom released to other than the contracting parties.

A source which initially appeared to be rewarding but which turned out to be disappointingly limited (at least for this study) was previous academic research. Dissertations, when available, proved to be either so highly localized that they represented a unique situation, or fell into the same two categories of the rest of the literature. However, any serious researcher would do well to consult the annotated bibliography Administration of Higher Education published by the Department of Health Education and Welfare[2] for some direction in what is available not only in academic research but in other publications.

If not immediately applicable, reprints of the appropriate federal laws are fundamental to any study in this area. While the syntax of the law itself might be confusing at first, there are publications available which "highlight" the pertinent features of the more important laws and which give an excellent presentation of the parameters of present

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[1]A case in point is two community colleges within thirty miles of each other, each suffering from almost identical problems. One allocated funds for an independent study which proposed a solution; but in spite of efforts by the other, the results were not revealed. Ironically, the funds for the study were provided by the federal government.

[2]Walter Crosby Eells and Ernest V. Hollis, Administration of Higher Education. An Annotated Bibliography (Washington: U.S. Government Printing Office, 1960).

funding and legal constraints.

Other than the individual authors listed earlier in this chapter, the most penetrating and objective literature on the subject comes from outside the academic community. The commercial businesses of the United States have recognized the impact of not only education, but financial management within education and have expressed a keen interest in developments. While some articles are superficial and resemble those of the popular press, there are at least two publications which have dealt in depth with the problems facing the colleges: Fortune and, to an even greater degree, The Wall Street Journal. The interest of these business publications in education is an indication of the tremendous amount of resources consumed by our educational system and the growth projected in the future. They represent, in our opinion, the very best in current writing on the subject, not only for their analyses of the present but for their comprehensive predictions for the future.

Higher education today is a thirty six billion dollar business in the United States. No segment of our society suffers a comparable dearth of literature on the management of resources.

CHAPTER THREE

THE ROLE OF FINANCIAL MANAGEMENT

The role of financial management in a college or university is the subject of heated controversy. The traditional view of absolute academic supremacy is presented by Dr. Harold W. Dodds, former president of Princeton University.

> The problems of a university president are more like those of the general manager of the Metropolitan Opera Company than of the president of the Metropolitan Life Insurance Company. Further, the office of the academic president differs from that of the chief executive of the usual business corporation in that the ultimate function of his institution——one might say its "end product"——is education rather than financial profit or the production of material goods. In this it is unique.[1]

There are those who disagree. The following comments are suggestive as well as typical.

> A college is more like a business than most administrators are willing to admit—partly because they overstress the differences, but also because they don't know what business administration is really like.[2]

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[1]Harold W. Dodds, op. cit., p. 13.

[2]John G. Caffrey and Charles J. Mosman, Computers on Campus (Santa Monica, Calif: Systems Development Corporation, to be published in their survey in May, 1967), quoting college administrators contacted.

> We [the college administrators] need more information than a business . . . Control and decision-making in academic administration is almost always *ad hoc*.[1]

> Administrators just aren't using enough of the sophisticated techniques of management.[2]

> . . . state and federal agencies keep demanding new kinds of data . . . We're not equipped to furnish the information.[3]

In our opinion Dr. Dodds has made an erroneous conclusion that different and products require different techniques. The selection of profits as the distinguishing element between business and education tends to make obscure the fact that, regardless of the objective or goal of the institution, the basic techniques for financial management are the same. The application might vary in different types of organizations but there is no dichotomy of concepts. Every creative organization operates under the same unvarying economic principles: resources are consumed to produce an output. Financial management is the methodology of insuring the maximum output for the resources consumed. In context with this discussion, profits are not just a goal of the business executive, but a visible indicator of the effectiveness and efficiency with which the organization is converting input into output. Profits, or lack of them, represent the difference in the value of the

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[1] *Ibid.*

[2] *Ibid.*, p. 70.

[3] *Ibid.*

resources consumed and the value of the goods and services produced. While the output of an educational institution is intangible and difficult to reduce to a common denominator of dollars for comparison with input, it is hardly unique. Far from it, for to deny the applicability of financial management in a non-profit organization whose output is an intangible, is to ignore the ubiquitous insistence on exact financial management of the largest non-profit organization in the world whose output is an intangible--the United States Federal government. If it is not to jeopardize its justification within our culture, a university or a college must contribute to society equal or greater resources than it consumes--the difference being nothing more than an intangible profit. To whom and in what form this "profit" is allocated is immaterial. Nor is the timing, for the benefits may accrue far in the future. While an intangible output is difficult to quantify, it is not impossible. Since the output of a college is presumably the increase in a student's knowledge, one suggestion has been comparative comprehensive examinations on entry and graduation.[1] (If the effectiveness of a single course was to be measured, the examinations could be given before and after the student undertook the subject. Undoubtedly this would create a storm of protest from the affected professors that would far surpass any controversy yet known to the academic community; and while it is completely unfeasible

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[1]Thorton, <u>op. cit.</u>, p. 124.

at present, it probably represents the most accurate measurement yet devised.)[1] There have been many suggestions to develop unit costs of education utilizing different standards such as hours of academic credit, hours of instruction per student, plus some that are based on complex formulas.[2] Even Dr. Dodds is forced to admit that not only is some academic cost accounting possible, but that "the time may not be far distant when many legislatures will demand that comparative cost analyses be made available to buttress requests for appropriations".[3] Though he distrusts the application of unit costs to teaching and research, he accurately indicates the future when he reports "increasing pressures from governmental agencies that unit costs be furnished to them comparable to what may be demanded of other spending units".[4]

At present the tools for measuring intangible outputs are crude and inexact. Even the most vigorous proponents of financial management will readily concede that. But it is foolhardy to disregard what is available in favor of no measures at all. If utilized with discretion the present methods will provide the administrator with invaluable assistance and these methods are constantly being refined and improved.

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[1]In addition it would be quite costly to administer.

[2]M.M. Chambers, Financing Higher Education (Washington: The Center for Applied Research in Education, Inc., 1963), p. 85.

[3]Dodds, op. cit., p. 174.

[4]Ibid.

In the example given by Dr. Dodds, the manager of the Metropolitan Opera Company does operate in the same economic environment as that of the insurance company and must apply the same concepts of financial management. If he would think otherwise, let him discard all constraints on costs (input) and let his admission price (value of output converted to dollars) rise accordingly. He will soon realize that he faces a marginal utility demand curve no less than the insurance company which disregards the impact of premium prices compared to policy coverage. Higher education in the United States faces an even more imperative requirement to operate efficiently. If, by ignoring financial management, the cost of education is such that it prevents students who are otherwise eligible from attending college, the academic administrator has failed in his service role to society.

As educational costs have risen in the past, the colleges have turned to governmental support, often in the mistaken assumption that somehow these funds did not represent a portion of the available economic resources. However, tax monies represent an alternative allocation of resources which could have been utilized to satisfy other needs. To the educator the choice between a greater amount of state support for his institution and a new road appears absurd—to the legislator appropriating the funds it is quite a different matter. To put it in a macroeconomic context, should hospitals not be built because educators chose to disregard methods that would enable them to maintain the present quality of education with

less consumption of resources? Or can higher education adopt those techniques so that both universities and hospitals may contribute to the needs of society?

In addition, whether it will admit it or not, the college of today must enter a competitive market not only for supporting funds, but for students--their ultimate clientele. They must compete with other institutions for students and offer a point on an indifference curve of trade-off between quality and cost that can attract sufficient enrollment to ensure their existence. Even more important, they must be able to offer higher education at a cost to the prospective student which allows him to make a rational decision to pursue college rather than immediately enter the labor market. To the student, higher education presents both a positive and negative cost. He must pay for tuition, books and fees regardless of how small a percentage of the total income of the college this represents; but of even greater magnitude, he must forfeit potential earnings of active employment.[1] The prospect of greatly increased earnings in the future may not be sufficient to offset the financial demands of today.[2] To some families, a college education for a son or a daughter represents a major financial sacrifice; to many it represents a goal that is completely beyond their resources. It is not enough to retreat

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[1]The effects of withholding the expanding numbers of college students from the active labor market would make an interesting economic study. To the best of my knowledge, none has been made.

[2]In 1964 the median income of a college graduate was $3,099 higher per year than a graduate of high school. Statistical Abstract, op. cit., Table 157, p. 115.

into the platitude of "scholarships and assistance for those who deserve them". It is patently obvious that the diversion of sufficient resources to ensure that all who "deserve" higher education actually receive sufficient assistance is beyond political feasibility for the immediate future and only a massive increase in taxes or shift in governmental activity could provide sufficient funds. Though the correlation of time periods is not exact, it is interesting to note that a 1965 survey of junior colleges indicated that only 4.3 percent of the students were from families with an annual income of less than $4,000;[1] yet in 1964 this income bracket accounted for 26.0 percent of the population.[2] The United States Congress has recognized the greater financial burden of higher education on low income families, though in a burst of congressional generosity it set the demarcation between direct and indirect assistance at an adjusted family income of $15,000.[3] The same survey reported approximately twenty five percent of the students (19.6 percent of the male; 25.5 percent of the female) enrolled were from families whose

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[1]Robert J. Panos, "Some Characteristics of Junior College Students", ACE Research Reports. I, No. 2, 1966 (Washington: Office of Research, American Council on Education, 1966), p. 3.

[2]Statistical Abstract, loc. cit.

[3]This appears to be the highest family income possible to be eligible for direct support. It is in the form of grants to the student to pay the interest on government guaranteed loans. See: Higher Education Act of 1965, op. cit., p. 22.

income was above this dividing point[1] while they comprised less than 0.2 percent of the total in the nation.[2] It is reasonable to assume that because of their lower tuition and required fees[3], the junior colleges would attract a greater proportion of students from the low income families and that the disparity would be even greater in other institutions. The absence of room and board at community colleges would widen the gap even more.

Thus it is apparent that colleges face a normal demand curve for students. Though the cost may not be the only factor, it is a major contributor to the inequality of family income as a determinate of collegiate enrollment.[4]

If the democratic ideal of higher education for all citizens is to be realized without requiring the allocation of a disproportionate amount of the national economic resources--tax or tuition monies--the academic administrator must make every effort to operate effectively and efficiently. There is no intention to be iconoclastic for there are many able educational administrators, but in many institutions it has been forgotten that the resources available to higher education

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[1] Ibnos, loc. cit.

[2] Statistical Abstract, loc. cit.

[3] Simon, op.cit., Table 82, p. 99. In 1962-63 the median tuition and required fees for all colleges and universities were $170 for public and $690 for private schools. Junior colleges were the lowest of any category with $133 for public and $502 for private schools.

[4] Another interesting economic study would be to determine the relative elasticity of the demand curve for higher education. There are indications that it is extremely elastic.

are finite, while the demands for it are infinite. The society that can most efficiently allocate its resources among competing needs, including education, is the one that will achieve maximum satisfaction.

The central hypothesis of this paper is that the techniques of modern financial management will greatly assist in the intelligent allocation of these resources within the academic segment of our society.

Some administrators have already reevaluated the traditional role of financial management and more and more are turning to advanced business techniques to achieve the maximum educational output from their available resources. As yet they are in a small minority. (Though their numbers are constantly growing.) These are the men who can see the commonality of principles between business and higher education and are not distracted by the differences in application.

It is one of the supreme paradoxes of our society that the academic community has provided the techniques and concepts that enable our businesses to operate at unprecedented efficiency and our government to effectively control staggering sums of money; and yet that same academic community is one of the last to implement their own ideas. It is as if college administrators never talk with their own professors of business administration.

The proponents of financial management in higher education have based their arguments on a variety of methods. Some have

emphasized planning;[1] others have focused on the budget process.[2] There have been few areas of financial management that have not had at least one champion. Unfortunately for all the champions, there has been a paucity of adherents. All the criticism of the traditional role of financial management were succinctly summed up by one observer as "There just is no sensible leadership in this area".[3]

Two of the most unique proposals have come from Dr. Millard Roberts, President of Parsons College, Fairfield, Iowa and Dr. J. Herbert Holloman, Assistant Secretary of Commerce for Science and Technology, United States Department of Commerce.

Parsons College represents an extreme example of the application of financial management in higher education. This highly controversial college has abandoned the non-profit axiom of higher education and requires a profit in its operations as an indication of efficiency and a guide to decision making. Their philosophy is based on "reduced curriculum, year round operations, team teaching and emphasis on subject matter without proliferation of other programs. Plus the application of cost accounting which is very uncommon

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[1]For one of the best and most recent see: Harry Williams, loc. cit.

[2]An excellent plan is given in: Tickton, loc. cit.

[3]Personal interview with John G. Caffrey, loc. cit.

in institutions.[1] In 1965 over five million dollars of profit was realized on an operating budget of 14.6 million without federal assistance![2] The surplus was invested in real estate and other income holdings to produce, what in effect is, a self generating endowment. Even though as an educational institution it escaped the majority of direct taxes, few major corporations in the United States can boast of pre-tax net income of thirty percent. It is patently beyond the capability of this author to evaluate the relative quality of education being offered by Parsons College, but implicitly in the balance sheet is an indication of the internal vantage plaguing similar institutions. By down-grading the excellence of their educational programs, any college can achieve some cost savings--but it is difficult to believe that a surplus of this magnitude can be reached by the dilution of academic standards alone.

Dr. Rollman proposes an even more radical departure from the non-profit basis. In answer to a question as to how the public market could provide more opportunities for higher education, he said:

> Let's suppose that a town is going to start a junior college. Instead of the town running the junior college and hiring teachers and so on, why not go to an appropriate industrial firm and say, 'You design the junior college, you hire the teachers, you learn how to do it, you work with the educators, you operate the junior college at a profit and, instead

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[1] Dr. Millard Robert, "Profit Making Colleges: How the Parsons Plan Operates", College and University Business, XL, No. 4 (April, 1966), p. 71.

[2] Ibid.

> of our putting money directly into the junior college, we will give the monies to the kids, who then can go there or elsewhere, depending on who can sell them on having the best education.' I don't see any reason why running a college should not be considered an appropriate function for private enterprise. Now, the idea will be new and, to many, shocking. . . But I fundamentally don't see why we can't go as far to operating part of the educational system at a profit. That's one of the new patterns of industry-government partnership I foresee in the coming decade.[1]

Contained in this suggestion are two major, and we feel presently valid, assumptions: colleges are comparable to businesses in operational concepts and private business now has techniques for providing education that are superior to those being utilized by the colleges. The business segment of our society has taken notice of Dr. Hollomon's suggestion. It was included as a major point in a forecast of the next decade by Fortune magazine.[2] Whether the operation of a college by business or the adoption of applicable business techniques by present colleges represents the most feasable solution to the problem is an arguable point; but Dr. Hollomon has given an indication of the caliber of innovation possible.

Another technique, the full impact of which has not yet become apparent to most academic administrators, is the introduction of automated data processing equipment--computers. Business and government have accepted the computer since it

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[1]J. Herbert Hollomon, "New Patterns of Industry-Government Partnership in the Coming Decade". An address delivered at the Conference on the Challenge of Technology, New York City, November 30, 1966.

[2]Max Ways, "The Road to 1977." Fortune, LXXV, No. 1 (January 1967), p. 196.

was first commercially available as an invaluable tool of financial management, and are constantly expanding the horizons of its application. Many now routinely rely on it to assist in management decision making, as well as processing clerical information. Unfortunately the academic community has been slower to adopt the computer. A comprehensive study of the use in colleges summarized the progress as: "Few colleges and universities have in fact been able to move as rapidly as most business and industry in using computers".[1] The report concluded that even those institutions that have installed computers have yet to recognize its capabilities, for "Few . . . are even now able to exploit all the resources of the 'second generation' of computers of yesterday, and by the time the new generation of computers has had its impact on higher education yet another generation--the computers of the 1970's--will begin to be available."[2]

The adoption of computers, however, may prove to be the initial point of break-through for the entire spectrum of advanced management techniques. As the pressure from government for precise financial management data becomes more urgent, the academic administrator will find that he must have quantified analyses to support his request for funds and only the computer is capable of producing the necessary information. Once he accepts the computer, he is caught in a double edged

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[1] Caffrey and Mossmann, op. cit., p. 23.

[2] Ibid.

conflict. The traditional concept of financial management will rapidly become obsolete, for by its inherent design a computer cannot operate in an atmosphere of intuitive decision making. It will demand that the information it receives and the functions it performs be sequential, logical, and completely rational. Initially the management information system will have to be overhauled to conform with the requirements of the computer; a process that will start at the lowest level and rapidly spread upward. This new system will force adjustments in the management structure itself. Quantification, analysis of alternatives, and systematic presentation of information will be increasingly important. Finally, the administrator will find that, if he is to function in the new management, he must abandon his historical intuitive techniques. The computer is a tool in the literal sense, a servant in the hands of the administrator. It is not creative, it initiates nothing, only reacting to the information and instructions that have been read into it. But it is a demanding servant, intolerant of inexact masters.

The totality of the impact of computers was well delineated by the dean of the faculty in one state university, who stated: "The computer is an important tool of thought, not just in doing hard work fast, but in forcing people to <u>state their problems clearly</u> and <u>think out</u> what they want to do. It extends a man's mind and gives him new insights in his field."[1]

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[1] <u>Ibid.</u>, p. 18. (Italics mine.)

Eighty to one hundred institutions acquire their first computer each year and by late 1966 about thirty percent of American colleges had installed a computer of some type.[1] However, installation and full utilization are not synonymous. The acceptance of computers as a tool of academic financial management is still in its infancy.

In the long run, the effect of the computer may well be the most comprehensive of all, even though their adoption is but a defensive reaction to governmental pressure.

While the Parsons plan, Dr. Hollomon's suggestions and the introduction of computers represent forces of sweeping change, some progress has been made in smaller, less dramatic areas. Though modest, the improvements at least have been concrete. Ohio Northern University, among others, has contracted with private investors to build dormitories.[2] They may be on college owned property or in close proximity to the campus. The college either leases the buildings or they are privately operated under college regulations and standards. This system releases capital funds for other purposes and is nothing more than an academic adaptation of what is a common practice in private business. (The builder lease-back arrangement is widely used in office and hotel construction.) Among other ramifications, under certain conditions, this practice

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[1] Ibid., p. 70.

[2] H.W. Herman, "Private Investors Find Opportunity in Financing Residence Halls," College and University Business, XXXVIII, No. 4 (April, 1965), p. 67.

could obviate governmental appropriations for the expansion of college facilities. The concept that a college must own all its buildings is based more on historical precedent than on rational decision making. A lease-back arrangement is obviously not appropriate for all facilities; yet it should be included in any discussion of alternative methods for financing construction.

Another technique more common, though hardly universal, is the utilization of idle funds for short term investments. Since governmental appropriations, or apportionments, are normally transferred to the institution in one lump sum and the actual expenditure of these funds is spread over a period of time, the unused balance can be used to produce additional income. The benefits of such a program are illustrated by payments for the construction of campus facilities. Builders customarily receive payments that lag behind the actual percentage of construction completed.[1] Thus if a building were fifty percent complete, the aggregate payments might well be only forty percent of the total cost. If under these circumstances, as an example, $1,000,000 were apportioned on July 1 for the construction of a building which would required twelve months to complete, the investment on the first of each month of the remaining obligated but unexpended balance in four percent U.S. Government notes--which for all practical purposes

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[1]For a simple formula to determine the lag, see: Warren E. McElwain, "How to Forecast Demand for Construction Dollars," College and University Business XLI, No. 5 (November, 1966), p. 69.

are risk free--would net an additional $21,980.[1] The benefits to the taxpayer and the student are apparent. Income and expense flows in colleges are not parallel and there are many opportunities for investment of the type described.

Administrators who are aware of the financial management inherent in their positions are represented by such men as Vernon Robert Alden, president of Ohio University, Athens, Ohio. He has been characterized as "The new breed of college president . . . with a head for business and with interests that reach far beyond the campus".[2] Such men as President Alden combine scholarly achievement (though like an estimated thirty five to forty percent of the new breed, he does not have an earned Ph.D. -- he is a former associate dean at the Harvard Business School[3]), business acumen and dynamic leadership. The detractors are legion, but these practitioners of the new management will be the ones who can keep their institutions strong and viable in the changing environment of the future while the traditional administrators find that the influence of their institutions is rapidly ebbing.

Almost ten years ago Fr. Harlow J. Heneman summed up the role of financial management in a college about as neatly

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[1] Wall Street Journal, February 1, 1967, p. 22. U.S. Treasury notes yielded from 3.57 for thirty days to 4.63 for twelve months.

[2] Richard Martin, "Big Men on Campus," The Wall Street Journal January 24, 1967, p. 1

[3] Ibid.

as anyone to date and listed twelve "elementary but fundamental points". To be well managed, a college or a university should insure:

1. That its objectives have been re-examined realistically and have been restated in specific terms.

2. That its curriculum has been reviewed and tailored to serve these objectives.

3. That the proliferation of course offerings, which adds appreciably to instructional expense, has been or is being curbed, and the faculty is being used effectively.

4. That over-all enrollment objectives have been established.

5. That enrollments by school and college have been projected for each year for ten years, with provision for annual revision of these projections based upon experience.

6. That the intensity of use of present classrooms and laboratories is known as a result of an objective study of room and student station utilization, and that standards of space have been set.

7. That its new building needs have been determined on the basis of equating present and potential use of existing facilities with enrollment projections.

8. That priorities for new buildings have been established objectively by kind and by date when planning is to begin, and when the building is to be available for use.

9. That its requirements for capital funds have been projected in terms of the planned enrollment and building needs.

10. That its requirements for operating funds have been projected for each year for ten years, based upon these data.

11. That projections of income, by type and source, have been made for each year in order to determine the differential to be met by various financial arrangements.

[illegible]

[illegible]

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. That present funds are being used effectively and the college or university is well organized, is soundly managed, and that wasteful or costly practices have been or are being eliminated.[1]

How many college administrators can give an affirmative answer to all twelve points? This, then, is the role of financial management.

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[1]Harold J. Heneman, Partner, Cresap, McCormick and Paget (Management Consulting Firm), New York. From an address given at the Greenbrier Conference, March 1, 1958.

CHAPTER FOUR

THE COMMUNITY JUNIOR COLLEGE

HISTORY AND TRENDS

Development. The history of the community junior college is, in many ways, synonymous with that of all junior colleges. While the community college has distinctive characteristics, it has become so closely entwined with the entire movement that separation is impossible.

Any attempt to trace the development must contend with inexact and often conflicting data--the result of the diversity of concepts and philosophies encompassed by the term. Particularly in the early stages, some institutions were junior colleges only in name. Others were often junior colleges in concept, but not in name. While there is disagreement on exactly when and where the movement was first started, much of the initial impetus can be traced to the influence of William Rainey Harper, former president of the University of Chicago. In 1892 Harper had separated the first and last two years of the then new university into the "Academic College" and the "University College". Four years later the titles were modified to "Junior College" and "Senior College" and thus the name was coined. He was also instrumental in the founding of several schools which were, in concept, public

junior colleges. Notable among these were the Lewis Institute in Chicago in 1896 and the Bradley Polytechnic Institute in Peoria in 1897.[1] In 1901 he actively assisted in the organization of the Joliet Junior College and for the first time the name and the concept were joined.[2] Of the three, only Joliet remains a junior college. Bradley is now a full university and the Lewis Institute has disappeared from the scene.

Thirty two years earlier the idea of the transfer course junior college had been outlined by William Watts Folwell. At his inauguaration as President of the University of Minnesota he commented:

> How immense the gain . . . if a youth could remain at the high school or academy, residing in his home, until he had reached a point, say, somewhere near the end of the sophomore year. . . . Then let the boy . . . emigrate to the university.[3]

Though it is doubtful if he realized it at the time, his inclusion of residence at home touched on what would become the central distinction of the community junior college.[4]

Some authors attempt to place the conception of the junior college as far back as 1835 to the founding of Monticello College in Alton, Illinois, as a private two year school.[5] Six

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[1]Thornton, op. cit., p. 47.

[2]Ibid.

[3]As quoted by Thornton, Ibid., p. 46.

[4]At the time Folwell felt that his proposal for what amounted to the junior college was not understood, or if understood, was not taken seriously. Ibid.

[5]Clyde E. Blocker, op. cit., p. 25.

schools organized prior to 1900 were in operation as junior colleges in 1962, though all but one is extremely small and privately controlled.[1] (The exception is Vincennes University, Vincennes, Indiana, which had a 1962 enrollment of 661 students. The title gives some indication of the inexact terminology of the movement--it is in fact a junior college.)[2] Each claims some measure of being "first" in the movement.[3] On the other hand, Monticello College was not recognized as a junior college until 1917. Many other institutions that had adopted some of the concepts or semantics of what was to become junior colleges have now been merged, converted into senior colleges or have disappeared.

It is obvious that the junior college did not suddenly crystalize, but rather was slowly synthesized from many different concepts. The efforts to pinpoint an exact demarcation are largely arbitrary and tend to obscure the evolutionary process of the junior colleges. Even today this process is continuing and ideas are constantly being defined, refined, initiated and discarded. The junior college is a dynamic educational phenomenon that refuses to be classified into static pigeon holes.

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[1]Edmund J. Gleazer, American Junior Colleges (6th ed.), op. cit., p. 175.

[2]Ibid., p. 181.

[3]For a partial listing of the claims see: Thornton, op. cit., p. 46-49.

[illegible] v. [illegible], [illegible] (1[illegible]-[illegible]), [illegible] in 1[illegible].

[illegible], p. 1[illegible].

[illegible] a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Number of Colleges. The history of the junior college movement has been characterized by uneven periods of expansion and retrenchment.[1] (Figure 1.) In 1900 there were eight embryonic junior colleges.[2] By 1921 the total had increased to 207.[3] In the next ten years 268 more were added.[4] The depression of the 1930's almost halted the opening of new colleges, though enrollment continued to grow. Construction had begun to quicken by 1940 but World War II curtailed most plans for expansion. During the full war years of 1942-1944 only seven new junior colleges opened, four of those small private institutions.[5] After the war the increase of students generated by the G.I. Bill brought about a modest expansion; and from 1945 through 1954

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[1]This section is an example of the difficulty in correlating data from different sources. In 1962 the Office of Education listed 524 junior colleges (Statistical Abstract, op. cit., p. 129.); at the same time American Junior Colleges 6th ed. contains extensive descriptions of 655 fully accredited institutions. The difference is one of definition. In an effort to compare data, all information has been taken from a single editor (Gleazer) though the exact statistics for individual years are scattered through several volumes.

[2]Edmund J. Gleazer, Jr., (ed.) American Junior Colleges (7th ed.) Washington: American Council on Education, to be published late in 1967), p. 5. When completed this directory will drastically update the present information. Unfortunately all data is not yet available.

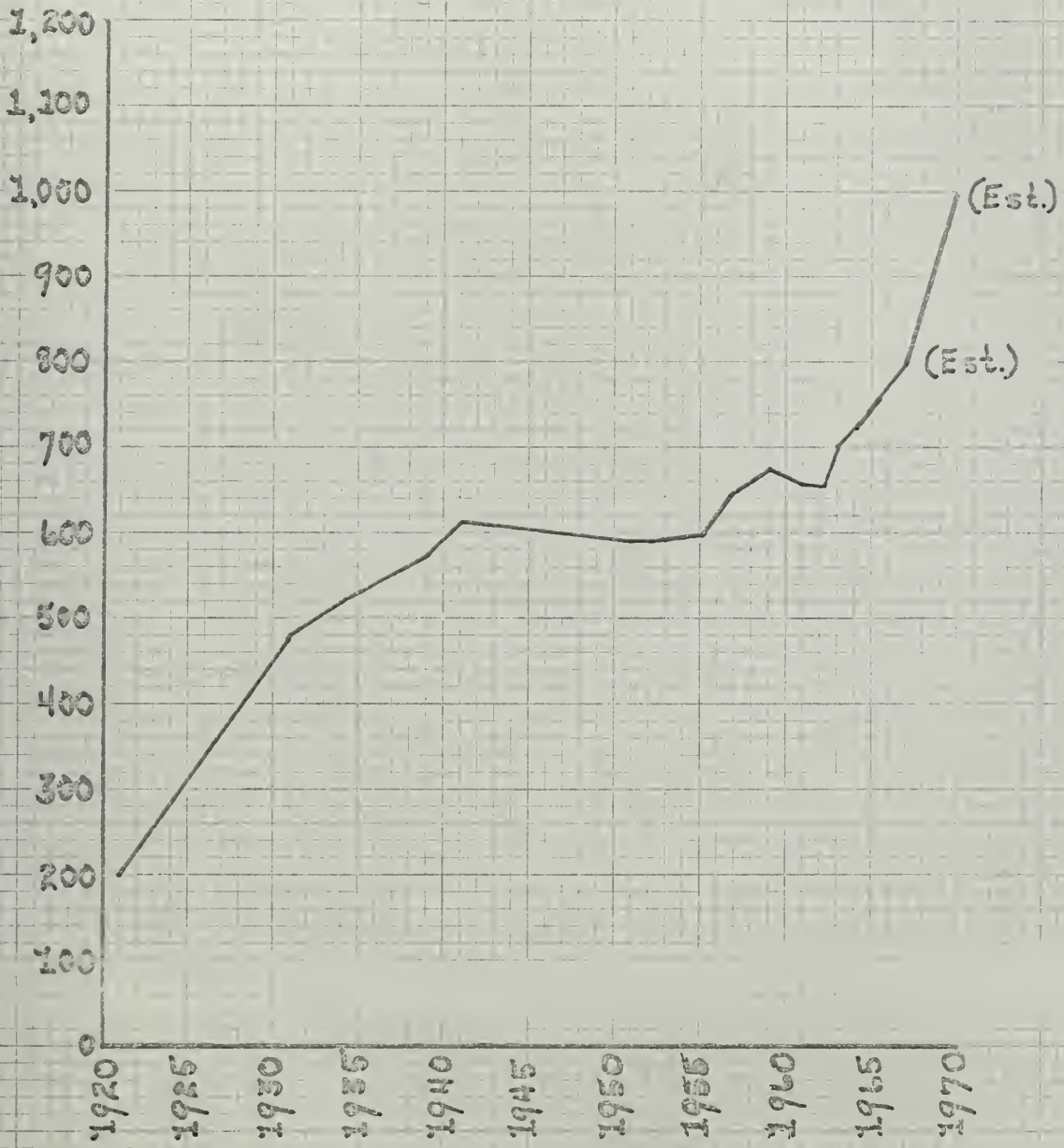
[3]Edmund J. Gleazer, Jr., (ed.) Junior College Directory, 1960 (Washington: American Association of Junior Colleges, 1960), p. 65.

[4]Edmund J. Gleazer, Jr., American Junior Colleges (7th ed.), loc. cit.

[5]Edmund J. Gleazer, Jr., American Junior Colleges (6th ed.), op. cit., p. 491-503.

Fig. 1

Number of Junior Colleges



Source: American Junior Colleges 6th ed.
American Junior Colleges 7th ed.
Junior College Directory, 1960

(All edited by Edmund J. Gleazer.)

an average of thirteen junior colleges were opened each year.[1] However, losses by merger, elimination and conversion into senior colleges exceeded the new schools for most of the period and by 1952 the total had slipped to 594, down from a high of 610 in 1941.[2] There was another surge of building in the late 1950's and by 1959 a new high of 677 was reached.[3] Once again the number dropped, hitting a low of 655 in 1962.[4] Since that time the number of junior colleges in operation has increased steadily. By 1963 they were being established at the rate of thirty a year and in 1965 and 1966 annual new openings averaged fifty.[5] Proponents of junior colleges are optimistically predicting over one thousand schools by 1970. Whether a retrenchment will occur, and if it does, what effect it will have on the junior colleges is not known. Nor is it possible to accurately predict the number of institutions that will graduate into senior colleges.

While it is always possible to question the predictions of enthusiastic partisans of junior colleges, there is no doubt that today there is a new phase of expansion.

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[1] Ibid., p. 22.

[2] Edmund J. Gleazer, Jr., Junior College Directory: 1960, loc. cit.

[3] Ibid.

[4] Edmund J. Gleazer, Jr., American Junior Colleges (6th ed.), op. cit., p. 504-531.

[5] Edmund J. Gleazer, Jr., American Junior Colleges (7th ed.), op. cit., p. 4.

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[1] Ibid., p. 20.

[2] Edward J. Sinnott, Jr., [illegible] (New York: [illegible]).

[3] Ibid.

[4] Edward J. Sinnott, Jr., [illegible] (New York: [illegible]), [illegible], p. [illegible].

[5] Edward J. Sinnott, Jr., [illegible] (New York: [illegible]), [illegible], p. 9.

Enrollment. Equally dramatic but of more significance is the increase of total enrollment in junior colleges.[1] (Figure 2.) With the exception of the war years, and to a lesser extent the post World War II recessions, enrollment has climbed steadily from less than 100 in 1900 to over 1.5 million in 1962.[2] It is interesting that during the depression of the 1930's enrollment continued to climb with the exception of the low years of 1932-1934; and even in those years the decrease was less than eight percent.[3] This possibly can be attributed in part to the lower costs of junior colleges attracting students who would have otherwise entered senior colleges and partially due to the immediately saleable technical knowledge offered by the terminal courses. It is significant that terminal courses available increased from 1600 in 1930 to "over 4,000" by 1941[4]--a five hundred percent growth--while enrollment increased by less than three fold. It is hypothesized that the junior colleges suffer less from economic depression than the

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[1]"Total enrollment" includes all students who enroll for any course during a year. Again, American Junior Colleges is utilized as the primary source. The Office of Education includes only those students enrolled in courses creditable to a bachelor's degree and thus eliminates most terminal courses. It also publishes a break-down of terminal education but does not differentiate between types of institutions. At present there is no accurate way to compare the two sources.

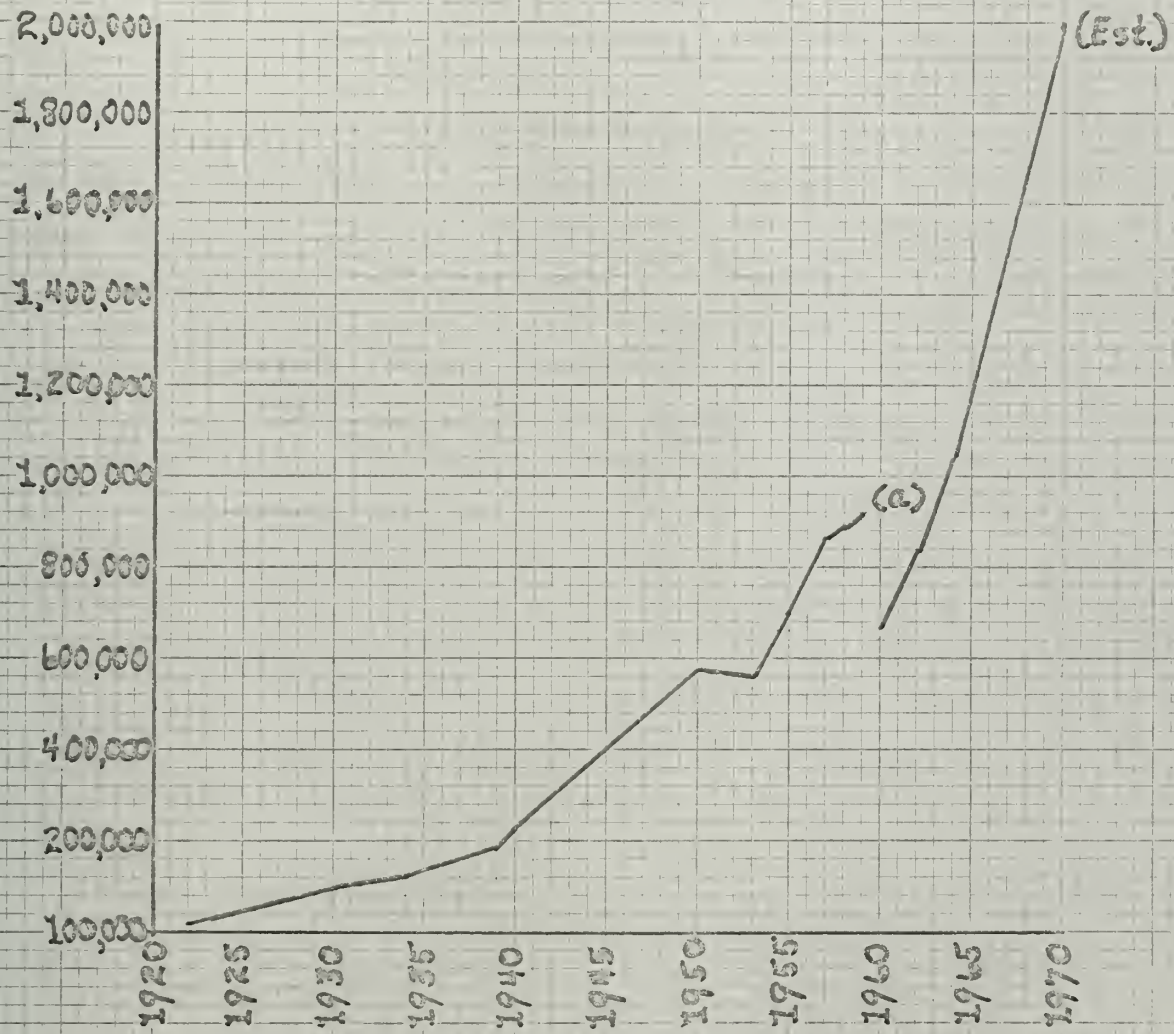
[2]Edmund J. Gleazer, Jr., American Junior Colleges (7th ed.), loc. cit.

[3]This is the maximum identifiable decrease. It includes only transfer courses. See: Digest of Education Statistics 1966, op. cit., p. 71. There is some indication that no decrease took place in overall enrollment.

[4]Thornton, op. cit., p. 51, quoting Dr. Merton E. Hill.

Fig. 2

Enrollment in Junior Colleges



(a) "Student" reclassified.

Sources: American Junior Colleges 6th ed.
American Junior Colleges 7th ed.
Junior College Directory, 1960

(All edited by Edmund J. Gleazer.)

senior institutions. The junior college is able to make up some of its loss in enrollment by transfers from senior colleges and by the increase in students undertaking technical terminal courses. No such shift is available to the senior colleges.

By 1950 enrollment was at 597,475 and nine years later had reached 905,062.[1] There was a drop recorded during the early sixties, the bulk of which apparently was from a redefinition of "student",[2] but the original high had been regained by 1963.[3] Enrollment has continued to grow since that time and is expected to double in the six years from 1964 to 1970 to over two million.[4] It is reasonable to assume that this trend will accelerate in the future. As the gap narrows between increasing personal income and decreasing college cost the number of persons capable of attending college undergoes a dramatic increase.[5]

Enrollment in higher education is expanding not only in absolute numbers, but relative to the population. In 1964

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[1]Edmund J. Gleazer, Jr., Junior College Directory, 1968. loc. cit.

[2]Surprisingly, the Office of Education not only does not indicate a decrease during this period, but reports a 39.1 percent gain in enrollment from 1960 to 1962.

[3]Edmund J. Gleazer, Jr., American Junior Colleges (7th ed.), loc. cit.

[4]No projections have included the possible effect of the war in Viet Nam. The conflicting pressures of the draft and the educational deferment appear to negate each other. However, if a "G.I. Bill" for Viet Nam is passed, as is presently proposed, the effect could be of considerable magnitude.

[5]For an excellent example of the impact of overall economic conditions on enrollment forecasts see: A.J. Brumbaugh, The Two Year College in Virginia (Richmond: Virginia Higher Education Study Commission, 1965), p. 37-42.

over 43 percent of the eighteen to twenty one year old group was attending a college of some type. (Figure 3.) Just how dramatic this increase has been can be gauged by comparing it with the turn of the century when the comparable percentage was a minuscule 3.91 and just prior to World War II, only 11.89.[1] Much of the increase has been the result of the junior colleges accepting a larger share of collegiate level students. (Figure 4.) It is impossible to make any realistic forecasts of this trend other than, barring a major military conflict, it will continue to grow. It appears that the share of transfer courses will level out at approximately thirty five percent; but it may be in the technical terminal area that the most growth will occur.[2]

Public Control. A trend that formerly had great significance but now has about run its course is the increasing proportion of junior colleges which are publically controlled and supported. They now so completely dominate the picture that little further expansion is possible. This, of course, will increase the importance and scope of any financial management prompted by Federal assistance. In 1941 for the first time there were more public junior colleges than private ones,[3] though enrollment

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[1] Digest of Educational Statistics 1966, op. cit., p. 67.

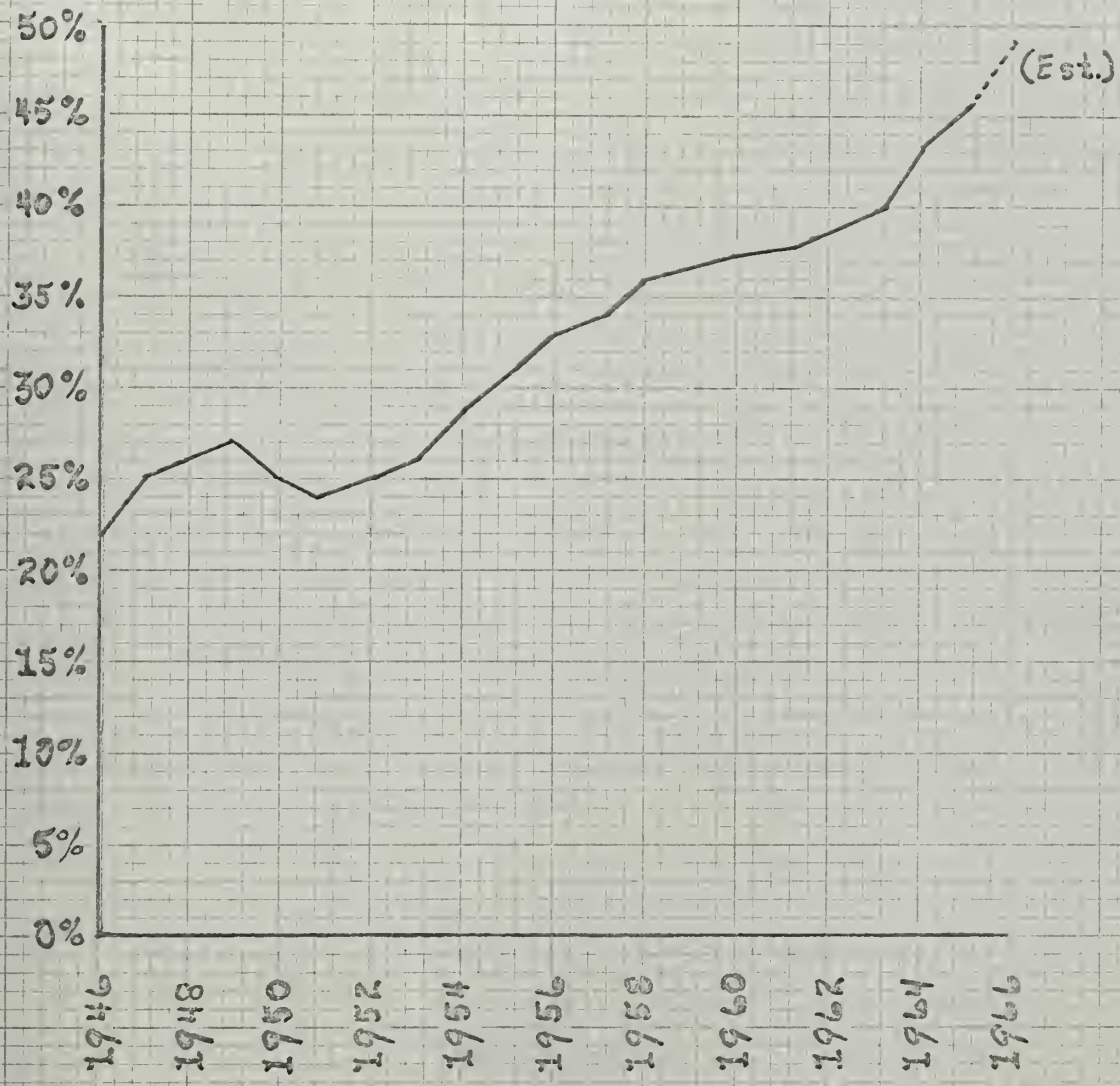
[2] Theoretically if the junior colleges undertook all freshman and sophomore level education and the senior colleges dealt with the last two years only, the ratio would be 50 percent. This ignores the terminal courses and is considered a highly improbable development for the foreseeable future.

[3] Edmund J. Gleazer, Jr., Junior College Directory, 1966, loc.cit.

Fig. 3

Percentage of Population Age 18-21 (Incl.)

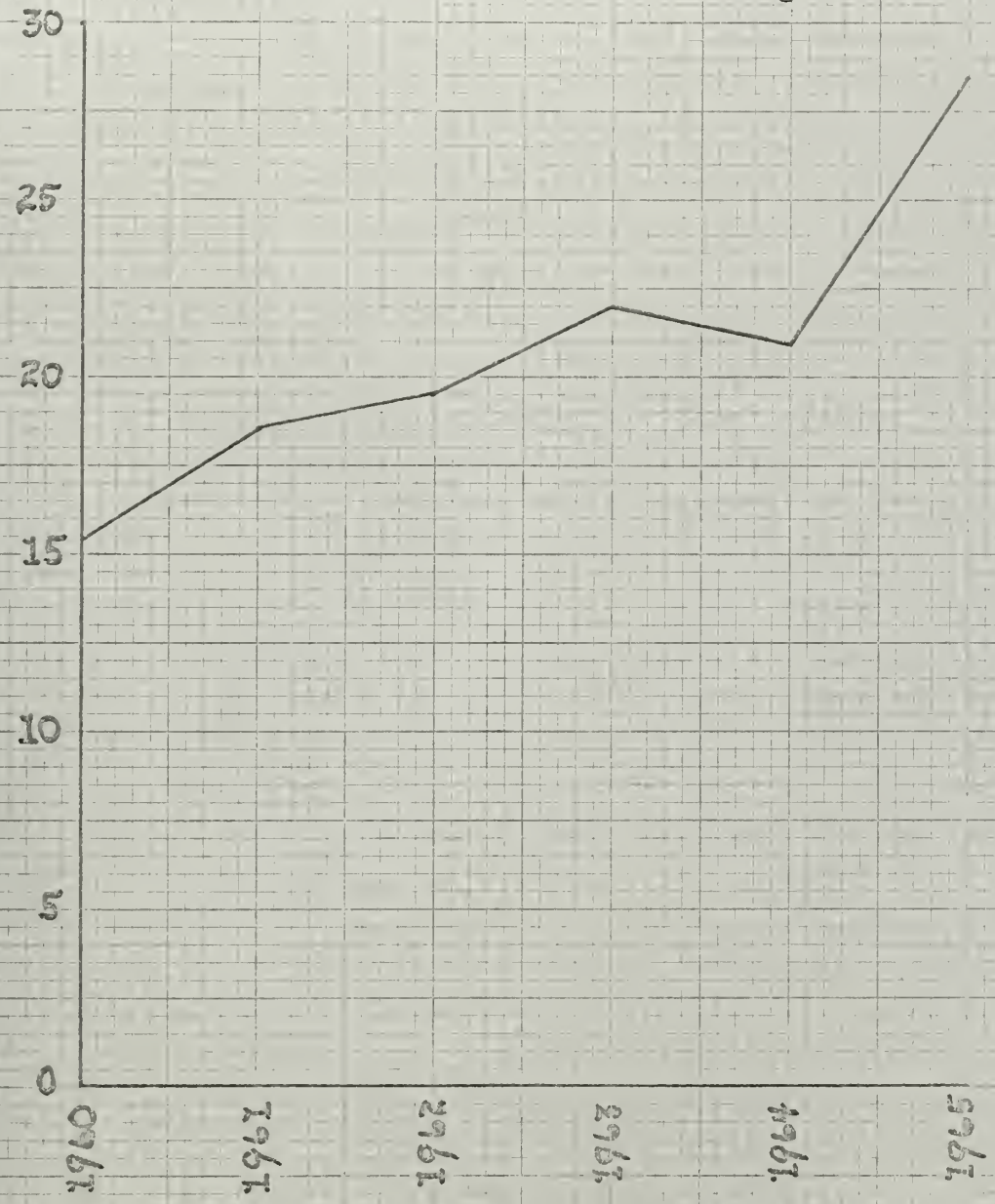
Enrolled in Higher Education



Source: Simon, Digest of Educational Statistics, op. cit., p. 64

Fig. 4

Percentage of Students Enrolled in Higher Education Attending Junior Colleges



Sources: Total enrollment: Simon, Digest of Educational Statistics, op. cit., p. 64.

Junior College enrollment: Gleazer, Passim.

(The variation in definition does not distort the totals)

in private schools had been surpassed by public institutions in 1922.[1] Community colleges now comprise approximately eighty three percent of the public schools and enroll more than eighty five percent of the students in junior colleges, public or private.[2] With a few notable exceptions, the private junior college has become a small, highly specialized institution more often than not under the control of a church group.

The diversity of junior colleges is indicated by their spectacular range of enrollments.[3] Public schools vary from Pasadena Junior College with 25,984 students and which with Long Beach Junior College has a combined enrollment exceeding 50,000; to Sitka Community College located in Sitka, Alaska, with just forty part time students. There are ten public junior colleges with enrollments over 10,000--all in California. (The largest junior college outside California is the Wright Branch of the Chicago City Junior College with 8,721.)[4] Nine public colleges have enrollments of less than one hundred, five of them in Florida. Twenty privately controlled schools top the one thousand students mark. Of these the

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[1]Ibid. The Office of Education agrees with the date, but not the totals.

[2]Edward J. Gleazer, Jr., American Junior Colleges (6th ed.), op. cit., p. 5. The 7th edition gives the same figures.

[3]All data in the following section is taken from Edward J. Gleazer, Jr., American Junior Colleges (6th ed.) institutional exhibits and reflects information current in 1962.

[4]Total for all branches is over 20,000.

Junior College of Connecticut at Bridgeport is the largest with 4,067, of whom twenty five percent are from out of state. At the opposite extreme is Saints Junior College, a church controlled school in Lexington, Mississippi which has but nineteen students--though it boasts a 1.05 professor-student ratio.

Courses Offered. Courses offered by the schools show the same infinite variety. Inherent in serving the dual purposes of terminal and transfer students, the junior colleges would indicate more diversity in subjects than the first two years of a four year institution. In 1962 the junior college student could select from 119 major areas of instruction spanning from agriculture to X-ray technician. Included were conventional subjects as well as more specialized ones such as "Boating" (Lower Columbia College), Equitation (Southern Seminary and Junior College) and Secretarial Homemaking (Eastern Arizona, Middle Georgia and Joliet junior colleges).[1] While junior colleges will always offer a greater selection of courses than the senior institutions, pressures are beginning to be generated to curb the proliferation. If subjected to a quantified analysis of input and output--and it appears that this will eventually occur--many of the peripheral courses will be shown to be tremendously expensive and will be dropped in favor of subjects whose return is more equitable with the resources allocated. The community college shows two trends which may prove to be of major import.

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[1]This is the conclusion of the section covered by the blanket footnote on page 62.

The first is the growing role in training students in the specialized skills required by our increasingly complex technology. This includes the more conventional professions such as laboratory technicians, accountancy and some phases of engineering. However the most promising area is in those fields where specialized knowledge is of a greater premium than versatility such as computer programmers, statistical analysts, information flow designers (on a limited scale) and junior urban planners. The need for these skills is, and for the foreseeable future will continue to be, so great that employers will sacrifice the broadening education of the four year institution for a graduate of a junior college if the level of training in the particular technology is equivalent.

The second trend is the community college's adaptation to its local cultural environment. It is no accident that the junior colleges in the Washington area (and the senior institutions to a lesser degree) have a relatively greater number of courses relating to clerical and governmental skills, just as a school in Iowa would emphasize agriculture and one in west Texas, petroleum technology. This trend recognizes that the community college serves a geographic segment of society rather than an economic or cultural group. While this is based only on conjecture the emphasis may serve to break down much of the very basis for its adoption. If followed over several decades, many schools may well develop superior departments in a specific subject and thus attract students from all over the United States who wish to pursue that field. The same phenomenon is

observable to some extent in the senior colleges of today. The tendency to specialize in a particular area would reflect the degree of specialization within the local geographic area. Thus, at some future date, a student may well have his choice of "The Pittsburgh Community College of Steel Industry", "The Chicago Community College for Railroad Technology", or the "Miami Tourist Management Community College".

There is another alternative. Community colleges may well be integrated into a comprehensive and concentrated "educational park",[1] and become nothing more than a level in a community educational system spanning sixteen years.[2]

General Finances. As could be expected from the data previously cited on the growth exhibited by the number of colleges and the total enrollment, the finances of higher education have shown a dramatic increase in the past decade continuing a trend that began, literally, in 1636 at the founding of Harvard.

However, financial statistics are even more vulnerable to distortion for in addition to the varying base of the data, one must also contend with fluctuating values of a dollar. A comprehensive and in-depth analysis of the finances of institutions of higher education would require a study many times over the scope of this entire paper and would be faced with

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[1] Wall Street Journal, February 13, 1967. Richard Martin, "Education Will Become a Life Long Process," p. 1.

[2] Ibid., p. 10.

the discouraging prospect of always being obsolete prior to the date of publication. Some idea of the complexities of the task is indicated by the fact that, computer tabulation notwithstanding, the Office of Education compiles data on the finances of higher education only biennially[1] and that the most recent information reflects data at least four years old.[2] However, as outdated and distorted as the information may be, it gives at least some relative bench marks for comparison, which indicate the general trends evident. The magnitude of the increase in expenditures for higher education is given some perspective by noting that from 1950 to 1964 the purchasing power of a dollar decreased 15.8 percent[3] but expenditures for higher education rose over 540 percent. (Figure 5.)

A more reliable indicator is the amount of the nation's Gross National Product (GNP) which is being spent for higher education. (Figure 6.) As Americans enjoy an expanding prosperity they shift to a higher position on a propensity to save-consume schedule and a greater proportion of their net disposable income is available for educational purposes, either directly, or indirectly through governmental spending. The latter method appears to be gaining favor as less painful.

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[1] Financial Statistics of Institutions of Higher Education, 1959-1960, Felix H. I. Lindsay (ed.), (Washington: U.S. Government Printing Office, 1964), p. iii. Interestingly this compilation was directed by Congress since 1867.

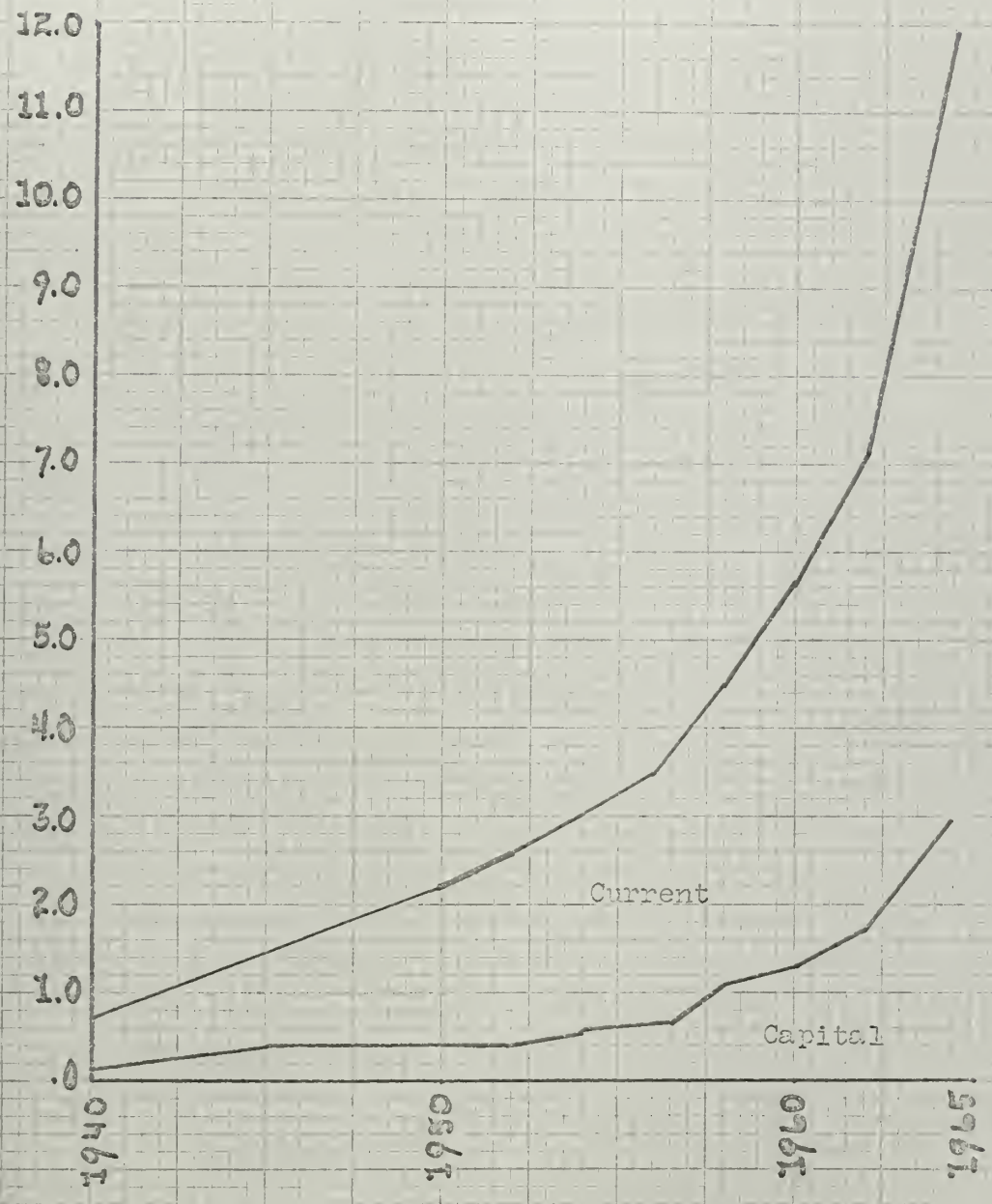
[2] Ibid.

[3] Statistical Abstract, op. cit., Table 493, p. 391.

Fig. 5

Expenditures of Institutions of Higher Education

Capital and Current Funds
(In billions of dollars)

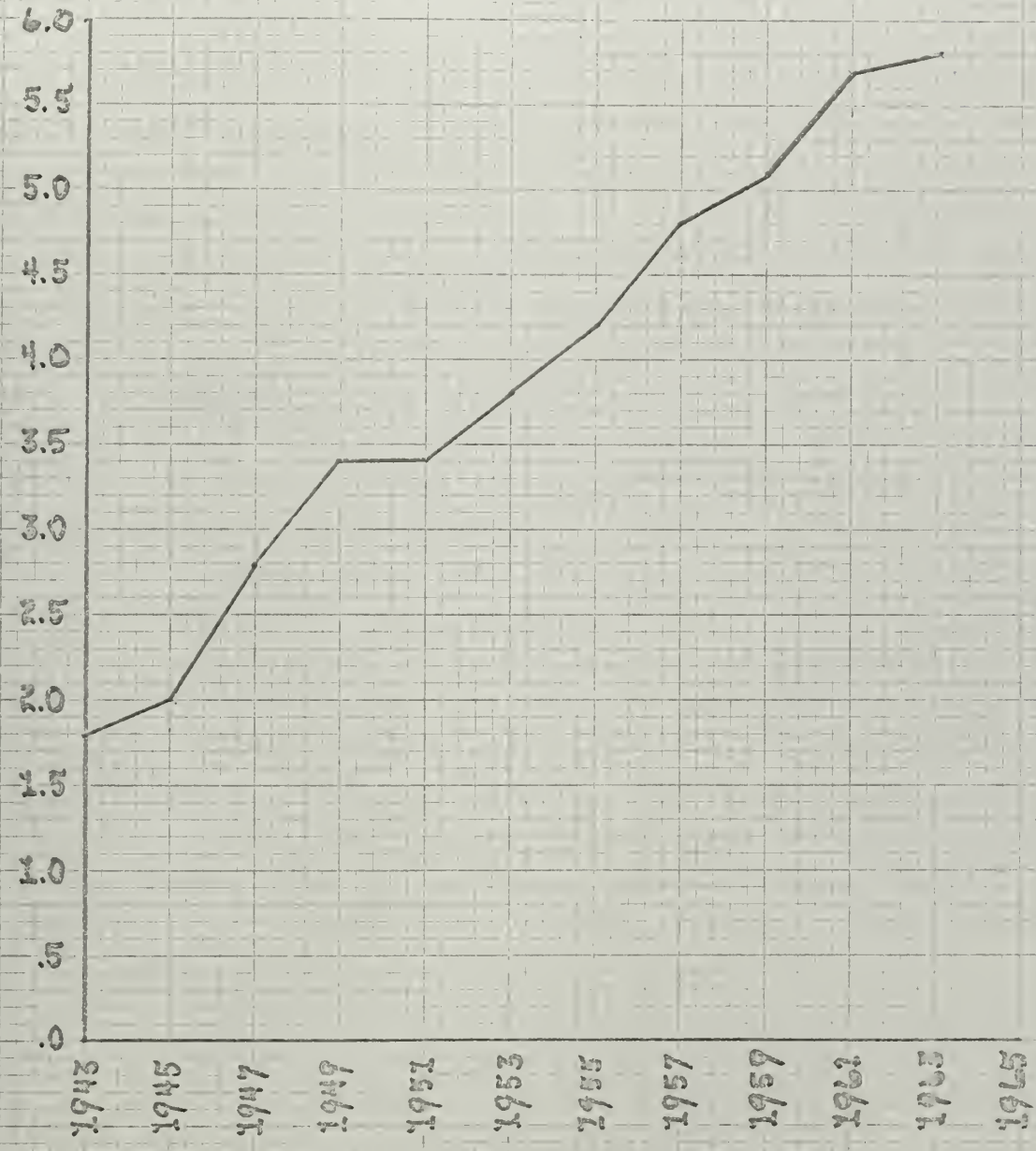


Source: Digest of Educational Statistics, 1966, op. cit., p. 83 and 88.

Fig. 6

Expenditures for Higher Education

as a Percent of G.N.P.



Source: Digest of Educational Statistics, 1966, op. cit., p. 131.

particularly through the federal government. Complimenting this shift is a growing fundamental change in the attitude of the average citizen toward higher education. College is no longer a "luxury" as it once was, but is becoming a necessity for a large segment of the population and thus is subject to a more rigid inclusion in the personal budget. Even now in most middle income families a college education can compete successfully with a new car or a new home as an alternative utility satisfaction. Although the amount of personal expenditure for education tripled from 1950 to 1964 to over 5.3 billion dollars[1] while personal consumption expenditures as a whole did not quite double,[2] this allocation still represents only a small fraction of the total cost of higher education and in public institutions can honestly be considered only a supplemental source of income.[3] The majority of the burden has been accepted by the entire nation in the form of tax funds allocated by governmental agencies. If the democratization of higher education is to be achieved, governmental support is at present the only feasible method. There appears no other way to insure that the income of a family is not a major factor in determining who shall and who

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[1] Statistical Abstract, op. cit., Table 457, p. 324. As the costs of secondary and elementary schools are negligible to the individual, almost all of this amount represents tuition and fees for higher education.

[2] Ibid.

[3] Financial Statistics of Higher Education, op. cit., p. 29. Tuition and fees contributed 10.1 percent of total current income of public institutions in 1960.

shall not receive higher education.

As in other matters that become of national concern, the contribution base for the tax monies for education has undergone a steady broadening from a locality to a state and now, increasingly, to the nation as a whole. This latter requires federal funds. Indicative of the size of the federal contribution is that, other than in 1964, federal funds for education have consistently exceeded the much heralded spending for space--including all applications such as military which are in addition to the more publicized NASA expenditures--and higher education is an ever expanding portion of the total.

Fig. 7

FEDERAL EXPENDITURES

(In millions of dollars)

	1960	1962	1963	1964	1965
Space[1]	888	2,387	4,079	5,930	6,886
Education (Total)[2]	3,802	4,657	5,232	5,831	7,674
Higher Education[3]	778	991	1,161	1,333	2,042

[1] Statistical Abstract, op. cit., Table 797, p. 555.

[2] Ibid., Table 202, p. 143.

[3] Ibid.

In 1965 spending for education by all levels of government[1]

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[1] Statistical Abstract, op. cit., Table 577, p. 421.

totaled 30.021 billion dollars and represented the largest catagory of spending other than national defence.

By 1964 federal aid for higher education equalled the combined total of all other governmental sources and---even including the many private institutions which rely heavily on student tuition, private grants and endowment earnings for income---public funds provided almost half of all the money spent on higher education in the nation. (Figure 8.) As the proportion contributed by student tuition and fees fell drastically and that by state and local governments slowly decreased, it was federal funds that filled the gap. (It should be remembered that this was prior to the inclusion of federal aid to higher education as a major legislative program as exemplified by the "Great Society".) The current data is unavailable, but if it were, obviously it would indicate that federal funds are by far the largest single source for all institutions in the aggregate.

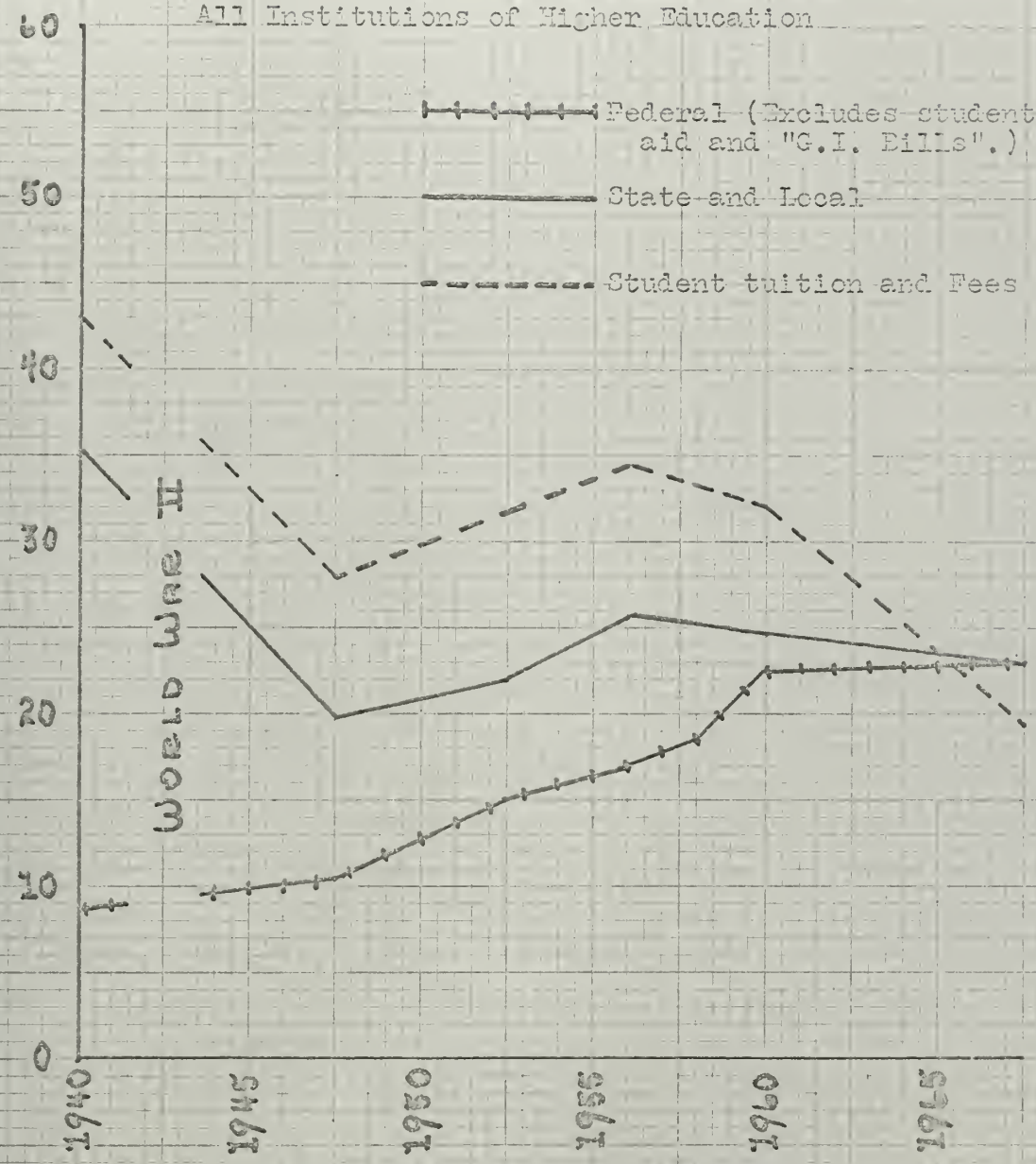
It is difficult to describe just how dramatic this increase has been. If the "G.I. Bills" of post World War II are discounted, in 1950 federal funds comprised slightly less than twenty percent of governmental support for colleges (private and public); ten years later the proportion had doubled. (Figure 9.) The trend is obvious and well established, but any predictions of the future must take into account several unknown factors, the effect of which may be immense. Simple projections under conventional assumptions, while statistically accurate, may well ignore the most vital of possibilities.

Fig. 8

Selected Sources of Funds

As a Percentage of Current Income for

All Institutions of Higher Education



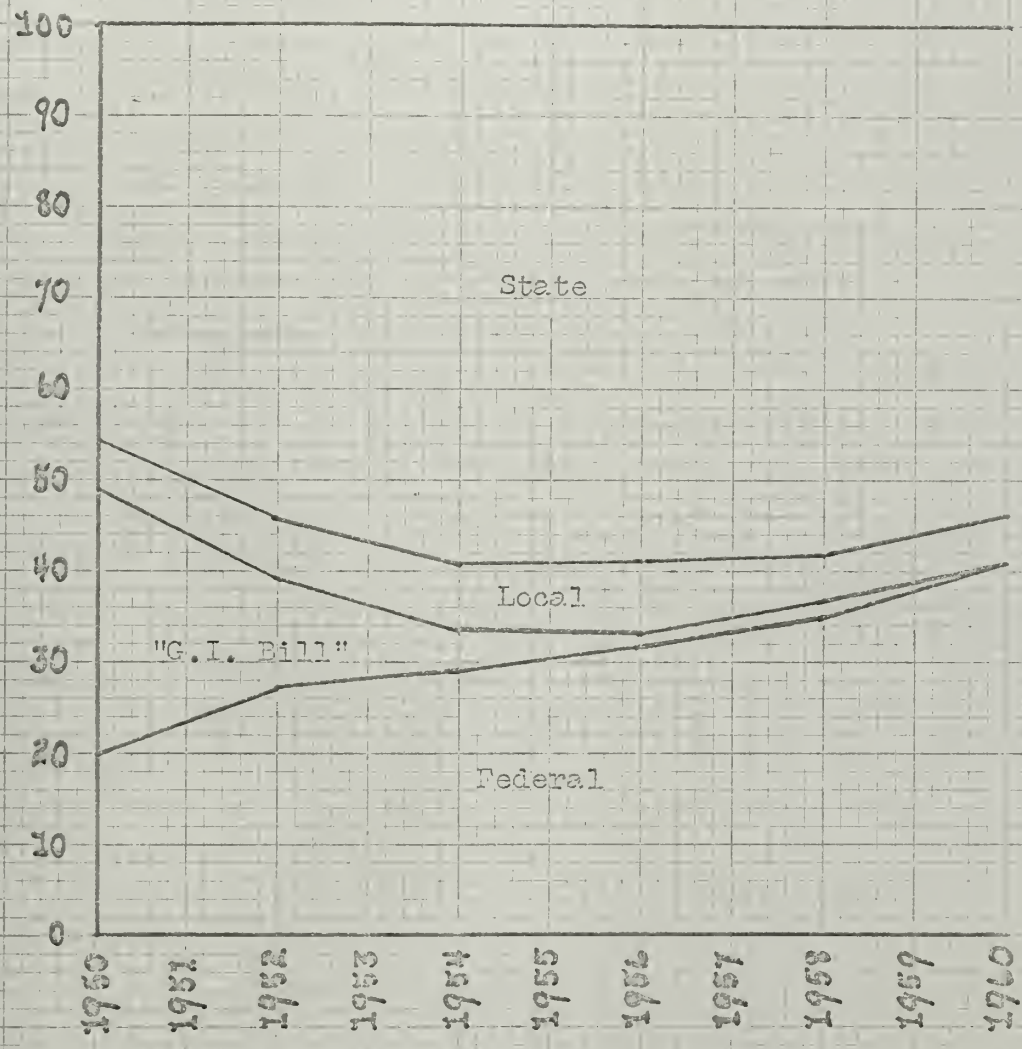
Source: Financial Statistics of Institutions of Higher Education, op. cit., p. 19 (1940-1960)

Digest of Educational Statistics 1966, op. cit., p. 83 (1964).

(Data all from Office of Education and appears to use same standards and is comparable.)

Fig. 9

Percent of Public Funds for Educational and General Income by Source



Source: Financial Statistics of Institutions of Higher Education, op. cit., p. 15.

Many economists readily concede that the United States has entered a period of sustained explosive economic growth but that, barring the outbreak of global war, the portion of the GNP funneled through the federal government will remain fairly static. While there may be occasional slowing of the rate of growth--a recession--the overall trend is unparalleled in history. An ever expanding national economy has become an article of faith and the supreme objective of federal policy.

This prosperity will have permeating consequences for higher education for in the future it may well be that the major fiscal problem of the federal government is not achieving a balanced budget, but in finding ways to spend the money available. In addition, the possibility of a world wide détente and a corresponding reduction in expenditures for national defense would release, literally, a flood of resources for other purposes. Education will have a high priority. This is not a contradiction of the "shake out" predicted for colleges--rather a reinforcement of the probability. Under circumstances such as cited above federal funds will dominate all schools, as will federal standards of financial management. And there will always be a constant demand for upgrading education generated by the citizenry and the students.

It is not inconceivable that at least two years of junior college education, supported in large measure by the federal funds, will become mandatory for all students.[1] The impact could be staggering.

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[1] Wall Street Journal, February 13, 1967, loc. cit.

Three things are clear: higher education has become a major objective of national policy, federal taxes will provide the bulk of the funds to implement that policy and the junior colleges will be the first to feel the full impact.

Capital Funds. Much of the assistance is now, and in the future will continue to be, in the form of grants or indirect aid such as student assistance or research contracts; but as of 1960, at least for capital expenditures in community colleges, it was almost always in the form of "loans". At the local level these are normally bonds issued by a school district set up for the express purpose of financing the college. State bond issues or revolving funds serve the same purpose. For the federal government loans give the added advantage that they are usually not included in the administrative budget submitted by the President to Congress and are treated in much the same manner as trust funds. (Their full impact shows only in the national accounts budget.) Almost half of the $89,034,000 received by community colleges for plant and equipment purchases in 1960 came as governmental loans. (Figure 10.) The repayment of these loans absorbs approximately six percent of the total capital budget and represents a continuing demand on the junior college for a fixed expenditure to service their debt structure. (Figure 11.)

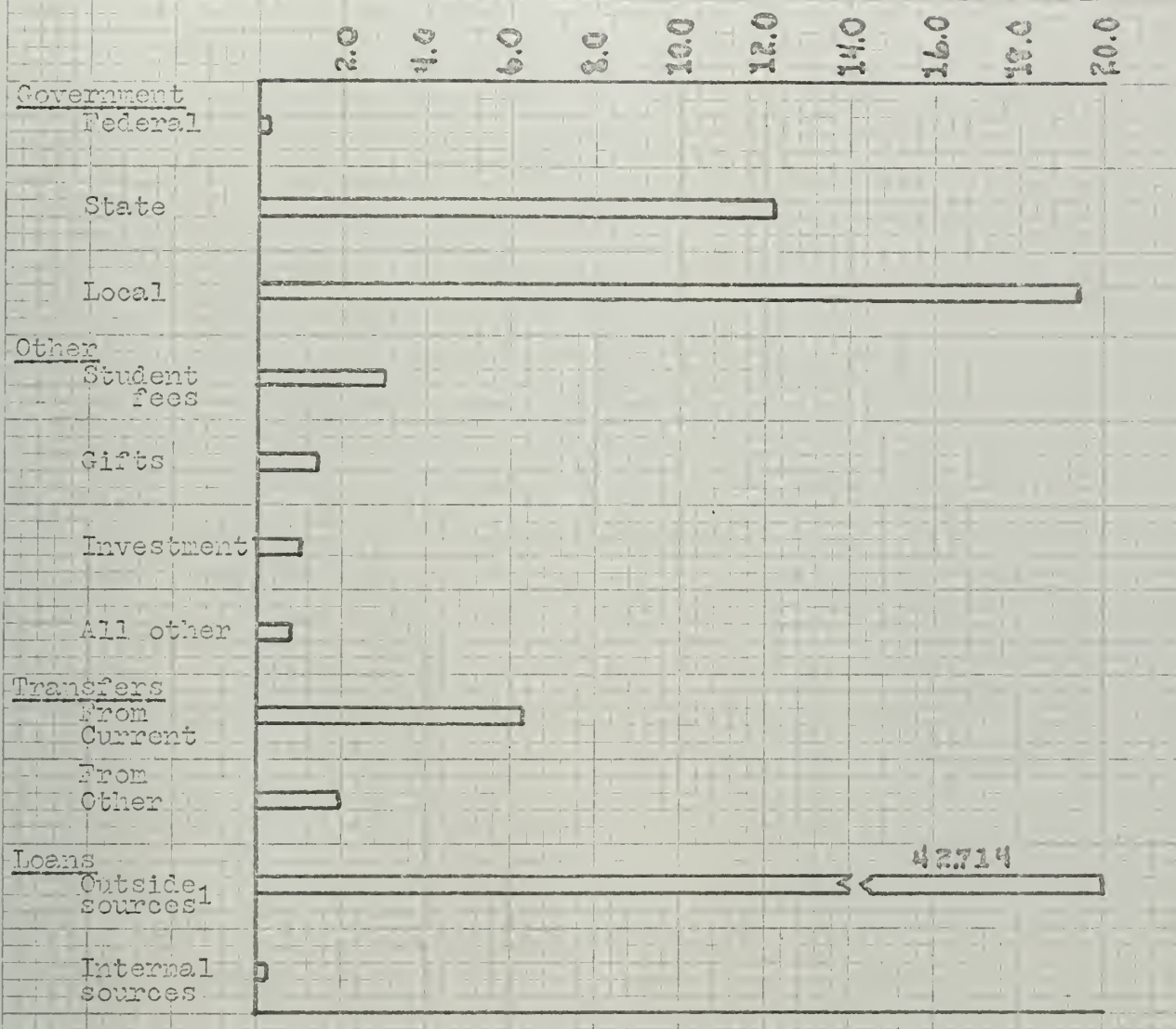
There is an added factor in utilizing governmental assistance for capital projects, particularly those of federal origin. A cynic might be tempted to calculate the apparently infinite ratio between those academic administrators who deplore

Fig. 10

Capital Fund Income Source

Public Junior Colleges 1960

(In millions of dollars)



[1]This includes loans from governmental sources.

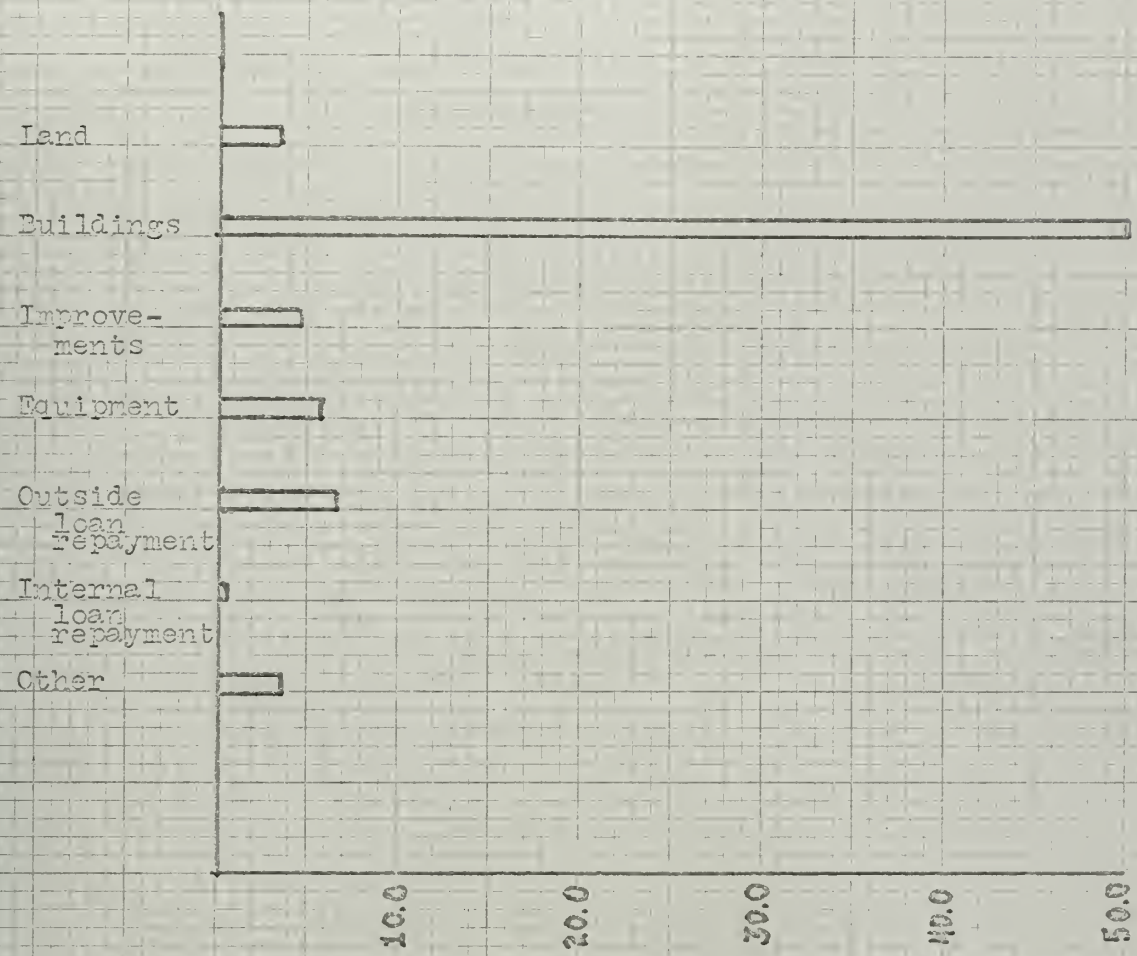
Source: Financial Statistics of Institutions of Higher Education, op. cit. p. 137.

Fig. 11

Capital Fund Expenditures

Public Junior Colleges, 1960

(In millions of dollars)



Source: Financial Statistics of Institutions of Higher Education, op. cit. p. 145.

federal influence in higher education and those who have refused federal funds. It is understandable that administrators as a whole are leery of any "strings" attached to federal money, with possible justification. The application of these funds to capital items in large measure mitigates this fear for it is difficult to influence a building, once it is constructed. While a professor conceivably might be swayed in his teaching if his success or failure depended on federal funds, capital items have a "go--no-go" quality about them that refuses to be subjected to any external pressure. For the immediate future a concentration of federal assistance on capital items would soothe any fears that the administrators might have and yet allow the government to continue in its stated purpose of making major contributions to higher education. Of course there will soon come a time--and in many institutions it has already been reached--where capital spending cannot absorb all the federal funds available and they must necessarily be used for other functions. But the capital budget provides a very suitable outlet for any assistance that is not restricted to a specific project. The junior college capital budget is the logical place to begin the coming era of governmental support.

Summary. In summary, the history of the junior college movement has been one of dynamic growth. Most of the forces shaping the schools have now been concentrated in the community college and within that institution have focused on the

capital expenditures.

The future promises to be one of exciting innovation and expansion, of changes only dimly perceptible, of a role in society that is now but a sketchy outline of possibilities. And into this future go the present academic financial administrators, with obsolete tools and inappropriate techniques--armed with a single sling and no arrows against a benevolent fortune.

CHAPTER FIVE

DEBENTS FINANCIAL MANAGEMENT

THREE CASE STUDIES

The three case studies below are not intended to be a comprehensive presentation of the range of community colleges; nor were they intended to be an in depth analysis of the particular schools. They are, rather, indicative of the variation that is possible and demonstrate briefly the capital expenditure decision making process that is presently being used in the representative schools. Each was carefully chosen for the diversity it illustrated in type of control, size, responsiveness to the geographical environment and the relative maturity of the institution.

Montgomery Junior College. Montgomery Junior college is, in the compressed time reference utilized within the junior college movement, a relatively old and large community college. It is fully integrated with the local county school board and operates as a unit of the county school system. Funds for the operation of the college are generated by student tuition and fees, state aid based on a student/hour formula, federal grants and income from the county government which in turn receives state assistance.

It offers both transfer and terminal courses of instruction, the latter of which reflects Montgomery County's suburbian proximity to Washington and the increasing concentration of private and public research organizations in the county by emphasizing clerical courses and maintaining a large department of physical sciences.

The college opened in 1946 in temporary quarters on the Bethesda-Chevy Chase High School grounds with an initial enrollment of 186 students. At the time it was the first institution of its type in Maryland. Four years later the college absorbed the facilities of the Bliss Electrical School in Takoma Park, Maryland and increased its enrollment to 541. At the same time the temporary campus was abandoned and all instruction transferred to the newly purchased campus. In 1965 it opened an additional site in suburbian Rockville, consisting of an ultra modern campus which by 1966 represented a capital investment of $6,203,000. Of this amount slightly over half has been provided by state grants and an additional $761,924 by the federal government.[1] The Rockville campus is planned in incremental construction phases with an eventual capacity of five thousand students. The Takoma Park site is still active, though its future is under a critical survey. It represents an obsolete plant and

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[1]Montgomery County Board of Education, Budget Request, Capital Expenditures, Fiscal Year 1967-1968 (Rockville, Maryland: Montgomery Board of Education, 1966), p. 304.

the decision soon must be made to abandon it or to construct new, high-rise buildings.[1]

Original estimates of the new campus indicated that when complete the required investment would exceed twelve million dollars; but the remaining portion of construction is now programmed to cost over nine million. "This difference is represented largely by escalation of prices and improved programming and equipment beyond the original estimates."[2] In the academic year 1966-1967 enrollment had reached 2572 full time students and 1746 part time students for a Full Time Equivalent (FTE) of 3139.[3] Enrollment projections utilized for planning purposes call for a FTE of 5261 in the 1972-1973 academic year.[4] These projections are based on present high school enrollment appropriately modified for long range trends in county population growth and on the percentage of eligible students attending the college. No alternatives for varying economic conditions were presented, though the budget forecast did note that economic activity within the county had decreased as evidenced by a decrease in housing starts. At

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[1] Personal interview with Mr. F.A. Goss, Business Manager, Montgomery Junior College, March 6, 1967.

[2] Budget Request, op. cit., p. 305.

[3] Full Time Equivalent (FTE) is an almost universally utilized measure of student activity in junior colleges. Though the formula varies from college to college, in this case it represents 15 hours of credit per semester.

[4] Budget Request, op. cit., p. 302.

present tuition is $112.00 per semester for a full time student with approximately $25.00 in associated fees, depending on the courses undertaken.

The college utilizes a computer for clerical accounting which also provides an input source compatible with the computer utilized for similar purposes by the County Board of Education.

The capital expenditure decision receives imputs from three primary sources, all of which are mated with the campus "master plan". These imputs form the basis for a long range planning document. Initial requirements for facilities are prepared by the faculty members concerned and these objectives along with the enrollment projections prepared by the school board,[1] are forwarded to the supervising architect. The architect responds with completed drawings and cost schedules which are sequentially reviewed and approved by the college administration, the superintendent of schools and the Montgomery County School Board. If the annual incremental funds are approved, or modified and approved, funds are then appropriated directly back to the school.[2]

Detailed cost estimates are prepared only on an annual basis and other than aggregate sums, analyzed only for cost

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[1]The state is legally not required to assist in any statistical analysis for local school districts, though intends to allocate some funds for this purpose under Title V grants. See: United States Advisorary Council on State Departments of Education, Improving State Leadership in Education (Washington: Office of Education, HEW, 1966), p. 87.

[2]Goss interview, loc. cit.

[illegible] outlay of $[illegible] per semester for a full time student with approximately $[illegible] in Associated Fees, according to the current catalogue.

The college utilizes a computer for clerical accounting which also provides an input source compatible with the computer utilized for similar purposes by the County Board of Education.

The initial preparation of budget involves inputs from three primary sources, all of which are noted with the proper "master plan". These inputs form the basis for a long range planning document. Initial requirements for facilities are prepared by the faculty members concerned and these statements along with the enrollment projections prepared by the school board,[1] are forwarded to the coordinating official. The statements together with completed worksheets and cost estimates which are systematically reviewed and approved by the college administration, the superintendent of schools and the Montgomery County School Board. If the annual instructional funds are approved, or modified and approved, funds are then appropriated directly back to the school.[2]

Detailed cost estimates are prepared only on an annual basis and within this [illegible] frame, [illegible] only for cost

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[1] The state is legally not required to assist in any capital and outlays for local school districts, [illegible] to allocate some funds for this purpose under title V grants. See United States Department [illegible] Council on State Departments of Education, [illegible] State Leadership in Education (Washington: Office of Education, [illegible], 19[illegible]), p. [illegible].

[2] Dean interview, loc. cit.

per square foot by type of facility. Capital and operating budgets are prepared and submitted separately. All construction costs are charged to the current year's budget and no attempt is made to allocate them to the useful life of the building.[1]

The college is presently undergoing a cathartic reorganization of its administrative effort prompted by the realization that the school had grown to a point where past financial techniques were no longer capable of coping with the increased complexities in funding. Two independent studies were contracted, one to study the entire administrative organization and one to study the financial procedures within the school and their interface with the county school system.[2] The final results of these studies are not complete and the initial reports are not being released. However, several important changes can be discerned which may possibly be attributed to the studies. The former president of the college was replaced after a one year term by a new one who "has a reputation of being a sharp <u>administrator</u>".[3] A ten year construction plan with a five year rolling budget is presently being proposed. This would include biennial review of the plan and annual updating of that portion

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[1] <u>Ibid</u>.

[2] The inherent objectivity of an independent study is obvious, yet this represents a relatively uncommon form of analysis.

[3] Interview with an administrator in Montgomery Junior College. March 6, 1967. Italics mine.

which had been translated into budgetary figures. The school also has been granted greater autonomy from the county board and it is planned to report only aggregate spending and budgetary requests for county financial reports.

Added to the state of flux in the college administration is a proposal within the Maryland legislature to combine the junior colleges into a state wide unit of the state board of education and divorcing them from county control.

While it is easy to criticize the present financial management, in one sense Montgomery Junior College represents a progressive institution. They have recognized that their present system is obsolete and are making positive efforts to evolve a more sophisticated one. Exactly what techniques will be recommended or actually adopted is, at present, unknown. But they have taken the first, and probably the most difficult and important, step: they have recognized that a massive problem does exist.

<u>The Northern Virginia Community College</u>. The Northern Virginia Community College of Fairfax County, Virginia is a very recent addition to the junior college movement, even if its predecessor school, the Northern Virginia Technical College, is included. The technical school was established in 1964. One year later, enabling legislation was passed by the Virginia state legislature chartering the community college which officially opened its doors for the fall semester in 1965 and supplanted the technical college. Initial enrollment was 761. Projections

[illegible] has been [illegible]. The [illegible] [illegible] from the county [illegible] and it is planned to [illegible] [illegible] and [illegible] [illegible].

Added to the [illegible] is a proposal within the Maryland [illegible] to [illegible] the junior colleges into a system [illegible] of the state [illegible] [illegible] from [illegible].

While it is easy to criticize the present financial [illegible], it can [illegible] junior college [illegible] institution. They have [illegible] system in Maryland and have [illegible] to create a more [illegible]. [illegible] will [illegible], but they have taken the first, and perhaps the most difficult and important, steps. They have recognized that a [illegible] problem does exist.

The Northern Virginia Community College. The Northern Virginia Community College of Fairfax County, Virginia is a very recent addition to the junior college movement. [illegible], the Northern Virginia Technical College, in [illegible]. The technical school was established in [illegible]. One year later, [illegible] the Virginia [illegible] the community college [illegible] the technical college. Initial enrollment was [illegible]. [illegible]

of enrollment have been made by the local and state agencies under assumptions of varying economic conditions. The projection selected for planning purposes calls for a student body of 5,000 by 1973 with an additional 30,000 students in part-time evening study.[1] The school is in temporary buildings while construction of a permanent campus is completed which is expected to be in time for the 1967 fall semester.

The college is fully integrated with a state wide system of community colleges under the control and direction of the Virginia State Board of Education. In addition there is a local board of trustees which act in a strong, but advisory, role. The school serves a suburbian Washington area whose population is projected to exceed 2.5 million by 1972.[2]

The school represents a rather unique institution for, from its inception as a community college, it has attempted to use sophisticated management and financial techniques. Much of this can be attributed to the advisory board which is made up of local leaders of the supporting counties and cities representing business and government as well as educational backgrounds. In addition, though not materially effecting this study, it should be noted that the school is an exception

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[1]Robert I. McKee and Kathryn Jane Ripley, The Evaluation of "Pert" as a Planning Tool for Educators (Bailey's Cross Roads, Virginia: Northern Virginia Technical College, 1966), p. 9. Italics mine.

[2]Ibid. For detailed projections see: The Two Year College in Virginia, op. cit. passim. This is one of the few studies sampled that included economic conditions in alternative projections of population and enrollment.

to the standard in Virginia in that the master plan and appropriate financial programs were complete prior to being integrated into the state system. In this respect the bulk of the programs have remained under local control as long as "they do not conflict with those of the state board".[1]

The local board recognized the need for sound financial planning and two of the first three committees appointed were directly involved in establishing resources management: Operational Budget and Personnel Committee and the Sites and Capital Budget Committee. (The third was Curriculum and Community Relations.)[2] The school also took official note of its responsiveness to local conditions and stated:

> (the school is) . . . a college devoted to serving its community, is aware of and responsive to the requirements of industry and business.[3]

Prior to opening, the college had developed a ten year master plan which included detailed financial analysis of the first five years. This plan is updated annually and is an invaluable aid in directing the course of the college. It contains detailed break down of cost factors including long range projections of costs per student per function, facilities constraints to handle peaks student loads and a provision for es-

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[1]Personal interview with Robert Q. Grider, Business Manager, Northern Virginia Community College, March 1, 1967.

[2]Robert L. McKee, op. cit., p. 9.

[3]Northern Virginia Community College Catalog, 1966-67 (Bailey's Cross Roads, Virginia: Northern Virginia Community College, 1966), p. 9.

calating costs both for qualitative improvement and inflation. This last item is one of the most urgently required and least utilized techniques in any college budget projection.[1] The 1966-1967 budget calls for an outlay of fifteen million dollars, all but 2.350 million of which will be allocated to the construction of the new campus.

One of the most unusual features of the college is a lay advisory committee which conducts a cost/benefit analysis of each course offered and submits its evaluation to the governing board of trustees. These recommendations are not mandatory but they have helped curb the uneconomic proliferation of courses plaguing other community colleges.

The relative sophistication of the management of the school and the benefits that can be obtained by utilizing advanced techniques is best illustrated by the use of PERT[2] in the planning for the transition from technical school to community college. This was accomplished under a grant from the Office of Education. While the study was not in depth nor was the application of PERT total, some indication of the effectiveness of such a system is demonstrated that the school went from "having no staff, no telephone, no equipment, no

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[1]An exact method of accomplishing this is cash discounting. See page 110.

[2]Robert L. McKee, op. cit., p. a. PERT is the acronym for Program Evaluation Review Technique. An excellent explanation of its use is given in ———PERT Lesson Handbook for Technicians. (Washington: Department of the Navy, Bureau of Naval Weapons, 1964). A similar technique is the Critical Path Method. See page 112.

buildings or land, no program, no students and brand new local and state boards to opening in temporary quarters in exactly 100 days![1] It should be added that the opening was extremely successful.

The continued success of the Northern Virginia Community College is almost assured for, unlike many comparable schools, the administration has elected to utilize the concepts and techniques of advanced management which will enable them to maintain flexibility in the face of changing conditions while carefully evaluating the total impact of each change.

As a new school it started off with a progressive outlook. While further refinements in technique will undoubtedly be adopted in the future, and new concepts added, it has already demonstrated the ability to make rational, logical and comprehensive decisions for its future course.

The Columbiana Community College. In marked contrast is the proposed but presently moribund Columbiana (Ohio) Community College.[2] A rarity among public junior colleges, it was unsuccessful even during a time of unparalleled prosperity.

Columbiana County is located in the extreme south easter section of Ohio bordering on Pennsylvania and West Virginia

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[1]Robert L. McNee, op. cit., p. 11.

[2]Unless otherwise indicated, all information in the description of the college is extracted from: Board of Trustees, Columbiana County, Revised Official Plan for Columbiana College (Lisbon, Ohio, Columbiana County Community College District, April 5, 1966) which was submitted to the Ohio Board of Regents in April, 1966.

and is culturally closely associated with the Appalachia region, with which it was included in federal assistance programs. It is a predominately rural area with a lower than average standing in just about all indicators of demography and economic base. It is a chronic "exporter" of its youth to other areas and is characterized by being a continuously depressed area. In this respect, and from an ethical and democratic standpoint, it was an ideal location for a community college as long as heavy emphasis was not placed on local funds.

In 1965 a college district was created by the County Commissioners for the expressed purpose of establishing a community college. Under the legislative acts of Ohio, it would have been a relatively independent institution only loosely controlled by the state Board of Regents, though state funds for assistance would be funneled through the Board. A board of trustees was named and two individual consultants retained who were heavily committed to positions other than Columbiana County.[1] Three citizen committees were organized to study the desirability of a junior college and were divided into three primary areas of inquiry: history and growth patterns within the

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[1]Dr. Raymond Young, Professor of Higher Education and Director of the Community and Junior College Administrative Institute, The University of Michigan and Dr. Max J. Lerner, President of the Lorain County (Ohio) Community College. While there is no question as to the qualifications and expertise of these consultants, there is a question as to how much time they could devote to the planning of the college. No other consultants were retained.

the county; a survey of local high school students' plans after graduation[1]; and the needs of local industry as determined by interviews with leaders of the business community. In this they followed the outline required by state law; but it cannot be overlooked that there was no organized effort, either among the committees or the trustees, to make other than the most superficial analysis of the financial implications of creating a college.

Early in 1966 a preliminary report was submitted to the Ohio Board of Regents and was followed by a revised official plan in April of the same year. Monies were appropriated by the state legislature but the college failed to materialize. Many reasons are given for the failure, but the most common one is "politics and divided support".[2] Moreover, when compared to other community colleges which have been successfully organized, it becomes apparent that even if the stated reasons did not exist, the Columbiana college would have been in serious difficulty from the time it opened.

Some indication of the planning that went into the official report is illustrated by the following items:

The report was over 160 pages long, including five pages

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[1]The use of surveys of high school students as the major source of enrollment projections is open to serious question. The expressed desires of a high school senior and his actual actions may vary in considerable degree. Most private research organizations utilize a number of inputs for enrollment projections.

[2]Letter to author from Mr. Floyd Lower, Chairman of the County Committee on Higher Education in Columbiana County, October 25, 1966.

of transcripts of comments by citizens in a public hearing--they were unanimously in favor of the college and only one raised a question as to the basis of the projections--yet the entire financial plan was contained in four short pages, two of which were allocated to aggregate budgets for the 1967-68 and 1968-69 academic year operating funds.

The operating budget for 1968 was based on 500 FTE enrollment, although projections utilized earlier in the report indicated an FTE of 825.

Income from endowment was estimated to be $1000 per year. In the duties spelled out for the administrative officers there was no provision for endowment management. (Nationally, if the southwestern states are eliminated, in 1964 endowment earnings contributed 00.009 percent of operating income for public junior colleges in the United States.[1]) The basis for the expectation of this amount of income appears to be an unrealistically optimistic estimate by the trustees.

The two operating budgets submitted were in aggregate sums only but were <u>identical in every respect</u> even though enrollment was estimated to increase, not to mention increased activity in other areas.

The average cost per student FTE was based on a 1964 estimate for the State of Illinois.

In one instance the planning <u>was</u> exact. The College Comptroller was also to be the Dean of the Evening School.

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[1]<u>Financial Statistics of Higher Education</u>, <u>op. cit.</u>, p. 104.

Among the forty five specific duties for him and his office, which were spelled out in detail, were included,

> (He) . . . takes the mail frequently. Sometimes it is necessary to go to the post office during the day to take films or items that need insurance or registration. On occasion when mail load is light, secretaries will be asked to mail it.[1]

The comptroller also prepared the annual budget.

The President, within his fifty one enumerated duties, prepared long range enrollment projections--but no one was required to prepare a long range budget or, for that matter, one that was further in advance than the next fiscal year. The state maintains a six year master plan but it is not translated into financial terms until the annual increment is submitted to the legislature for appropriation action.[2]

Obviously the plan, as submitted, was practically useless. But it must be remembered that it was prepared in the format required by the state Board of Regents and represented a diligent and honest, if misguided, effort on the part of the local trustees. It is a rather unfortunate commentary on the planning that is all too common in many community colleges. In some respects enthusiasm has overcome logic. A community college can become a political status symbol reminiscent of the canal building era of the 1840's, eagerly sought, avidly constructed but devoid of any economic rationality and soon to fall into disuse.

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[1] Revised Official Plan, op. cit., item 25, p. 94.

[2] Letter to the author from William B. Coulter, Program Officer, Ohio Board of Regents, January 25, 1967.

The composite community college

The Composite Community College (CCC) is an economical model based on all research for this paper and not specifically on the three case studies previously discussed. It is typical of many community colleges. Individual techniques are identified only if they are pertinent to the model. No attempt is made to correlate CCC with any individual school.

CCC is a city controlled school located in a moderately sized (300,000) city and, other than a long established private liberal arts college, is the only institution of higher education in the immediate area. It was chartered in 1962 and opened that fall with an initial enrollment of 300 FTE and a total of 1700 students, approximately 50 percent of which went to evening classes.[1] Since that time enrollment has consistently exceeded projections. For the spring semester in 1967 it was reached 2900 FTE and a total student body of 4000.[2] Much of this growth was attributed to the lack of other facilities in the area and the broad spectrum of courses offered by CCC.

The campus was originally planned in phases by a local architectural firm which is still retained, executing plans

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[1] The Legislative Master Plan for the Development of Public Higher Education in Ohio utilizes a 40 percent full time, 60 percent part time formula with 50 percent of the part time attending evening classes to determine projected enrollment.

[2] One of the few schools to publish the results of their previous estimates is the Florida Keys Junior College. For the first five years they were continuously on the low side until additional factors were added in the projections. See: James T. Strawbridge, et. al., Florida Keys Junior College Facilities Survey, November, 1966 (Tallahassee, State Superintendent of Education, 1966), p. 4.

for all proposed buildings. The third increment of construction, which included a new administration building and a science laboratory, was completed in the spring of 1966 at a cost of over 2.5 million dollars.

The college operates under the direction of a local board of trustees appointed by the city council for five year staggered terms. The board is responsible to the State Board of Education for the academic standards of the school, but otherwise is autonomous. State funds for capital expenditures are provided by a formula depending on the size of the institution. CCC qualifies for one half the cost of construction to be borne by the state.[1] The rest will be provided by an appropriation from the city council.

An additional requirement by the state is that a survey by a state team of researchers is made periodically to determine if state standards are being met and to assist in the planning of new facilities. The recommendations of the team are not mandatory, but have always been accepted in the past.[2] A survey team had completed a study six months ago and concluded that new class room space would have to be constructed to

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[1]This is similar to the system utilized in Texas. For an indication of the variety of methods adopted by the states to provide funds to colleges see: Jesse P. Bogue, Methods of Financing Junior Colleges in Other States, an unpublished report to the American Association of Junior Colleges, 1958.

[2]This system is utilized in Florida. From a letter to the author by James L. Wattenbarger, Director, Division of Community Junior Colleges, Florida Department of Education, January 10, 1967.

meet the incoming students for the fall semester of 1968. Their report was in the hands of the board of trustees.

In addition, an updated projection of enrollment had been completed by a joint committee of the college, the local district school board and the Chamber of Commerce for the city. The cost had been borne by the Chamber of Commerce. The results are shown in Figure 12.

Fig. 12

CCC Enrollment Projections

(Fall Semester)

	Total	FTE	Peak[2]
1967[1]	4400	2800	2600
1968	5000	3000	2800
1969	5800	4200	3300
1970	6300	5000	4400
1971	7000	6000	5300
1972	8000	6500	5800
1973	9000	7300	6900
1974	10000	8000	7800

[1]Actual count

[2]Maximum number in class at any one time

The supervising architect had drawn up plans for a class room building which would increase the peak load capacity by 2500 and would suffice for the expected enrollment through 1971. At that time he proposed to construct a similar building with the same capacity. He had prepared an alternate construction schedule calling for a single large class room

complex with sufficient space for 5,000 students. The estimated cost for the smaller building was $1,000,000 for the first one and $1,100,000 for the second one, which represented increased costs from inflation. The cost of the single large building was estimated to be $1,900,000. In both cases the total square footage when completed would be the same. Cost per square foot of gross space was estimated to be $25.00 for the first increment of the two building plan, $27.50 for the second increment and $23.75 if the single large building was built.[1]

The board of trustees met to decide which of the alternatives should be adopted. They all felt that some decision would have to be made soon if the request for state funds was to be prepared and approval in time to start the construction. The business manager estimated that it would take only a week to develop the information required for the application, but the state would need at least four months for study and approval prior to submitting the request to the legislature. Once approved by the Board of Regents a tentative "go-ahead" was given, though actual funds were not appropriated until July 1. After approval, bids had to be let, detailed drawings furnished by the architect and construction completed--all of which meant

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[1]These costs were developed from formulas utilized by Illinois. See: Physical Facilities, Report of the Master Plan Committee, 1. (Springfield: State of Illinois Board of Education, 1963), p. 5. Gross square footage of recent construction ranged from $16.89 to $34.56 per square foot. In an effort to keep the figures manageable, all aggregate amounts are scaled at approximately ten cents to the dollar.

that it would take at least eighteen months from the time the decision was made until the class rooms were ready for use. September 1968 was just eighteen months away.

The members of the board were divided. Those that opted for the single larger building pointed out that, even though it would not be fully utilized for five years, it would still cost less per square foot than the two smaller buildings. The proponents of the two stage construction countered that the enrollment estimates had been wrong in the past and there was no guarantee that they would be correct this time. They felt that there was no reason to hurry on the decision as there was sufficient time to decide when to build the second building.

One member of the board requested information on the funds to pay for the additional instructors that would be required. The business manager pointed out that those funds came from a separate account and were based on a flat fee from the state with the rest made up of appropriations from the city council tax revenues. He had not prepared estimates since no action would be needed until the summer of 1968.

Another member commented on the extra $100,000 added by the architect for inflation. The business manager said that this was common among architects, but it was against normal accounting procedure and the books would carry the added cost as a "qualitative" improvement over the first building.

The meeting continued the rest of the day with the

discussion centering on the lower cost per square foot for the large building versus the flexibility of the two smaller buildings. Late in the evening a vote was taken. The result was 6-3 in favor of the single building. The business manager was directed to draw up the appropriate request for state funds.

CHAPTER SIX

FINANCIAL MANAGEMENT TECHNIQUES AND CONCEPTS:

A SHORT DESCRIPTION

Planning, Programming and Budgeting System. CCC, like many comparable institutions, feels complacent for it has developed what is termed a master plan. However, careful consideration must be given to just what information is contained in it, and more importantly, that which is not. It is, in actuality, an architectual plan and the difference between this and a true master plan is significant. While their plan includes the design of individual buildings and the relationships of the units on the campus, and even groups construction into phases with aggregate costs attached, it is hardly comprehensive. A college is no more made up of buildings alone than it is of instructors without students. An architectual plan ignores that a building will directly effect, and be effected by, all functions of the school, from additional maintenance and utilities required, to more instructors and text books for the increased student capacity. In other words, what is usually held up as a master plan, in reality, is only the construction portion of such a design; and while the importance of physical facilities cannot be minimized, it is but a single part of all that is required.

One method of integrating all the factors of a true master plan into a single analysis is a Planning, Programming, Budgeting System, more commonly referred to as PPBS or simply "program budgeting"---though the latter only emphasizes the final portion of the system and is open to serious misconception. PPBS is one of the most misunderstood, and thus controversial, systems for decision making. It received its first major definitive study in 1964 by David Novick of the RAND Corporation, a U.S. Government "think factory".[1] This was followed a year later by a comprehensive though hypothetical demonstration of its application by Charles J. Hitch and Roland N. McKean.[2] Hitch was later appointed Assistant Secretary of Defense (Comptroller) and McKean continued to write on the subject for RAND.

Elements of program budgeting, or PPBS, had long been used in the Department of Defense for establishing the future course of action, but these two books were the first to be widely circulated which fully explained the system. As noted earlier in this paper, PPBS has now become mandatory for all departments of the federal government. In addition, numerous local governmental agencies have begun to install the system and private business utilizes many of its concepts with a modified format. It is also the basis on which Tickton calls for a ten year budget.

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[1]See: David Novick (ed.), Program Budgeting (Washington: U.S. Government Printing Office, 1964).

[2]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age (Cambridge: Harvard University Press, 1965) also (New York: Atheneum, 1965).

There have been some highly vocal critics, as well as proponents of the system that have been less than open minded in their discussions of it. It is well to remember that neither the designers of PPBS nor the authors mentioned ever claimed that it would be a panacea for all fiscal ills; nor did they intend that it would supplement judgemental decision making--though both characteristics have been attributed to the system at one time or another. McKean wrote a memorandum which cautioned against total reliance on PPBS,[1] and pointed out that while the system was a great improvement over past ones, it too had limitations.

PPBS attempts to isolate an objective of resource allocation and to include all the elements contributing to the achievement of the objective, regardless of function, into a comprehensive package presented over an extended time period. It places heavy emphasis on the presentation of alternative methods of reaching the chosen goal and demands a maximum effort to quantify and thus make comparable the relative inputs and outputs necessary. It gives information to sharpen the ability of the decision maker but, in itself, is neutral and makes no choice. Novick states the purpose this way:

> Planning, programming, and budgeting constitute the process by which objectives and resources, and the interrelations among them, are taken into account to achieve a coherent and comprehensive program of action for the government as a whole. Pro-

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[1] Roland N. McKean and Melvin Anshen, Problems, Limitations and Risks of the Program Select (Santa Monica, California: The RAND Corporation, 1963).

> gram budgeting involves the use of analytical techniques that facilitate explicit consideration of the pursuit of policy objectives in terms of their economic costs, both at the present time and in the future.[1]

Obviously the first step for any college is to determine just what are the school's objectives: what is it that is is attempting to do? The question is so basic that it should be axiomatic that every administrator and educator has resolved it; and yet it would appear that few have undertaken the stringent intellectual discipline required to determine it.[2] In 1902 Henry C. King of Oberlin (Ohio) College posed the question by asking his faculty what "right" did they have to hold the title of college. A study resulted which took five years to complete, but out of it emerged a goal, an objective for the school.[3] Williams in his book Planning for Effective Resource Allocation in Universities takes a more pragmatic approach.

> Planning in a university is a process that establishes the university's objectives as a member of the academic and democratic communities. Planning is often construed as an extremely long range and somewhat abstract conceptualization of

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[1] Novick, Program Budgeting, op. cit., p. 2.

[2] The controversy within the junior college movement and within a single school as to the relative emphasis of transfer and terminal courses is indicative of the lack of clear cut goals. During interviews for this paper the question "What is the objective of your school?" was asked of each interviewee. The answers were varied. All but one expressed a personal opinion as the question had never been resolved by the institution as a whole. The one exception was the Northern Virginia Community College.

[3] Thomas H. Hawkins, College and University Administration (New York: The Center for Applied Research in Education, Inc., 1966), p. 104.

> the basic thrust of the university. It is true that planning can be a somewhat esoteric and abstract process. A proper planning process, however, is one which will induce virtually every member of the faculty and administration . . . to ask some basic questions along the following lines:
>
> Why does this college or university exist and for what purposes was it established?
>
> To what extent have these purposes been achieved?[1]

Williams continues with the list of searching questions and demonstrates that they can be stated in fairly concrete terms by translating them to a hypothetical situation:

> The university will serve undergraduate, graduate and public service requirements in a ratio of effort approximating 5:2:1.[2]
>
> Total enrollment will be expanded to a level of 10,000 students over the next ten years.[3]

The second step in PPBS is taking the objective and breaking it down into incremental units for each decision making period. This normally is annual, but were it not for the interface with external systems which are predominately on a fiscal or calendar year, be just as easily incremental increases in student body, or any other measure which accurately indicates organizational activity. It then projects these incremental units into the future--or back to the present as the

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[1]Williams, op. cit., p. 34.

[2]This is comparable with the terminal, transfer and public functions of a community college.

[3]Williams, op. cit., p. 35.

cause may be—as far as practicable. For such organizations utilizing PPBS, future projections are limited to approximately ten years. Though studies of possible courses of action further in the future are undertaken, they are not normally considered as inputs to the system. The result is that a ten year plan is constructed with the major sub-objectives outlined for each period.

Projections or plans five years in the future take on an added dimension. For the first time the inputs required for the desired objectives are converted into the only common denominator available, the dollar value of the resources to be consumed. These estimates undergo continuing refinement as the annual period comes closer to the present time.

The final stage is a conversion of the incremental objectives of a period, with the quantified inputs and outputs established in exact sums, into an annual budget. Were it not for the determined insistence of all legislatures on an annual budget, this last step would be unnecessary and funds could be appropriated by objective over a longer period of time. Realistically, the annual budget for governmental agencies is not likely to be replaced in the foreseeable future.

A plan covers the period up to ten years in the future. A program is that portion of the plan up to five years ahead and has costs spelled out. A budget is the final year and represents that part of the plan and program occurring at present—thus the planning, programming and budgeting system.

There is also a vertical segregation within PPBS and it

is this departure from the traditional line item budget that presents the most drastic break from traditional techniques. Items of expenditure are not listed in conglomerates by type but rather all types of items contributing to an objective, or portion of the objective, are grouped together. Thus, if the objective were to be the strengthening of the physical education department, the cost of the added instructors, new facilities and increased maintenance on the athletic fields would be listed as an entity; rather than, as an example, the salaries of the new instructors being included with the salaries of all other instructors in the college regardless of their department.

The most common misunderstanding of the PPBS system is the assumption that plans ten or more years in the future are translated into detailed cost estimates. Nothing could be more misleading and more likely to be inaccurate. It is patently obvious that exact cost/benefit relationships cannot be given far into the future--to do so would be to attribute powers to financial managers which they do not, nor claim to have. None credit themselves with clairvoyance. What is required, however, is that the closer the time is to implementing an objective, the greater the detail that can and should be developed.

A comparable analogy would be an automobile trip from Washington to Los Angeles. On leaving, the driver would have an objective determined (his destination) and only know that he would pass through the mountain states. But closer to

his starting point, he would have determined that he would cross Indiana and Illinois, and in the near future would be required to take Route 895 through Maryland. In the real time of his trip, he would be concerned about the speed limit and traffic on his immediate section of highway. As he progressed across the nation he would be continually adding more specific detail to that section of travel closest to him. So it is with PPBS.

Cash Flow Discounting. While PPBS enables the academic administrator to project and analyze future cost/benefit relationships, this very ability creates problems that did not exist under the traditional ad hoc methods. Since the inputs and outputs are, as far as possible, reduced to a dollar value, any future data must presuppose a constant value dollar. This has not been, is not, nor is it likely to be the case. The effect of inflation continues to plague long range planners. As noted earlier, an expanding economy has become an item of national faith and much of the policy of the federal government is directed at maintaining this growth. With full employment there is a collateral controlled but gradual inflation.[1] Some economists argue that not only is this not necessarily an evil, but in the long run achieves benefits impossible with static prices.[2] The accounting profession has been reluctant to make any allowance for inflation within the

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[1]Paul A. Samuelson, Economics (6th ed.; New York: McGraw Hill Book Co., 1964), p. 771.

[2]Ibid.

"normally accepted accounting principles". Thus the financial administrators are faced with a dilemma. They must deal with costs spread over varying time frames in the future, can reasonably expect the value of a dollar to decrease, and yet have difficulty accommodating these factors into the present accounting structure.

Fortunately there is a method whereby the problem can be solved, not only conceptually, but by an extremely simple technique. In modern corporate business, future costs and incomes are treated as if they were received today and discounted at an agreed upon rate over the future years until such time as their use is planned.[1]

Funds committed to future projects are withheld from profit (or interest) producing projects and their value is proportionally reduced. Conversely, funds received in the future have an increased value. The result is a "discounted cash flow" which makes resources utilized over various periods of time comparable.[2]

Though not designed to counter the effects of inflation, discounting is very applicable. As long as it is not utilized for those public statements required by law it is within the accepted standards of accounting practice.

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[1]Robert N. Anthony, Management Accounting (3rd. ed.; Homewood, Illinois, Richard D. Irwin, Inc., 1964), p. 611-638. Discount tables are just the opposite of interest tables and are readily available.

[2]Ibid., p. 561-570.

Thus, in a college, once agreement is reached on the rate of inflation to be utilized, all costs and benefits can be discounted to a single point of time and then compared. The obvious criticism of this method is that the rate of inflation cannot be predicted; however, discounting falls into the category that any rate is better than none at all. The academic community does not lack for those who would estimate the increased cost of education in the future and it becomes a matter of terminology. The political realities of asking voters to approve a bond issue, as an example, based on present costs and in the future being forced to modify the academic program because of increased costs, versus the greater amount of funds required at present and the attendant reduction in voter approval, can not be taken lightly. However, it appears that a candid appraisal of actual costs coupled with extensive public information programs in the long run will prove to be the most beneficial.

While many financial managers violently object to discounting for inflation, there is no evidence that the basic assumption that costs will continue to increase is not valid. The advantages to be gained by it are considerable and, we feel, well worth the effort.

Critical Path Method. The Critical Path Method, like PERT[1]

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[1]For an explanation of the difference as applied to academic financial management see: Robert L. McKee, op. cit., Appendix C.

is a modern decision making tool which finds wide application in business and government and which offers the educational administrator an invaluable tool in coordinating the multifarious activities within a college. CPM is but one of several methods of determining which activities contributing toward an objective are critical to the timely completion of the total project. It enables the administrator to concentrate his efforts on those items which most directly effect the outcome. It is:

> . . . a powerful but basically simple technique for analyzing, planning and scheduling large, complex projects. In essence, the tool provides a means of determining (1) which jobs or activities, of the many that comprise a project, are "critical" in their effect on total project time, and (2) how best to schedule all jobs in the project in order to meet a target date at minimum cost. Widely diverse kinds of projects lend themselves to analysis by CPM.[1]

CPM is typically a graphic presentation of each task required outlined sequentially and in technological order, (i.e. no job appears on the chart until all of its predecessors have been listed.) To each symbolic representation of a task there is attached identifying codes and the time required to complete the task. Tasks are then connected by a series of arrows or lines (or as one author states "within a network")[2] indicating the order in which the steps must be completed, be

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[1]Ferdinand K. Levy, Gerald L. Thompson, and Jerome D. Wiest, "The ABC"s of the Critical Path Method," Contemporary Issues in Cost Accounting (Boston: Houghton Mifflin Co., 1966), p. 352.

[2]Anthony, op. cit., p. 682-686.

they concurrent or progressively interdependent. The shortest time along the interconnecting lines thus becomes the least possible length of time required to complete the project and serves to identify possible "bottle necks".[1] It is to this critical path that the administrator must turn his attention if the elapsed period from start to finish is to be reduced. If his efforts are successful and the critical path is reduced, the next shortest time becomes the critical path. The process can continue until there is an irreducable path which then represents the least time required to achieve the objective under the present conditions. The method appears deceptively simple for it would seem that managers intuitively have long utilized this process.[2] This may be so, but by depending on intuition he has become involved in a "fire brigade" effort, constantly confronted with crises and forced to cope with them as they occur. CPM represents a logical and rational plan BEFORE the project is undertaken and highlights just which items of the entire plan can become critical and enables their identification and correction prior to becoming a crises.

An additional advantage of CPM or any other similar system is that "the user is required to give considerable attention to planning and scheduling which yield a return which is independent of the . . . technique".[3] Also, due to its essential

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[1]Cost and cost versus time factors as well as probability can be added to the time notations.

[2]CPM was developed in its present form less than ten years ago.

[3]Ferdinand K. Levy, op. cit., p. 352.

illustrative nature and the ease with which the interrelationships of the tasks can be discussed, CPM represents an ideal method of communication with all levels of the management. The only mystery in the system is why it was not formulated sooner and why more organizations do not depend on it. The basic essentials of the method can be taught to anyone within, literally, a matter of hours.

Return on Investment. While each of the three methods for financial management discussed so far has dealt with a specific problem area, return on investment encompasses the entire rationale of any organization, private or public, profit or non-profit. It is not a methodology as such, though in actual application it becomes one, but is directed at the very basic question of what resources are required to achieve the objective desired; or conversely, what is it that is achieved with the resources allocated. It is a concept that demands a measurement of the relationship between inputs and outputs. Though the development of ROI, as it is commonly abbreviated, is commonly attributed to the General Motors Corporation, it was first utilized by the E. I. du Pont de Nemours and Company.[1] The linking of ROI and General Motors is largely the result of the emphasis placed on it by Alfred P. Sloan in what was to become a classic book in the literature of financial management and

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[1] William Thevers Jerome III, "Return-on-Operative-Investment—The Du Pont Approach," Management Control Systems, ed. Robert N. Anthony, John Dearden and Richard F. Vancil (Homewood, Illinois: Richard D. Irwin, Inc., 1965), p. 601.

business administration, My Years With General Motors.[1] ROI has been adopted as a primary management technique by a number of major corporations in the United States, though the successful application of concept has not been guaranteed. It is more applicable to academic institutions than to some business corporations that have attempted it because a college normally stands as an independent entity--a vital requirement for ROI.

The first part of any ROI formula is a relatively simple matter to most colleges. A determination must be made of just what resources are invested in the organization. If nothing else, most schools can produce a current budget; and as far as operations and maintenance costs, this becomes an accurate input. The measurement of output is, of course, more difficult. Of all the criteria proposed that which appears to be the most accurate and the most easily prepared is the number of student instructional hours.[2] There is no pressing need to equate a dollar value with these hours--and it would be almost impossible if attempted--for they in themselves are a quantifiable end product. (The quality of the instruction is entirely another matter.) Thus if a school were to take each category of current expenditure and divide it into the total

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[1]Alfred P. Sloan, Jr., My Years With General Motors (New York: Macfadden-Bartell Corp., 1965), pp. 49-50, 140-143, and 144-148.

[2]One student receiving one hour of instruction. Another common measurement is "student station" which is one student in a single class period--an invaluable aid in determining peak student loads and thus facility constraints. See Physical Facilities, op. cit., passim.

number of instructional hours provided the students, the cost per hour for each category can be computed. This is not a solitary, sterile amount, but one against which others may be compared. As an example, if instructor salaries invested realized a rate of return of one student hour per dollar in 1966, but the amount rose to $1.50 the next year, it is obvious that a change has occured. This might well have been a result of a preplanned action; but if not, it will alert the administration that costs are out of line with past experience. Likewise, among institutions, if administrative costs per student instructional hour are consistently higher in one college than another, obviously something is not being done the same and it behooves the administration of the high cost institution to investigate the cause and, if possible, correct it.

If required, most institutions could provide this type of information today, though it might require a massive clerical effort if their accounts were set up on traditional lines and no automated data system was utilized. It is also possible that academic administrators would raise questions about the worth of such an analysis and protest the additional effort required. Yet this is the type of information presently required by the federal government in conjuntion with its support in other activities.

Capital expenditures create an entirely different problem. Are the costs of a new building to be charged against the students attending school the year the expenditures are made? Hardly! One popular solution is not including capital costs

when comparing the cost of student education. However, this solution is gained only by ignoring the problem. Capital expenditures are a significant portion of the cost of education and while the administrator of a college may choose to ignore them, it is doubtful if the federal government will, particularly since these capital costs can be equitably allocated to student load. The method utilized for this allocation, which is required before return on investment can be intelligently applied, is nothing more than depreciation.[1] The very term raises objections among some academic administrators.[2] It is often associated with, somehow, setting money aside for eventual replacement of the capital item. This is not the case. Depreciation is a method of spreading the cost of a long lived capital item over a period of time equivalent to its contribution to the return. It involves no dollar bills hidden in a safe, no savings account pass books and no special accounts for hoarding the funds. It is an administrative technique of the financial manager. It is strictly a paper work transaction; but it does provide the method for determining the total cost of any operation, not just those costs commonly grouped under current expenditures. Each capital item must have its economic life determined. For a class room building this could be

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[1]The federal government, due to its peculiar funding system, does not at present utilize depreciation for its own assets. There is, however, a strong movement underway to adopt depreciation particularly for buildings and equipment.

[2]Of all the administrators interviewed, none utilized depreciation, although Montgomery Junior College was proposing its adoption.

forty years, as an example; for a laboratory, since it is much more subject to obsolescence, thirty years. This does not imply that at the end of the forty years all class room buildings will collapse, nor that it would be economical to tear them down after that period. What it does state is that the costs of the construction will be allocated to the students over a period of time equalling forty years.

With costs allocated into the future and student instructional hours utilized as a measure of return, annual comparisons can be made for ROI and it becomes a valid, useful concept and technique. The total cost is included, not just annual operations and maintenance and an accurate measure of return on investment is possible and subject to financial analysis.

A DEMONSTRATION OF THEIR APPLICATION

If the board of trustees of CCC has been operating with sophisticated financial management, the decision on the construction of the additional class room buildings would have been based on quite different information than that which was presented. First, a definite objective of the college would have been previously stated and the elements of the decision weighed against their contribution to that goal. In this case, the objective might well have been synonymous with the projected enrollment of CCC, including total student load, FTE students, and maximum number on campus at any one time. This objective would have been further refined to forecast the expected mix

of terminal and transfer courses, day and evening students and would have been based, ideally, on a combination of surveys including at least one by an organization external to the college or interested parties to insure complete objectivity.[1]

This would be the starting point for planning. The number of students each year and the required student instructional hours would serve as a measureable output. This output would be further converted into an input required, including facilities, equipment, instructors, administration and ancillary functions. The portion of planning that occurred in 1972 would be the program furthest into the future to have an actual cost attached to the inputs. As part of this program, construction of additional class room buildings would be a sub-element. The trustees could then compare the decision they were facing, not only with the total progress and expansion of the school, but with the relative cost and output data for all the factors that would be influenced by their decision.

If the critical path method had been incorporated into the plans of CCC, the trustees would have been aware that, not only was the decision to build additional class room buildings required immediately, but that recruiting of new instructors for the increased student body would have to begin in the very near future. And the school translated their programs and plans

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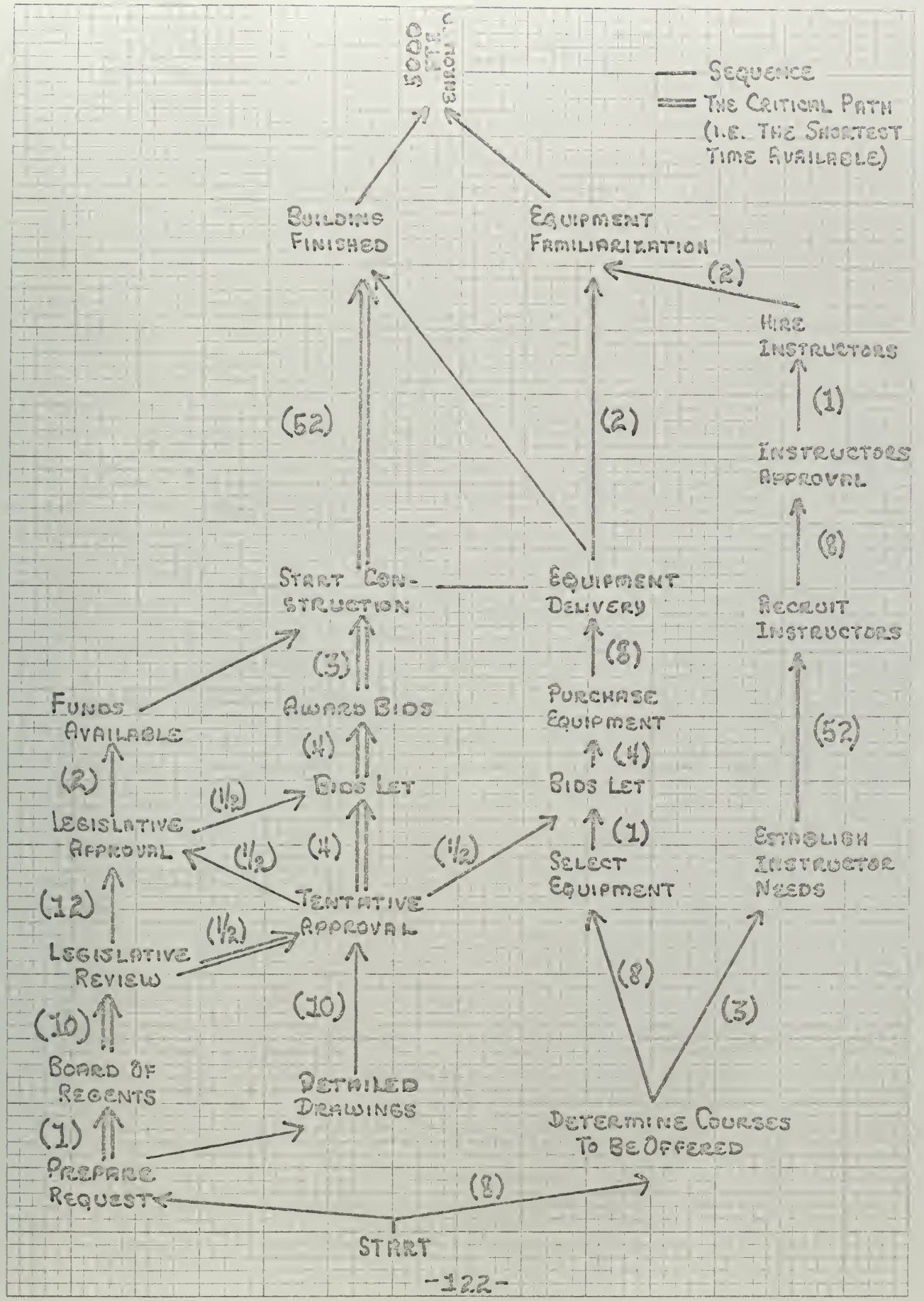
[1]The State of Washington has utilized a combination of internal and external forecasts with good success. See: Arthur D. Little, Inc., A Policy Plan for Community College Education In the State of Washington (Chicago: Arthur D. Little, Inc., 1966), p. 20.

into a CPM display, the necessity of a decision on new class rooms would have become apparent even earlier and the trustees would have known in sufficient time to conduct a thorough study of the alternatives. The decision to build is only one of the many that must be made in the future to ensure the success of the expanded facilities. Though a highly abbreviated example, Figure Fourteen is an example of the CPM network surrounding the present decision.

While PPBS and CPM would have assisted the trustees in establishing the required sequence and interrelationships necessary in the construction of new class room space, discounting and ROI would have given them more exact information as to the relative costs of the two alternatives.

By allocating the cost of the building over its economic life, and discounting each of these costs back to the time the expenditure is actually made, the present value of the resources consumed each year can be calculated. This annual discounted cost is then compared with student instructional hours or, as in the example presented, full time equivalent. (Hours are a more accurate measure, but for simplicity, FTE results in an adequate measurement since it is a uniform number of credit hours. In the example it is assumed that there is a direct relationship between credit and class room hours.)

The formula can be stated mathematically by summing the discounted depreciation for each year and dividing this total by the number of FTE utilizing the new building. The formula is:


GOOD STUDENT ENROLLMENT
SEQUENCE
THE CRITICAL PATH (I.E. THE SHORTEST TIME AVAILABLE)
BUILDING FINISHED
EQUIPMENT FAMILIARIZATION
(2)
HIRE INSTRUCTORS
(1)
INSTRUCTORS APPROVAL
(8)
RECRUIT INSTRUCTORS
(52)
ESTABLISH INSTRUCTOR NEEDS
(52)
(2)
START CONSTRUCTION
EQUIPMENT DELIVERY
(8)
PURCHASE EQUIPMENT
(4)
BIDS LET
(1)
SELECT EQUIPMENT
(8)
(3)
DETERMINE COURSES TO BE OFFERED
(3)
AWARD BIDS
(4)
BIDS LET
(1/2)
(4)
(1/2)
TENTATIVE APPROVAL
(1/2)
(10)
DETAILED DRAWINGS
FUNDS AVAILABLE
(2)
LEGISLATIVE APPROVAL
(12)
LEGISLATIVE REVIEW
(10)
BOARD OF REGENTS
(1)
PREPARE REQUEST
(8)
START

$$\frac{\sum \left(\frac{T}{n}\right) d}{\sum S} = \text{average cost per FTE per year during the economic life of the building.}$$

In this case "T" equals the total cost of the building, "n" the economic life in years, "d" the agreed upon discount rate for inflation, and "S" the number of FTE for each individual year.

If CCC had utilized this formula, utilizing a forty year economic life and a three percent per annum discount rate and had made the assumption that the old buildings were utilized at capacity prior to any classes being held in the new ones,[1] the trustees would have discovered that it would have cost an average of $12.74 per student per year for the two building plan as against $15.36 per student for the single large building. The costs for individual years under the alternative proposals are given in Figure Fifteen. Since there is an absolute constraint on student utilization (the capacity of the building) once that limit is reached any further variation will be the result of discounting alone and will be of limited proportion. The critical period is that up to the time the building is used to capacity. A graphic presentation of the relative costs per year is given in Figure Sixteen, where it becomes apparent that while the second building of the two building plan imposes an increase in costs per FTE it is not enough to offset the extremely high costs during the first years of a single large class room building. The difference is significant.

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[1]Any decrease in costs gained by using the new building for classes that could be accomodated by the old is offset by the increased cost of the classes in the older buildings.

Fig. 15

Cost Analysis of Alternative Proposals

YEAR	DEPRECIA-TION	DISCOUNT	COST	STUDENT OUTPUT (FTE)	COST PER FTE
			Single Building		
1969	$47,500	1.0000	$47,500	500	$95.00
1970	"	.9708	46,113	1600	28.83
1971	"	.9425	44,763	2500	17.91
1972	"	.9151	43,467	3000	14.49
1973	"	.8884	42,199	4100	10.39
1974	"	.8626	40,973	5000	8.19
			Two Stage Plan		
1969	$25,000	1.0000	$25,000	500	$50.00
1970	"	.9708	24,271	1600	15.17
1971	"	.9425	23,562	2500	9.42
1972	52,500	.9151	48,019	3000	29.43
1973	"	.8884	46,641	4100	24.15
1974	"	.8626	45,283	5000	18.11

TOTALS

Single Building

Total Cost	$265,020
Total FTE Output	16,700
Cost per FTE	$ 15.86

Two Stage Plan

Total Cost	$212,779
Total FTE Output	16,700
Cost per FTE	$ 12.74

Fig. 16

Cost per FTE per year

The bulk of the variation arises from the investment in the larger building that is unused and bound to remain for five years. Thus, while superficially the total present costs of the two building plan is higher and the cost per square foot exceeds that of a single building, the output compared with the resources consumed is higher for the two stage plan. This apparent paradox is often confronted by government and business and in the business semantics is termed "under utilized capacity". Some corporations have gone so far as to manufacture items at a net loss rather than take the full blow of investment with no return at all, the hard facts of the decision being that any return is better than none. But in the construction of new capacity this predicament can be avoided by building only that which can be economically utilized. In the case of CCC the savings to the taxpayers or students can be illustrated by the difference in 1972 in the cost of the two plans for the same output is $23,100. This could provide a number of scholarships or make a considerable improvement in the library, to name two examples.

The seemingly apparent choice was not the best one when subjected to careful analysis. It behooves every administrator to develop information to assist the governing trustees to make the best possible choice.

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

SUMMARY

There can be no doubt that higher education in the United States is growing at a greater rate than almost any other segment of the society. The number of institutions, enrollment, spending and revenue all indicate an ever accelerating expansion.

An underlying cause is that the basis of higher education has undergone a fundamental change: it no longer is a luxury. It has become a necessity to a large portion of the population. To answer this demand the schools have had to become more dependent on supporting funds from the government, particularly from the federal level.

This shift in support has brought about increased pressure on the schools to adopt new techniques of financial management. As yet, however, few have made the searching self-inquiry required to discard the old and traditional methods. In spite of their reluctance to apply advanced techniques, the increasing share of the funds supplied by the federal government makes such a change mandatory in the future.

Most of the concepts that are required are simple, logical, and easily transfered from government and business to

the academic environment. With them there is new insight into the effects of a decision and a better understanding of what will be obtained by the allocation of resources. The end result is better schools for less money---an objective that should be of paramount interest to any academic administrator.

A WORD OF CAUTION

It is well to remember that analyses such as those that have been demonstrated do not, in themselves, make decisions. They are neutral and are designed only to present information to the true decision makers, not supplant them. In the case of CCC the Board of Trustees might well have decided to build a single building had there been qualitative factors which compensated for the cost differential. Financial management is a tool which sharpens the judgemental process. It is not a master. The final burden of choice must fall where it always has been---on the human decision maker.

There is also a tendency to over emphasize the exactness of numerical data in forecasts that is deceptive. There is little justification for preparing information in exact dollar and cents amount for five years in the future. This gives a sense of accuracy that is not warranted. The data is obviously "rough" and cannot be refined beyond a relative degree of preciseness.

If these two cautions are incorporated into any financial planning, the entire managerial system will operate more

smoothly and be of greater benefit to the users.

RECOMMENDATIONS FOR FURTHER RESEARCH

Two tasks must be completed prior to any further research into the subject of financial management in higher education if it is to be meaningful.

The first is for the various agencies dealing with the subject to adopt a standard set of definitions and establish a positive and interchangeable standard for data. This is particularly important in the junior college movement. At present much of the data is useless because it cannot be compared with information collected by different sources.

The second task is to establish some type of clearing house for information which already has been gathered and studies that have been made previously. The logical organization for such a collecting point would be one of the many associations presently dealing with higher education. If proprietory rights are involved, licensing fees could be established for use of the material.

There is little excuse for vital information being so widely scattered that for all practical purposes it is withheld from those administrators that can most use it.

If these objectives were realized, the serious student, as well as the academic administrator, could better discern those areas in which research is incomplete.

It would appear that what is most needed in the future are detailed demonstrations of specific concepts of financial

management in specific problem areas.

CONCLUSIONS

Community colleges are rapidly becoming a major influence in our society and their importance will continue to grow. Historical ad hoc techniques can no longer cope with the size of the problem. The most discerning concepts of financial management must be utilized for the intelligent administration of the massive resources being committed to higher education.

These techniques are applicable, not only to community colleges, but to all institutions of higher learning. While they can be utilized for the majority of functions within a college, they are particularly applicable to the capital expenditure decision, for the environment in this particular problem is very closely allied with that in government and business. In addition, the capital expenditure represents the decision which will have the most long lasting influence on the school.

These concepts will bring benefits within the individual college. Also, if demands are made on the administrator by governmental agencies as a precondition to supplying funds, he can supply the requisite analyses.

Higher education looms so large in the future of American society that it needs and deserves the very best administrative talent available. College is no longer reserved for the few and is becoming an integral part of our entire

nation. The dream of de Tocqueville is within reach. But that day will come sooner and will leave more resources for other efforts if the nation will but apply the knowledge to academic administration that it has gained in other fields.

Otherwise it will be just a matter of time until someone will make what will become an often quoted truism, "College is too important a matter to be left in the hands of the educators".

It is hoped that there will be no need for such a statement for it would be a tacit admission of the inflexibility of college administrators. The magnitude of higher education in the United States is too great for any personal or institutional devotion to the status quo.

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