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ABSTRACT

The philosophical underpinning of the purposes of the community college, an examination of the basis for state financial support from a philosophical viewpoint, and an analysis of the ways in which the various states have implemented that philosophy in financial support programs are the central focus of this report. The four current patterns of state funding (negotiated budget funding, unit rate formula funding, minimum foundation funding, cost-based program funding) are described, followed by a review of the 1975-76 state fund allocation formulas and procedures utilized in each state. A three-part process model for community college funding is offered, including a college allocation formula model designed to redress the detrimental effects of currently utilized formulas under conditions of decreasing enrollments. The allocation formula model recognizes economies of scale, program cost differences, and the operational cost differences between implementing new programs and maintaining existing ones. In particular it approximates the downward sloping cost curve. Speculation on the future effects of presently discernable trends comprises the final section of the report. Financial support statistics and definitions of management information system terms for each state are appended. (JDS)

FINANCIAL SUPPORT PATTERNS FOR COMMUNITY COLLEGES 1976

by

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CONTENTS

PREFACE

This document is the third in a series of analytical studies of the financial support patterns of community colleges in the various states. It was possible to develop this statement only with the cooperation and support of the state directors of community/junior colleges in the various states.

The organization of this report is centered around the purposes of examining the basis for financial support from a philosophical viewpoint and then analyzing the ways in which the various states have implemented that philosophy in financial support programs.

An ideal or model is suggested in Section IV with some examination of the future in the final section.

We are indebted to our colleague at Florida State University, Dr. Louis Bender, for his suggestions and support. We are especially indebted to the state directors of the community/junior college programs in the various states for providing data and to their National Council for helping in the publication. The W. K. Kellogg Foundation provided basic impetus through their grant to the SECC Leadership Program.

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CHAPTER I

A Philosophical Base

The community college has developed in the United States since 1901 as a particular type of educational institution based upon American commitments to democratize education at the postsecondary level. It has attempted to popularize higher education. It has attempted to refocus attention upon the development of career or occupational preparation as well as the more traditional academically oriented programs, and of recent date these institutions have attempted to become "community based and performance oriented." No other institution at the postsecondary level has established such comprehensive goals.

As these colleges have grown, however, the problems associated with financial support have increased even more rapidly than their student enrollment. The basic commitment to open access which has been typical of the community college philosophical goals requires low cost and, therefore, increasing tuition negates a basic purpose of this institution. The alternative of increasing public tax support at a time when the attitudes toward any increase in taxes is very strongly opposed is also an almost unacceptable solution.

The financial support for public community colleges has usually come from five sources: local taxes, state taxes, federal taxes, gifts and grants, and student tuition. Sources of taxation have by tradition and precedent been largely identified as property taxes, excise taxes, sales taxes, income taxes, intangible taxes, and inheritance taxes. The relative

emphasis upon these sources by different levels of government has been fairly consistent: property taxes serving as a major source for local districts, sales taxes receiving major emphasis at the state level, and income taxes serving as the major source of revenue for the federal level.

The community colleges with their local orientation were often totally supported by local districts until the 1950's when state support became more and more common. In fact many administrators have believed that the local control orientation of the community college was dependent upon a fact of local support for at least 51% of the operating budget.

Historically the community colleges have been locally oriented institutions. Early junior colleges were often housed in wings of the high schools with complete public support from local funds--i.e., property taxes. As real property was questioned more often as an indicator of income or wealth, a shift in sources for public revenue had to develop. The income tax and the sales tax became sources used more and more often even though these have historically been recognized as sources of income for state and federal appropriations.

Increased state interest and activity in the planning, developing and establishing of community colleges has been accompanied by increased state support, increased state coordination and even increased state control.

The pressure to obtain more funds from student tuition has been a constant force as budgets become more attenuated. Some have called the charging of tuition a use tax upon the student--levied at a time when he is least able to pay it. In spite of these protestations there has been a steady increase in tuition charges to students during the past ten years in almost every state.

There should be concern expressed relative to the financing of community colleges as compared with the basic philosophical commitments of these institutions. In order to evaluate the financial support patterns used by the various states in terms of the philosophy, a careful analysis of the stated goals and their implementation is in order.

One of the earliest analyses of the community colleges and their philosophical commitments was carried out by L. V. Koos in the early 1920's. His taxonomy of "Purposes" provides not only a basic understanding of the junior college in the 1920's but also a recognition of the similar commitments of the 1970's.

Koos listed the purposes as follows:

GROUP	PURPOSE
1. Affecting education in the two years under consideration	1. Offering two years of work acceptable to colleges and universities
	2. Completing education of students not going on
	3. Providing occupational training of junior-college grade
	4. Popularizing higher education
	5. Continuing home influence during immaturity
	6. Affording attention to the individual student
	7. Offering better opportunities for training in leadership
	8. Offering better instruction in these school years
	9. Allowing for exploration

GROUP	PURPOSE
II. Affecting the organization of the school system	10. Placing in the secondary school all work appropriate to it
	11. Making the secondary-school period coincide with adolescence
	12. Fostering the evolution of the system of education
	13. Economizing time and expense by avoiding duplication
	14. Assigning a function to the small college
III. Affecting the university	15. Relieving the university
	16. Making possible real university functioning
	17. Assuring better preparation for university work
IV. Affecting instruction in the high school	18. Improving high-school instruction
	19. Caring better for brighter high-school students
V. Affecting the community of location	20. Offering work meeting local needs
	21. Affecting the cultural tone of the community

Koos characterized the budding junior college movement basically as a democratizing activity in higher education. Even in 1920 when there were less than two hundred junior colleges enrolling approximately 16,000 students, Koos found a definable philosophic basis for the development of these institutions. For purposes of analysis he divided these into five groups.

Group One describes those purposes which are related to the two years of education beyond high school. Such concerns as the usual freshman and

sophomore courses leads the list--then and often now. Concern for "general education," academic in nature, especially for the group who will not continue beyond the community college is also basic in most states. There is also concern for preparing youth for occupations at the "semi-professional" level.

These philosophical concerns were program oriented; however, Koos also identified even at this early stage of development, several other concerns which formed a part of the basic reasons for the development of these junior colleges: popularizing higher education, continuing home influences during immaturity, affording attention to individual students, offering better opportunities for training in leadership, offering better instruction in these school years, and allowing for exploration. These concerns formed the basis for the continuing expansion of junior colleges into community colleges over the ensuing fifty year period.

Group Two purposes were based upon a view of the entire educational system and the position of the junior college within that system. Many persons believed that secondary education was a period of education that provided opportunity to explore alternatives and complete generalities. So the junior college in essence should be an expansion of secondary education leaving the focus upon specialization to the last two years of the typical four year degree. The purpose of the junior college, then, should be to complete secondary education, grow out of adolescence, prevent wasted time and repetition between high school and college, and permit weak four year colleges to become strong junior colleges.

Group Three purposes were related to the philosophy outlined in Group Two. By concentrating secondary education in these local extensions of

education, the universities are relieved of concern for this level of education and can concentrate their efforts on the "true" university functions. At the same time a screening function would be carried out by the junior colleges which would assure better preparation of students for university work.

Group Four purposes assumed that high school instruction would benefit from the faculty leadership in the junior college and from the high standards of accomplishment of the junior college students. Koos pointed out that some junior colleges were serving the interests of the more capable students by encouraging them to move through their programs more rapidly.

Group Five purposes were not well defined in 1920 but they were still recognized. This philosophy simply stated that the local community had particular educational and social needs which should be met through courses offered in the junior college. A concern was also expressed for uplifting the cultural interests of the community.

These purposes identified by Koos over fifty years ago were based upon a limited number of colleges and yet this taxonomy contains most of the elements of the philosophy which is the concern of community colleges today.

In this same study, Koos identified several financial and organizational problems which may be briefly summarized:

1. There was a wide variation in the level of per student support among the junior colleges.
2. It was difficult to identify the hidden costs which result from joint use of facilities and personnel.
3. The costs of courses other than the liberal arts were not adequately supported.

4. Colleges had to attain a reasonable size if there was to be very many courses other than basic liberal arts.
5. Non-resident students caused problems in local support.
6. Increased state support was needed in order to equalize local tax burdens.
7. There was a need for a thoroughly developed state plan before junior colleges should be organized.

The problem of financing the philosophy obviously has had its genesis in the origin of the junior college itself. This fact has been further recognized by Dorothy Knoell and Charles McIntyre in their 1974 study entitled Planning Colleges for the Community.

Knoell and McIntyre describe the community college philosophy through a series of program goals. These represent "philosophies about the relation ship of the individual to society and the importance of the individual interests in relation to manpower needs . . . community colleges are intereste in educating whole persons not simply the labor-force portion of the person.

They listed goals as follows:

Goal One : Community colleges should develop a distribution or balance of students among the major cat ories of programs.

Goal Two : The community college should relate student interests to manpower needs.

Goal Three: The community college should reflect student aspirations and achievements in its relationships to other institutions.

Goal Four : The community college should improve access for disadvantaged and other unprepared students.

Goal Five : The community college should plan specifically for the delivery of student personnel services--all of them.

Goal Six : The community college should recognize that students attend intermittently, part-time, and repeatedly and will have lifetime educational needs.

Goal One points toward a comprehensive program which offers a diversity of education in ways which attract students to all categories--not simply the typical liberal arts programs nor simply the skills required for job success. Decisions relating to allocation resources are an essential consideration in putting money where philosophy is.

Goal Two commits the community college to respond both to manpower needs and to student interests--commitment to this goal implies assessment of manpower needs, counseling services for students, clearly stated goals for career education, adequate programs of training, and continuing placement and follow-up activities.

Goal Three would recognize the need to provide students with continued opportunities for advancing their education. Low cost community colleges will need to be associated in a state with low cost universities. Individual movement from one level of education to another needs to be assisted and not inhibited.

Goal Four is closely related in that programs for unprepared students which lead nowhere do not provide an adequate solution to the social problems of undereducated human resources. Longer time is needed for some students to reach the program goals which are established. Financial support based upon "lock step" progress will not provide for these students.

Goal Five provides for student services which will enable students to be successful. Relationships between the services students need at this critical juncture in their educational development and those which are often provided sometimes appear to be very remote. In fact, a few states have even refused to provide funds for counseling services, for example.

Goal Six recognizes that an increasing percentage of community college student enrollment will be made up of part-time and intermittent students. Current practices are often based upon the assumption that full-time students begin in the fall of one year in order to complete a two year program in the June of the following second year. Summer programs are not supported or are inadequately supported. Services are made available only to full-time students. Criticisms are expressed and even punitive procedures used for so-called attrition rates. The term attrition should be meaningless in this kind of community college.

Goal Six also calls for recognition of the fact that the need for continued education is not over at the age of twenty-two or nineteen; it is a lifetime need. Present day financial support programs are often punitive toward older youth or adults. The needs of the community include many activities not always identified as collegiate or even educational. Programs promoting social outreach, individual development (such as women's re-entry programs), career development, resource center for data collection, civic action groups, conference planning, and a number of related concerns are often placed upon a "self-sustaining" financial base or forbidden entirely.

These six goals express the program philosophy which is most often currently identified by community college analysts. Edmund Gleazer's repeated emphasis upon "community oriented, performance based" education also epitomizes these current philosophical statements. However, such are the

verbal philosophies not necessarily the operative ones. Financial support makes the difference more often than not between the philosophy and the reality.

Another way of examining community college philosophy is to look at the college catalogs. Most college faculties attempt to verbalize their philosophy in the catalog.

These purposes may be expressed in different language but essentially they describe the program commitments of the colleges and thereby state a philosophy. Most community colleges in 1975 emphasize a series of occupational programs. A general education component, a university parallel program offering made up of the usual freshman and sophomore courses, a program euphemistically labeled as developmental which Koos long ago called "making up high school deficiencies" and others have since labeled "remedial," and a continuing education or community service program. The major difficulty is that most states provide financial support for the entire program based upon the third element in this list!

As a further indication of the commitment to the philosophies described herein from the analysis by Koos to the planning format developed by Knoell and McIntyre, from the catalog description to the statements by Gleazer, most legislatures in the nation as well as a large number of State Master Plans have authorized a legal definition which also purports to express the role of the community college--another statement of philosophy.

The typical junior college/community college law authorizes a two-year institution which provides courses of "a scientific and liberal arts nature which are commonly found in the freshman and sophomore years of a baccalaureate degree program" and courses of a "vocational and technical nature."

More often than not some mention is also included which authorizes "adult education" or even community services. These laws in thus defining the role of the community college provide a specific statement of philosophy which is where our money ought to go. Another expression of community college philosophy which reiterates the descriptions of Koos is that given by the 1974 statement of the President's Commission on Higher Education.

> This Commission recommends as an important element in equalization the establishment of free, public community colleges which would offer courses in general education, both terminal and having transfer value, vocational courses suitably related to local needs, and adult education programs of varied character. (p. 69)

These statements in catalogs, in reports, in legal definitions, in the community college literature provide a rather clear statement of the goals generally associated with these colleges. The financial support patterns of the states do not provide adequate funds nor do they allocate resources in a proper fashion to enable the goals to be implemented. Some of the problems may be summarized as follows:

1. While all states which support community colleges (this includes forty-eight of the fifty states) provide a combination of state and other funds, there is still inadequate support in many instances, especially when local tax support is the major component. The sole exception to this generalization is California which at the present time still maintains considerable amount of local tax. The philosophy of community colleges assumes that the state will accept its responsibility to equalize opportunities, but actual

practice does not always support this philosophy. Authorized charge back procedures for out-of-district students are found in only one or two states; local taxation limitations place ceilings upon the available funds for some junior colleges in a state but do not really affect others; tuition charges become prohibitive at some colleges and are virtually non-existent at others; federal funds for vocational education are sometimes distributed on bases which eliminate certain junior colleges from participating in these funds. These are only a few examples of instances where the state has not accepted its responsibility as envisioned in the stated philosophy.

2. Formula dispersion of state support funds are more often than not based upon student credit hours. Philosophically, the courses for credit constitute only a part of the community college program (sometimes less than half). States tend to provide these funds on a flat per student basis or a per student credit hour basis even though it is well documented that some courses cost two or three times as much as other courses. The encouragement to offer the least expensive courses is built into this formula allocation. In other words, the allocation of funds negates the philosophy of the program.

3. Often there is no state support for community service programs. The position that localities should support these programs or that they should be "self-sustaining" entirely belies the philosophy described earlier. The philosophy recognizes all programs in the comprehensive community college; the support pattern says some are more deserving of support than others.

4. Funds for vocational education are allocated in a manner which encourages duplication of effort in these subject areas. Simultaneous support for post-high school vocational schools and for community colleges more often than not encourages wasteful duplication.

5. Some states provide support for full-time day students only. The time of day determines the existence of state support. Part-time students are sometimes not supported at all by state funds.

6. Some states do not provide funds for counseling. Student service support is computed (when it exists) upon an FTE basis even though each part-time student requires a similar service.

7. Funds are made available for permanent buildings but are not available for paying for temporary use even though the community college best serves the area when its programs are available throughout the district served.

8. Antiquated concepts of buildings are enforced which do not permit modular curriculum development. State policies may limit construction design and implementation.

9. The open door is forced to close by placing severe limitations upon enrollment. This is most often accomplished through limited appropriations or by setting a maximum enrollment figure.

As described by Koos, by Knoell, and by Gleazer, the community college philosophy has developed commitments which constitute a philosophical base for these colleges. These commitments have been often frustrated by the resources available or by the way in which such resources are allocated. If financial resources are not made available, the philosophy will remain in the category of unreachable goals.

CHAPTER II

Current Support Patterns --A Taxonomy

The financial support patterns actually in use in the states have been studied during the past three year period by researchers at the Institute of Higher Education, University of Florida. During that period up to the present, information has been provided by each of the fifty states and Puerto Rico, and revisions reflecting changes occurring in various states have also been provided. Analysis of the information leaves an impression of the status of flux that exists.

The various states' methods of allocating funds to community colleges are very diverse. The funding allocation methodology in each state has evolved over time according to the perceived needs of the state and the circumstances surrounding the conceptualization and development of its community colleges. There are, however, sufficient similarities in existence to identify a simple taxonomy of funding allocation patterns which fit four general models of support. The four funding support models are (a) negotiated budget, (b) unit rate formula, (c) minimum foundation, and (d) cost-based program funding.

A definition for each of the models follows, together with examples of formulas which fit into one of the four categories.

Negotiated Budget Funding

State funding for individual colleges which must be either annually or biennially negotiated with a state legislature and/or a state board by college representatives is considered negotiated budget funding. A corollary requirement may be analysis and approval of each individual college's budget either as a single entity, or by line item.

Most of the states using this method have no reported formula for budget preparation or funds allocation. The few that have developed detailed and comprehensive budget preparation procedures are more appropriately classified in the cost-based program funding category. The detailed budget programming becomes the method for allocation, and it is an overshadowing argument in negotiations.

The states currently reporting negotiated budget funding are Connecticut, Delaware, Idaho, Indiana, Kentucky, Maine, Massachusetts, Rhode Island, Utah, Vermont, and Virginia. Colorado's state operated colleges are included, but that state's locally controlled community colleges are in a different category. None of these states reported revenue from local district taxes to support operations of their colleges. Other states meeting the requirements of negotiated budget funding, but qualifying in another category, are reported in the other categories.

Comparison with the typology of finance models described by the National Educational Finance Project (NEFP) places the states using negotiated budget funding in the full state support model category. Full state support theoretically enables complete equalization of educational opportunity. However, equalization or equitable treatment depends upon how the state faces its responsibility for full support and the method of budget development and negotiation.

A positive attribute of this method is the high degree of accountability that is inherent. On the negative side, a large state staff may be required with a tendency toward state control. Pressure to regulate both revenue and expenditures can threaten local decision-making and responsiveness to local needs. Combining full state support and negotiated budgeting encourages state-level decision-making.

Unit Rate Formulas

State allocation of funds to colleges on the basis of a simple formula specifying a stated number of dollars per unit of measure, is considered to be unit rate formula funding. The units of measure in the formula may be units of instruction, enrollment, output, and/or a combination thereof. A minimum local tax effort may or may not be required.

Unit rate funding is a flat grant method. A state grant of funds is based on some measure of the number of students receiving instruction and other services. The grant is computed at a single funding rate in the simplest case. In cases where attempts have been made to adjust the formula to meet differences in needs, multiple funding rates differentiated according to level of instruction, type of college, numbers of students enrolled, and/or type of instructional program may become part of the grant computation.

Both minimum foundation funding and cost-based program funding may be considered as advanced developments of unit rate formulas. Minimum foundation funding represents a refinement in the direction of guaranteeing an acceptable level of support for enhancing equality of educational opportunity where both state and local taxes are funding sources. Cost-based program funding represents a refinement in the direction of funding based upon actual costs for operations either by operational function or by specified instructional discipline categories.

Since unit rate formulas represent a flat grant method, funding does not vary with respect to the local taxpaying ability of the district. A minimum local tax levy may be required for eligibility to receive the state grant, but the rate amount for the grant is uniform statewide. The grant may, however, have a maximum limit, a ceiling on the total funds allocated

to a college often stated in terms of a percentage of college operating expenses.

The states currently using unit rate formulas, but setting maximum percentages of state support for a college's current operations, are Maryland, Missouri, New Jersey, New York, and Pennsylvania. How the percentage ceilings are applied in each of these states may be explained best in the descriptions of the formulas.

The other states using unit rate formulas are: Alabama, Alaska, Colorado (locally controlled colleges), Kansas, Mississippi, Nebraska, North Dakota, Ohio, Oklahoma (one locally controlled college), and Oregon. Each of these states, with the exceptions of Alaska and Kansas, allocate funds to their colleges at one or more $/FTE student rates. Both Alaska and Kansas allocate their funds at a single $/credit hour rate. Alabama and Mississippi use a college site funding grant which is the same amount for each of the colleges, and then add their $/FTE funding to it. Examination of the formulas reveals that the funding rates vary in number from one to six, and in the states where multiple rates are used, some rate decision parameter (Allocation Variable) is specified for use in calculating the total funding allocations.

In the states where the $/FTE student rate is dependent upon a curricular program rate parameter, the vocational education program FTE student rate is usually higher than the academic transfer (or general education) program FTE student rate. From the states currently following this practice, two examples of this enriched funding per FTE are found in Colorado and Ohio. Colorado funds the vocational education programs at a rate 68% higher than the nonvocational educational programs. In Ohio, the lowest of three vocational-technical education funding rates is 44% higher than the lowest of

the three rates for general educational studies.

Oregon differentiates formula unit funding rates according to the number of FTE students enrolled. The funding rates are set for two levels or steps which in effect provides different levels of funding for colleges of different sizes. The first 1100 FTE students are funded at a rate 24% higher than the $/FTE rate for enrollment over 1100 FTE.

Since unit rate formulas are essentially a flat grant method, equalization of educational opportunity for all students in a state is virtually impossible. It should be pointed out, however, that as the percentage of state financing increases and the percentage of local financing decreases, the level of equalization becomes higher. In the case where local support becomes zero, as with Alabama and Alaska, the funding method becomes the full state support method, and equalization within the state may be achieved if student fees are uniform statewide.

The most positive aspect of this financing method is local control of budget decisions and expenditures. On the negative side, unit rate funding neither relates directly to college responsiveness to local needs, nor provides incentives for improvement in programs and services, or efficiency. Also, accountability provisions are absent; funding is not related directly to expenditures or costs other than through set ceilings on state support. Providing program direction through funding incentives is possible, as with New York, but only if special funding rate categories are established in conjunction with qualifying criteria for eligibility.

Minimum Foundation Funding

State funding for individual college districts computed at a variable rate dependent upon the amount of local tax funding available at a prescribed

minimum millage levy, and/or providing a state guaranteed minimum level of support per student measure when state and local funds are combined, is minimum foundation funding. The variable rate allocation of state funds may be expressed as either a set $/student measure amount minus the required local millage levy funds, or the approved district budget minus the amount produced by the required minimum local tax levy.

Minimum foundation funding is also referred to as equalization funding. It is a method with variations in form of the Strayer-Haig formula. Equalization is best achieved where there is no local college district leeway to assess a higher tax levy than the required minimum millage and student fees are uniform statewide. If the millage and student fees are constant, both the local funds and contribution and the state allocation are functions of the wealth of each college district. Local funding varies directly with the value of taxable property, and state funding varies inversely with the local property value. The question arises however: Should community college funding be purely a function of district wealth, either directly or inversely?

The states using minimum foundation funding are Arizona, California, Illinois, Michigan, Montana, New Mexico, Wisconsin, and Wyoming. Montana expresses her formula for state funding allocations as the state-approved college budget amount minus a prescribed local millage levy and minus student fees. Montana requires a three-mill deduction. New Mexico uses a similar method: approved budget, minus student fees, minus the local funding. But, New Mexico has a statutory guarantee of a specified $/FTE student funding level when state and local funding is combined. The method used for minimum foundation funding in each of the states is described in the section listing the formulas currently in use.

Minimum foundation funding of community colleges is a philosophical extension of the foundation approach to financing the public schools, kindergarten through high school. A major deficiency of this method for financing colleges is the impact of student tuition and fees on equalization of expenditures per FTE. Only in the cases where student fees are either at zero or uniform statewide, and assessment of property valuation is uniform statewide, can equalization be approached.

It is commonly recognized that property valuation practices vary widely from district to district, and this negates the principle of equalization of effort as a function of district wealth or "local ability to pay." The traditional minimum foundation approach also disregards recognized factors such as geography and college size which affect directly the differences in financial support needs.

Though minimum foundation funding provides for local board control of expenditures, it could be viewed as a necessity due to the relatively high local tax funds usually required. The method does not intrinsically provide any apparent incentive for promoting efficiency or improving accountability. Outputs are not related to expenditures or costs of programs and services.

Cost-Based Program Funding

The allocation of state funds on the basis of multiple cost centers, detailed instructional discipline categories, program functions, and/or budgeted object of expenditure is considered to be cost-based program funding. Cost studies at either the state level, or the college level, or both levels, may be an integral part of the funding process or an implied separate activity. These concepts are implicit in the funding method, (a) funding

related to actual costs, and (b) costs varying due to program and other institutional factors.

Cost-based program funding is analogous to one or the other of two common finance models, depending upon whether local tax funds are used or not. Ten of the fifteen states using this method have no local tax funding. The ten are Arkansas, Florida, Georgia, Hawaii, Louisiana, Minnesota, Nevada, Tennessee, Washington, and West Virginia. They fit the full state support model. Five states have a small percentage of total support which is from local taxes, and these all fit into the flat grant model: Iowa, North Carolina, Oklahoma, South Carolina, and Texas. The local funding is not tied directly to the state funding procedures in these states: it is either for special purposes, or a carryover of past practices to allow funding enrichment from local sources.

Cost-based program funding has high potential for equal opportunity provisions when costs are accurately assessed on a statewide basis and are fully funded. Fair treatment and equitability may be enhanced for the student, the tax-paying public, and the colleges. Accountability is a built-in feature of this method when cost analyses are an integral part of the process.

State-level incentives to improve programs and services are possible through this method, though they are not always present. State-level incentives to promote efficiency of local college operations may be included, but there is a danger that funding based on statewide average costs could discourage efficiency since lower costs result in subsequent lower funding levels.

Responsiveness to local needs and local control of decisions, with respect to program direction and budget, could fall prey to state-level inter-

vention. Safeguards guaranteeing local inputs and control must be built into the procedures in order to avoid this situation.

Table 1 is a summary of the college operational or program functions that repeatedly occur as individually funded categories in the states' allocation formulas. There appears to be a high degree of concensus on the location of cost centers as points of funding differentiation in ten of the states. Three states--Florida, South Carolina, and Texas--fold all operating expenses funding into the $/FTE student or $/contract hour allocations for their instructional discipline categories.

The most common differentiation in funding for instructional programs is made between academic transfer courses and vocational/technical courses. The use of instructional discipline categories as cost centers is evident both in the states that fund according to course or student measures, and in the states that fund according to instructional positions. The frequency of use of instructional categories in determining funding allocations is (a) twelve of the fifteen states use two or more instructional categories, and (b) six of the twelve states use detailed discipline categories ranging in number from fourteen to forty-five.

Table 2 illustrates the frequency of use of the different types of allocation rates. The number of states using a particular type of funding rate for allocations in the program function categories is given. One purpose of Table 2 is to allow a comparison with Table 1 and show the similarities and disimilarities in allocation practices among selected states using cost-based program funding.

TABLE 1

College Program Functions Identified as
Funding Parameters in Selected States

State	Program Funding					
	Instruction & Research	Extension & Public Service	Library & Learning Resources	Student Services	Admin. & Gen. College Support	Plant Oper. & Maint.
Arkansas	X	Neg.	Neg.	X	Neg.	X
Florida[a]	X	X				
Georgia	X	X	X	X	X	X
Hawaii	X	X	X[b]	X	X	
Minnesota	X		X	X	X	X
Nevada	X		X	X	X	X
North Carolina	X	X	X	X	X	No[c]
Oklahoma	X	X	X		X	X
South Carolina[a]	X					
Tennessee	X	Neg.	X	X	X	X
Texas[a]	X					
Washington	X		X	X	X	X
West Virginia	X		X	Neg.	X	Neg.

Notes. An X indicates funding rates or percentage amounts are used to fund the function, and an entry of "Neg." means the funding is negotiated for that function.

[a]Funding for all other functions is included in the funding rates for instruction.

[b]Library and Learning resources are called academic support.

[c]This function must be financed from local funding sources.

TABLE 2

Frequency of Use of Allocation Rate Parameters
In Cost-based Program Funding

Funding Rates	Number of States Funding the Program Function					
	Instruction & Research	Extension & Public Service	Library & Learning Resources	Student Services	Admin. & Gen. College Support	Plant Oper. & Maint.
$/Prof. Positions	8	1	4	3	4	3
$/Staff Positions	4		5	3	4	3
$/Capita Student		1	1	3	2	
$/FTE Student	6	2		1	1	
% Salaries	1	1	3	2	2	1
% Salaries & Operations		1	2	1	5	1
$/College	1	1			4	
$/Credit Hour	3		1			
$/Contact Hr. or CEU	1	1				

TABLE 2 - continued

Funding Rates	Number of States Funding the Program Function					
	Instruction & Research	Extension & Public Service	Library & Learning Resources	Student Services	Admin. & Gen. College Support	Plant Oper. & Maint.
$/Book Replaced			1			
% Replacement cost			2			
% Operations Expend.						1
$/Square Foot or Acre						6
$/Man Hr. or Man Yr.						2

Note. The numerical entries do not indicate an unduplicated count of the states in a vertical direction. For example, a state may use more than one type of funding in its allocation for the instruction and research function.

SUMMARY

This report places each of the various states in one of four categories (Note: Several states support more than one type of community college financial plan and therefore may be in more than one category) as follows:

I. Negotiated Budget Funding (12 states)

- Colorado (state controlled)
- Connecticut (state system)
- Delaware (one institution only)
- Idaho
- Indiana (one institution only)
- Kentucky (part of University System)
- Maine (part of University System)
- Massachusetts (state system)
- Rhode Island (one institution only)
- Utah
- Vermont (one institution only)
- Virginia (also related to cost analysis)

II. Unit Rate Formula Funding (15 states)

A. Maximum level of state support established

- Maryland ($1100/FTE--max.)
- Missouri ($20/credit hr.--max.)
- New Jersey ($600/FTE--state max.)
- New York
- Pennsylvania ($1500/FTE--max.)

B. No maximum presented

Alabama (pro rata share of appropriated funds)

Alaska (academic programs only)

Colorado (totally controlled) (state residents only)

Kansas (max. of $15.50/credit hour)

Mississippi

Nebraska (pro rata share of total)

North Dakota

Ohio (in six categories)

Oklahoma (locally controlled) (limited by appropriations)

Oregon (state residents only)

III. Minimum Foundation Funding (8 states)

Arizona

California

Illinois

Michigan

Montana

New Mexico

Wisconsin

Wyoming

IV. Cost-Based Program Funding (16 states)

A. Full state funding

Arkansas

Florida (cost studies at state level)

Georgia (costs determined by Regents)

Hawaii (negotiated amounts)

Louisiana (computed statewide)

Minnesota (computed and/or negotiated costs)

Nevada

Tennessee

Washington

West Virginia

B. Local support in addition to state

Iowa

North Dakota

Oklahoma (state system)

South Carolina

Texas

Two states did not report a method for funding community colleges: New Hampshire and South Dakota.

CHAPTER III

Procedures Used in Each State

The previous chapter provided information about the state support of community colleges. This chapter provides specific information relative to each state. The descriptions contained herein are the most recent information available to the researchers. In most instances the 1975-76 procedures are described except where otherwise noted.

The following paragraphs describe each of the states' funding methods, not from the point of view of procedural detail, but with respect to types of funding rates and the application to programs and/or operational functions. The object is to present a narrative picture of the decision points where allocation variables occur in the funding methods.

Alabama - The state allocation to each college includes a base appropriation ($200,000 per college in 1976-77) plus a pro rata share of the remaining state appropriation after all colleges have received their base allotment. The proration is based upon the FTE student average enrollments for the four-quarter year. FTE is computed by dividing the credit hour production per quarter by 12.

Alaska - The allocation of state funds is based upon credit hours recorded in academic degree programs. Nondegree programs and activities are not eligible for state funding support and, therefore, must be self-supporting or funded from local resources.

Arizona - The allocation of state funds is either computed at set $/FTE student rates, or is a lesser amount sufficient to allow the local tax levy to be reduced to five mills. The $/FTE student rates vary according to two specified parameters: (a) enrollment level either greater or less than 1000 FTE students, and (b) enrollment level either greater or less than 1000 FTE students, and (b) enrollment in either nonvocational or vocational programs. The 1974 rates have been reported to be unchanged through 1976. They are $680/FTE nonvocational and $950/FTE vocational students for the first 1000 FTE students, and for the enrollments over 1000 FTE the rates are reduced to $440/FTE nonvocational and $616/FTE vocational students. Thus, funding is approximately 54% higher for the first 1000 FTE students than for the FTE over 1000. It is 40% higher for vocational FTE than for nonvocational FTE regardless of total enrollment level. Arizona's method is equivalent to computing the state funding allocation after a five-mill local tax levy is deducted from the budget of each college.

Arkansas - The funding allocation for instruction is calculated at a $/faculty position salary rate for each of 19 Higher Education General Information System (HEGIS) instructional disciplines: 14 academic, four occupational, and one developmental. Instructional supplies, expenses, and replacement equipment are also funded at a $/faculty position rate for each of the HEGIS categories. Prior to 1976-77 the funding rate applied to both credit and noncredit instruction. Counselor positions are funded at a $/position salary rate. Building maintenance and repair allocations and custodial care allocations are computed according to a set of $/square foot rates that are arrayed by (a) building use, (b) type construction, and (c) air conditioned status. All other funded budget items are nonformula

items based upon past experience and justification to meet estimated needs. These items are (a) general administration and student services, (b) general institutional expenses, (c) community services, (d) library, (e) operation of physical plant, and (f) other educational and general expenditures.

California - Average daily attendance (ADA) is used as the student measure for funding. The state's share of college operating expenses is computed in several parts. One $/ADA rate is used for students other than defined adults, and a lower $/ADA rate is used for defined adults. Defined adults are those students over 21 years old who are enrolled in fewer than 10 class hours per week. Each part of the allocation computation is an amount that equates to the $/ADA rate minus the amount produced by a specified minimum local tax levy. The specified millage deduction from the defined adult part is 2.4 mills, and the deduction from the other part is 3.9 mills. The ADA rate for defined adults is 54.5% of the ADA rate for students other than defined adults.

For 1976 the basic state aid rate for each unit of ADA of students not residing in any district maintaining a community college is $125/ADA. The state allowance for each unit of "defined adult" ADA is $637/ADA minus the product of $0.24 multiplied by each $100 amount of the adjusted assessed valuation of the district per unit of ADA exclusive of adults. Funding for apprentice training for 1975-76 is reported at $1073 per unit.

The "Foundation Program for Grades 13 and 14 of Community College Districts" excludes nonresidents, defined adults, and incarcerated inmates from the computation of ADA for foundation funding. For each community college district which has a foundation program ADA of 1,001 or more during the fiscal year. The funding rate is $1,143/ADA minus the product of $0.39

multiplied by each $100 amount of adjusted assessed valuation of the district per ADA exclusive of adults. For those college districts with less than 1,001 ADA, the lesser amount is assigned to each college based upon either the ADA reported or the number of certificated employees employed as appears below:

A.D.A.	MINIMUM NO. OF FULL-TIME CERTIFICATED EMPLOYEES	1975-76 AMOUNT
1 - 150	12	$ 307,000
151 - 200	15	[illegible]
201 - 300	18	493,000
301 - 400	21	586,000
401 - 500	24	679,000
501 - 600	27	772,000
601 - 700	30	864,000
701 - 800	33	957,000
801 - 900	36	1,050,000
901 - 1000	39	1,143,000

Colorado - The 7 state community colleges are totally state supported, and appropriations are based upon the budget requests of the colleges and the legislature's discretion. The state aid grants to locally operated junior college districts are computed for state resident students only. The state grant support rate is $700/FTE student for all state resident students. An additional $475 per FTE (700 + 475 = 1175) per FTE student grant is allocated for enrollments in occupational courses meeting

state board criteria. The FTE student equals either 45 quarter hours or 30 semester hours of credit courses.

Connecticut - The colleges are totally funded by the state. Appropriations and allocations are dependent upon the projected needs of each college as identified by each college president in his budget request, and the historical funding pattern established with the legislature.

Delaware - A line item budget is submitted by each college, via the governor, to the state legislature. The colleges are considered to be 100 percent state funded. Day student tuition is returned to the state treasurer, but student tuition collected for evening division activities is retained by each college for support of the evening programs.

Florida - The allocation for all programs and functions is provided through $/FTE student funding rates established annually for 34 instructional disciplines; 23 HEGIS academic, seven occupational, two developmental, and two community instructional services. An annual cost analysis by each college folds all indirect costs for administration, library, student services, academic support, physical plant and other services into a cost per credit hour of instruction. This is added to the direct cost per credit hour for instruction in the 34 discipline categories. State appropriations are requested on the basis of $/FTE statewide average cost in colleges of less than 1300 FTE students and in colleges of greater than 1300 FTE, adjusted for changes in cost of living from which is deducted income from student fees and federal sources.

Georgia - Funding for professional instructional and research faculty positions is allocated at a uniform $/faculty position rate. Clerical and Technical support staff positions are funded at a $/staff

position rate, and operating expenses for the instruction and research function are funded at a $/faculty position rate. The extension and public service function is funded at a $/continuing education unit ($/CEU) rate. The functions of general administration, institutional services, and student services are funded in a lump sum amount equated to a percentage of the combined allocations for (a) instruction and research, and (b) extension and public service. Library services are also funded at a percentage of the combined allocations for (a) and (b). The remaining functions of physical plant operation and maintenance are funded at a $/square foot rate. The state staff performs an annual statewide cost analysis to provide a basis for rate change recommendations.

Hawaii - Support for community college programs are on a negotiated basis--currently (1976) this support for instruction in the category of liberal arts is differentiated geographically between the island of Oahu and the neighbor islands. The neighbor islands' funding rate for liberal arts is 22.8% more than the rate for Oahu. The instruction program is funded at $/credit hour rates in two categories: liberal arts and vocational education. The four programs other than instruction are funded at four separate $/student head count rates. The four programs are (a) instructional support, (b) student services, (c) academic support, and (d) public service.

The most recently reported rates for state funding are: $18/student credit hour and $23/student credit hour for instruction in liberal arts on Oahu and the "Other Islands" respectively, $28/student credit hour for all vocational education instruction at all locations, $175/student enrolled for the instructional support program, $75/student enrolled for the academic support services program, and no amount for the authorized public service program.

Idaho - No formula is used to allocate state appropriations. Budgets are negotiated as need dictates.

Illinois - The allocation of state funds is computed at set $/credit hour rates, but there is a provision for equalization grants that guarantees a $/FTE student foundation level when state and local funding is combined. The regular funding rates are in five course classifications listed below with current rates. The equalization grant is the variable amount required to bring $/FTE student funding up to the foundation level when the regular state funding rates plus local funds from specified minimum tuition and from the local tax levy do not suffice. The required minimum tax effort to qualify for equalization is 12 mills. Illinois also makes special purpose grants available to the colleges for non-credit public service and disadvantaged students projects.

For FY76 there are five authorized budget line items having the following $/credit hour funding rates:

(1)	Summer session baccalaureate and occupational courses	$19.20
(2)	Summer session general studies courses	$19.20
(3)	Academic year baccalaureate and occupational courses	$19.20
(4)	Academic year remedial and vocational skills courses	$18.00
(5)	Academic year "other" general studies courses	$17.61

Non-business occupational courses meeting eligibility criteria for supplemental grants are funded at $19.20 + $5.80 = $25.00/credit hour. If the appropriation is insufficient to fund increased enrollments at the authorized rates, proration occurs.

Indiana - No formula reported. (Vincennes University is the only community college.)

Iowa - The biennial budget request is based upon the total fiscal year budgeted expenditures for each of the educational functions; arts and sciences, vocational-technical, adult, the "other" instructional programs; and the five support functions. The total amount of the budget request includes a computed general aid amount expressed in $/FTE, an estimated annual salaries adjustment amount, and an additional amount for second and third campus operations.

The state general aid is determined by subtracting local and federal revenue sources from the computed statewide average cost per FTE student in four instructional programs; arts and sciences, vocational-technical, adult, and farm vets. The current year estimated statewide average costs are computed by adding a percentage increase to each category to compensate for growth and inflation (presently 10.5 percent for vocational-technical and 8 percent for all others). The FY75 costs are computed to be $1,312.42 in arts and sciences, $1,636.03 in vocational-technical, $1,029.39 in adult, and $877.87 in farm vets programs.

The revenue deductions are computed for four sources: estimated statewide adjusted tuition revenue per FTE student (currently $315.42/FTE), actual prior year college sales and services, vocational aid revenues increased at the percentage rate to match the increase applied to the statewide average cost (currently 10.5 percent), and one half of each school's general fund, 0.75 mil tax.

The current additional funding for current year second campus operation is $25,000 and for third campus operation an extra $15,000. There is a penalty provision to reduce state general aid allocated to a school when the school's FTE decreased more than 5% from the previous year FTE total.

The general aid would be reduced according to the following.

1. A 50% penalty per FTE would be applied for the number of FTE over the allowable 5% decrease.
2. The number of FTE to be penalized would be multiplied by the general aid per FTE for the school in order to establish the amount of reduction which would be made in the following year.

Kansas - The state funding rate has changed to $15.50 per credit hour for 1975-76. It was reported that their method of funding based upon credit hours of enrollment has not changed, and the provision that the state pay fifty percent of the out of district tuition for students attending colleges out of their residential district is retained. (State funding was $8.00/cr. hr. in 1973 and $14.00/cr. hr. in 1974).

Kentucky - No formula reported. The Program Budget is negotiated.

Louisiana - The state appropriation for colleges in the Louisiana Board of Trustee System is computed using a salary base formula dependent upon student credit hours produced in categories differentiated according to level of instruction and the HEGIS taxonomy. The state allocation equals the salary base amount plus 62.65% of the salary base amount. The rates used to compute the salary base are:

PROGRAM	$ per Student Credit Hour
Agriculture	$ 22.86
Engineering	25.40
Fine Arts and Architecture	30.14
Nursing	117.22
Allied Health and Pharmacy	25.40
Sciences	21.77
Technologies	25.40

PROGRAM	$ per Student Credit Hour
All others:	
(a) for first 20,000 student credit hours	$ 27.47
(b) remainder in excess of 20,000 SCR	18.32

In addition to the above, any small two-year college (fall headcount of 1,000 or less) is eligible to receive an adjustment for disproportionately high overhead costs. This factor is ten percent of the amount generated by the formula.

Maine - No formula has been reported. State funding has been expressed as by "legislative appropriation."

Maryland - State funds are allocated to the community colleges in districts having a population of 50,000 or more at a dollar per full time equivalent ($/FTE) student rate equal to 50% of college operating expenses, provided that the $/FTE student rate does not exceed a maximum rate established by the state ($700/FTE). Allocations to regional colleges serving several subdivisions and with less than 100,000 population and to community colleges with less than 500 full time equivalent (FTE) students in a district of less than 50,000 population are made at a $/FTE student rate that equals 55% of the college operating expenses, providing the maximum stated $/FTE student rate ($1100/FTE) is not exceeded.

An additional requirement to qualify for the state funding is that the amounts of support from local funds and student fees are 28% and 22% respectively for the community colleges in the first category above and 28% and 17% respectively for the latter category. The funding rate for the smallest and second smallest colleges has been changed by statute for 1975-76 to require the counties in which they are located to contribute more of

the revenue to cover total costs and to reduce the revenue contribution share born by students. This change requires a support base of $2,365 per FTE student at the two small colleges. The state share is 55%, but cannot exceed $1,300 per FTE student. The local college district is required to share 32% of the cost, and the student must pay a 13% share of the cost.

Massachusetts - No formula reported. Budgets are negotiated.

Michigan - The state allocates funds to the colleges at $/FTE student rates which are dependent upon both the type of college and the type curricular program enrollment. The net state allocation is computed from (a) enrollments in three categories of programs, (B) an added funding adjustment factor, (c) a deduction of tuition and fees, and (d) a deduction of the lesser amount generated when either a one-mill levy is multiplied times the equalized district property valuation, or the total FTE enrollment of the college is multiplied times a set $/FTE rate determined from a graduated scale of dollar rates to be multiplied by total FYES as the alternate deduction to the local tax levy of one mill times the district's state equalized valuation on property. The $390 X FYES total is changed to: (FYES = FTE student)

$400 X FYES total for one campus

$410 X FYES total for two campuses

$420 X FYES total for three or more campuses.

There is also a provision for community colleges offering classes at state correctional institutions to receive allocations of $310/FYES in the program to defer costs for books and equipment.

The state funding rates for colleges of greater than 1,500 fiscal year equated students (FYES) and operated by public school districts have been

increased to $1,140/FYES for liberal arts, and business and commerce programs; $1,760/FYES for vocational-technical (excluding health) programs; and $2,280/FYES for health related programs. The state aid rates for all community college districts were increased to $1,305/FYES for liberal arts, business and commerce programs; $1,825/FYES for vocational-technical programs; and $2,275/FYES for health related programs. The allocation rates for colleges of greater than 1,500 FTE students and operated by public school districts are, when compared with the rates for all other colleges; (a) 12.65% less for liberal arts, business and commerce programs, (b) 9.05% less for vocational-technical programs, and (c) 0.22% more for health-related programs. The allocation rates for vocational-technical programs, when compared with the liberal arts rates at each college, are 54.5% higher for the public school district colleges over 1500 FTE, and are 40% higher for the other colleges. The allocation rates for health-related programs, when compared with the respective liberal arts rates, are 100% higher for the public school district colleges over 1500 FTE, and are 74.4% higher for the other colleges.

Minnesota - The allocation for personnel is on the basis of programs and is computed at $/position rates for both professional positions and for nonprofessional positions. All other budget items have specified rates for funds allocations on the basis of object of expenditure. The rates are $/college for such items as educational supplies, advertising, cooperative education, communications, and travel. Custodial, maintenance of plant, and utilities are funded at separate $/square foot rates. Other allocation rates used are $/FTE student, $/student head count, and $/man-hour of services. Administrative and instructional computer services and

high school student testing for admissions are paid directly from state board accounts: not funded through the colleges. Some items such as equipment and film rentals, plant management services, garbage and snow removal, and refunds are funded according to previous experience and justified need.

Mississippi - The allocation of state funds for operating expenses is in four parts. Each college district is allocated a general support site grant (currently $10,000) from the academic program appropriation. The remaining academic appropriation is allocated to the colleges proportionally according to enrolled full-time state resident day students (currently $957/student). Each college district receives a vocational education site grant (currently $31,250) from the vocational program appropriation, and the remainder of the appropriation is allocated according to enrolled full-time state resident vocational day students (currently $65/student). The separate appropriation for part-time day students and students enrolled in evening courses is allocated to the colleges at a $/FTE student rate determined by the number of total credit hours of enrollment statewide. (For the summer and fall of 1976, the appropriation divided by the total statewide part-time credit hours yielded $109/FTE student, and the estimate for the second term and summer of 1977 is $50/FTE student.)

Missouri - The state allocates funds either at 50% of actual college operating expenses, or at a set $/credit hour student masimum rate, whichever is the lesser. However, there is a minimum $/credit hour student rate at which funds are allocated if 50% of expenses should not equate to at least the minimum rate. The minimum and maximum rates are boundaries within which the 50% of expenses function is used to allocate

funds. Resident student enrollments are all that may be counted for the purpose of apportionment of school funds from the state. The funding rate for FY76 is $20 per credit hour produced in a program approved by the state department of higher educaion.

Montana - The state share of operating expenses is computed to equal the college general fund plus a percentage of the general fund (reported as 9 percent in 1974). The allocation is treated as a grant-in-aid to the colleges, and the entire biennial appropriation is available in one check at the beginning of the new fiscal period.

Nebraska - The state appropriation for the support of the colleges is to be distributed proportionally to the colleges on the basis of the ratio of each college's FTE enrollment to the statewide FTE enrollment total for the year. Disbursements of the state funds are quarterly, and the final June payment is adjusted for estimated vs. actual annual enrollments.

The boards of control for the six technical community college areas may certify to the county board of equalization of each county within the area a mill levy not to exceed two mills for the purpose of supporting operating expenditures of the colleges in the area. An additional mill levy not to exceed one mill may be certified to the county boards for the purpose of supporting a capital improvement fund, a bond sinking fund, or for retirement of general obligation bonds. The combined levy for current operations and capital improvement, etc., is limited to a maximum of 2 1/2 mills unless prior approval for a larger mill levy is obtained through a majority vote of qualified electors in a millage election.

Nevada - Allocation of funds for instruction is on the basis of a $/faculty position rate, and instructional support expenses are

funded at a separate $/faculty position rate. Instructional support includes (a) nonprofessional staff, (b) operations materials and supplies, (c) instructional equipment, and (d) in-state travel. Administration and general expenses functions, and out-of-state travel are each funded at a different $/faculty position rate. Student services includes admissions, student records, and other student affairs functions. The student services function is funded at a $/FTE student rate. Operation and maintenance of physical plant is funded at a $/square foot rate for buildings and a $/acre rate for grounds maintenance. The function of library services is funded according to the state of Washington library formula (see Washington).

New Hampshire - No formula reported.

New Jersey - State funds are allocated for 50% of college operating expenses if the allocation does not exceed an amount which equates to the state established maximum $/FTE student rate. The reported state funding rate for 1976 was $600/FTE.

A new funding method including differential funding levels for high cost health and engineering technology programs was proposed to this year's legislature. No action has been reported on this proposed change.

New Mexico - There is a statutory guarantee of a minimum combined state and local funding base of $325 per FTE student. It is reported that in actual practice, the appropriated state funds are equal to the approved budget amount minus all other sources of income.

New York - Basic state aid support is divided into two categories according to the two classifications of colleges, "non-full opportunity colleges" and "full opportunity colleges." The supplemental state aid is the same for both classifications of colleges.

Basic state aid for non-full opportunity colleges is the lesser of either 33 1/3 percent of net operating cost after other revenues are deducted, or the sum of: $558/FTE, + $29/FTE if students to faculty ratio is no less than 17.5 to one, + $29/FTE if no less than 50% of gross cost less rentals for space is allocated to I and DR, + $29/FTE if sponsor's contribution is no less than 1/2 mill of full valuation of real property in the district, + $150/full-time disadvantaged student enrolled if the ratio of disadvantaged students to the total number of students is not less than the ratio of disadvantaged persons in the district population to the total district population, + 33 1/3 percent of the rental cost for space.

Basic state aid for full opportunity colleges has the same categories and provisions as stipulated above, but the percentages and funding rates are increased as follows: 40 percent instead of 33 1/3 percent in each case, $670/FTE instead of $558/FTE, $35/FTE instead of $29/FTE in each instance, and $180 instead of $150 per full time disadvantaged student when the criterion is met.

The supplemental state aid for both classifications of colleges is $150/FTE student enrolled in technical programs if 1975-76 P.T. and F.T. tuition rates are no less than the respective 1974-75 P.T. and F.T. tuition rates, and if the 1975-76 sponsor district's total funding contribution or contribution per FTE student from the district is equal to or greater than the 1974-75 contribution total or contribution per FTE district student respectively.

Total aid for a college is the basic aid plus the supplemental aid for technical programs.

North Carolina - The funding allocation for instruction is calculated at a $/instructional unit rate. The instructional unit represents a teaching position and is used also to compute two types of student measures: budget FTE and "students in membership." The instructional budget FTE and "students in membership" are divided into three categories: (a) technical, (b) vocational, and (c) all other than technical or vocational. The fractional multipliers used to compute "students in membership" for the technical and vocational categories result in 20% more funding for technical and 50% more funding for vocational categories where the $/"student in membership" rates apply. The functional area of general administration is funded according to line item object of expenditure, and by multiple $/"student in membership" rates. Some items under general administration are funded at either $/position rates or $/college rates. All college staffing other than the staffing for professional teaching positions, is computed from a detailed staffing rate schedule giving number of positions per budget FTE count for all types of administrative and support positions. Funding for staff other than instructional positions is at specified $/staff position rates. Funding for all other functions is by either $/college, or $/position, or $/"student in membership" rates established for each line item object of expenditure. State funding for maintenance is applicable only to furniture and equipment provided by the state, and state funding for fixed charges and personnel benefits is only applicable to personnel positions paid with state funds. The local funds provided through local taxation must provide for these expenses: (a) bonding of college employees, (b) auditing local funds, (c) millage and bond elections, (d) legal fees for operations and administration, (e) the wages, supplies, and utilities for

operation and maintenance of the physical plant, (f) the rental of land, buildings and equipment, (g) insurance on the physical plant, and (h) the fixed charges, insurance, and personnel benefits for personnel paid with local funds.

The formula rates have effectively changed for the 1975-77 biennium by the change in ratio of total curriculum FTE to instructional units. Prior to 1975-77 the instructional unit ratio was 22 curriculum FTE per instructional unit. The new ratio is 23 to one.

North Dakota - The state aid is $200 per student in attendance either two semesters or three quarters. An additional supplement of state aid at the rate of $250 per student in attendance is provided to the school district, city or county, if it has a tax levy of not less than 4 mills assigned to support of the junior college. The county tax levy to aid junior colleges is limited to a maximum of 5 mills in a separate section of the statute. The definition of the student in attendance remains unchanged: 12 class hours/wk. for at least 30 days of each semester or quarter. An eligibility criterion for receipt of any state aid is that the college "maintains an enrollment at all times during all semesters or quarters for which payment is made of not less than 100 students."

Ohio - For 1974-75 the categories for state funding support and the rates were General Studies at $610/FTE student and Technical at $1134/FTE student. For 1975-76 the categories were expanded to three levels in each of the former two classifications. The new funding rates are: General Studies I at $480/FTE, General Studies II at $774/FTE, General Studies III at $1257/FTE, Technical I at $971/FTE, Technical II at $1173/FTE, and Technical III at $1886/FTE.

Oklahoma - The allocation for all the state colleges is determined in the budget analysis, request, and approval process. The total education and general expense (E. & G.) budget for a college is divided into three parts: (a) instructional programs, (b) organized research, and (c) extension and public service. The instructional programs to be offered are identified, the number of students by level to be enrolled are projected, and the cost per student by level and program is calculated. The computed costs of the instructional programs are aggregated and added to an assigned amount for research and an assigned amount for public service to yield the total E. & G. budget. The state allocation is the total minus estimated revenues from revolving funds.

The educational program cost calculations are based upon the estimated enrollments by program (30 credit hours = one FTE student), the assigned standard FTE students to FTE faculty ratio of 19.4/1, and a regional average 9 to 10 month faculty salary amount of $13,600 (for 1975-76). The combined amounts for research and extension to public service is approximately one percent of each respective college's instructional program portion of the budget.

Five of the six community colleges previously funded as locally controlled institutions have now been brought into the state system. One college remains under the provisions of the old method as amended. Sayre Community Junior College is eligible to receive 100 percent of the average per FTE allocation of State-appropriated funds for state junior colleges in the 1974-75, or $837.78/FTE student if state appropriations are sufficient.

Oregon - The funding method remains as it was in previous years. The state funding rates for the 1975-77 biennium are as follows: for 1975-76, the first 1100 state resident FTE are funded at $835/FTE, and

and the state resident FTE in excess of 1100 FTE are funded at $670/FTE; for 1976-77, the first 1100 FTE are funded at $900/FTE, and the FTE in excess of 1100 FTE are funded at $725/FTE.

Pennsylvania - The formula for state aid to community colleges is payment of one-third of the approved operating costs up to a maximum of $1500/FTE student multiplied times the number of FTE students enrolled in "liberal arts" programs plus $150/FTE student multiplied times the number of FTE students enrolled in "terminal non-liberal arts" programs.

Local districts taxing of real property is allowed for support of the colleges up to a maximum of five mills of market value. No minimum local tax support is specified as a requirement.

The capital outlay expenses which have been approved by the state are reimbursed at a rate of fifty percent of actual annual college capital expenditures. No expenditures relating to establishment, construction, or operation of dormitories are reimbursable from state funds.

Rhode Island - There is no reported formula. The state appropriation is equal to the approved budget minus projected revenues from other sources.

South Carolina - The allocation for all programs and functions is provided through $/FTE student rates established annually in the HEGIS categories for instruction. The total cost for instruction--both direct and indirect costs--is determined annually through a cost analysis performed by each college and submitted to the state. Funding computations are based on the $/FTE average cost in three size groupings of colleges. The $/FTE funding rates are established according to the cost ratios between instructional disciplines. Adjustments are made to actual statewide costs to

determine the budget-year funding rates. The adjustment factors are (a) change in cost-of-living, (b) equipment amortization, and (c) revenues from fees, local taxes, and federal grants.

The funding rates based upon the state's 1974-75 cost analysis vary widely. There are 170 program cost categories which appear on the Cost Analysis Report. The program cost per FTE varies from a high of $1913/FTE for Commercial Fishing to a low of $367/FTE for Basic Studies/GED. The summary indicates an average statewide cost of $810/FTE for technical programs and an average statewide cost of $473/FTE for continuing education programs. Secondary vocational education programs had a statewide average cost of $1.445 per contact hour, and community service programs had a cost of $1.076 per contact hour. Appropriated state funds are allocated to programs and colleges on the same basis and/or in the same proportional ratios as the program cost analysis and enrollment projections dictate.

South Dakota - No reported formula.

Tennessee - Funding for instruction and research is provided according to a schedule of $/credit hour rates which are differentiated by level of instruction into 30 discipline categories; 24 academic and six technical. The $/credit hour rates vary according to three parameters: HEGIS discipline; state assigned "level," level 1 to level 6; and "term of instruction," fall, summer, or special term. There are also separate rates for continuing education, CEU, eligible courses differentiated according to HEGIS discipline and term of enrollment; either fall term, or summer term. The rates are too numerous to list. There are 263 rates listed for credit courses and 40 rates listed for continuing education courses. Library services are funded at seven different $/student credit hour rates plus a

$/volume acquisition rate to make up numerical deficiencies in the library collection. The student services function is funded at a $/student head count rate $105/fall term student). Operation and maintenance of the physical plant is funded at a $/square foot rate (currently $1.68/square ft.). The functions of general administration and general institutional support are funded at a flat $/college rate plus a percentage of the unrestricted educational, general, and student aid funds allocated to each institution. A percentage adjustment for inflation is made on each funding cycle for the functions: (a) instruction and research, (b) library services, (c) student services, and (d) operation and maintenance of plant. Nonformula items funded on the basis of needs justification are (a) organized educational activities (farms, dairies, nurseries), (b) extension and public service, (c) staff benefits, (d) remedial education programs, and (e) separately budgeted research.

Texas - The allocation for all college program functions is provided through $/contract hour rates for instruction in 18 HEGIS academic and 29 occupational categories. The state board staff conducts periodic cost studies for analysis of formula funding rates. A student placement/follow-up and supply/demand information system is funded under vocational-technical education at the state agency level: not a college allocation, but provides for a college function.

The current funding rates are (Ct. Hr.= Contact Hours):

Vocational-Technical Program	$/Ct. Hr. 1976	$/Ct. Hr. 1977
Agriculture	$2.09	$2.23
Homemaking	1.20	1.78
Mid-Management	1.04	1.12
Restaurant Management	2.18	2.33
Other Distribution & Marketing	1.30	1.39
Business Data Processing	4.33	4.63
Secretarial & General Business	1.53	1.62
Other Office Occupations	2.57	2.75
Air Conditioning	1.46	1.55
Air Frame & Power Mechanics	2.17	2.32
Automotive	1.54	1.65
Fire Protection	1.20	1.28
Law Enforcement	1.35	1.63
Machine Shop	2.04	2.17
Welding	1.73	1.84
Other Industrial Education	1.51	1.61
Associate Nursing	2.28	2.43
Dental Assisting	1.78	1.89
Dental Hygiene	2.40	2.57
Vocational Nursing	1.15	1.23
Other Health Occupations	1.60	1.72
Career Pilot	4.34	4.63
Drafting & Design	1.80	1.92
Electronics	1.95	2.09
Marine Technology	4.77	5.09
Other Technical Education	2.51	2.67
Related (Inst.)	1.41	1.51
Adult Vocational	1.09	1.17
Adult Apprenticeship	1.23	1.32

General Academic Program	$/Ct. Hr. 1976	$/Ct. Hr. 1977
Agriculture & Natural Resources	$2.33	$2.54
Architecture & Environmental Design	1.67	1.83
Biological Sciences	1.22	1.34
Business Management	1.35	1.48
Communications	2.18	2.38
Computer & Information Sciences	2.89	3.16
Education	1.64	1.80
Engineering	1.72	1.88
Fine & Applied Arts	2.17	2.37
Foreign Languages	1.87	2.05
Health Professions	1.63	1.79
Home Economics	1.65	1.81
Letters	1.38	1.51
Library Science	1.94	2.13
Mathematics	1.50	1.64
Physical Sciences	1.43	1.57
Psychology	1.12	1.23
Social Sciences	1.23	1.35

Utah - No reported formula. Each college budget is negotiated.

Vermont - No reported formula.

Virginia - The basic budgeting formulas are set forth by the Governor through the State Budget Office. Funds allocation is a complex process involving the use of the formula and negotiations with the legislature by both state and local officials.

The major budget guidelines (a guidelines summary and not a formula per se) include: (a) a teaching faculty component using the nine month average salary ($13,110 for 1974-76) and two teacher/FTE student ratios, 1/15 for occupational students and 1/20 for college transfer students; (b) an administrative faculty component using the twelve month average salary ($17,699 for '74-'76) and a position to FTE students ratio of 1/75 FTE; (c) a library staffing component consisting of one professional position per 300 FTE students and two support staff positions per professional; (d) a component for permanent nonfaculty personnel excluding off-campus, library, physical plant, and instructional assistants--one position per 45 FTE students; (e) a component for library books including standard maintenance and volumes deficiency computations using the Clapp-Jordan formula--5% increase of the actual and/or volumes assessment at $15 per volume for inventory and deficiency makeup; and (f) additional other considerations for physical plant, continuing education, and other expenses--all based upon experience and projected changes in costs due to growth and inflation.

Washington - District allocations are based on percentages of the maximum support allowed by separate, detailed budget models for each of the five system-wide budget categories: Instruction, Libraries & Learning Resources, Student Services, Plant Maintenance and Operations, and Administration and General Expense.

The instruction model is based upon specified staffing ratios for each of 14 separate program classifications--7 academic and 7 vocational. The highest rate--for health occupations--is approximately 4.2 times the lowest rate--for education courses. Staffing ratios are converted to dollar allowances by multiplying the FTE faculty (FTEF) allowed by the model times a single average salary/FTEF ($14,084 average in 1975). The model allowance for instructional support staff is based on a set of $/FTE student rates for the 14 program classifications. The model allowance for nonstaff instructional support costs is based on another set of $/FTE student rates for the 14 classifications.

The Libraries and Learning Resources model is based upon such workload measures as FTE students enrolled, volumes cataloged, and number of faculty positions.

The Student Services model is based upon a minimum requirement of ten student services staff per campus plus additional positions for each increment of total headcount enrollments per campus.

The Administration and General Expense model is based upon a minimum requirement of four administrative staff per campus plus additional positions as a function of FTE students enrolled, vouchers processed and staff supported.

The Plant Maintenance and Operation model is based upon such workload measures as square feet maintained (janitorial), acres maintained (grounds maintenance) and actual man years of service required (police, fire and safety). Utility costs are supported at the full $/square foot rate plus the percentage increase necessary to reflect annual changes in building maintenance and utilities costs. Trucking cost allowances are based on a

percentage of nonstaff support costs for all five program categories. Plant maintenance administrative costs are based on a percentage of all salaries plus trucking costs in plant maintenance and operations.

Faculty and staff benefits allowed by the model are based upon a standard percentage applied to total salaries allowed by each of the five program models.

West Virginia - The formula portion of the funding allocation is only for professional and nonprofessional salaries in three functional categories: (a) instruction and research, (b) library services, and (c) administration and institutional support services. Funding for instruction and research professional positions is at a single $/position rate, and the nonprofessional support positions in this category are at another single $/position rate. One nonprofessional position is authorized for each six professional instruction and research positions. Differentiation of funding in instruction and research is achieved through use of four FTE students per faculty position ratios: (a) foundation level at 17 FTE per faculty position, (b) undergraduate lower-level health professions, health services and paramedical technologies at 12 FTE per faculty position, (c) undergraduate lower-level engineering, and mechanical and engineering technologies at 15 FTE per faculty position, and (d) all other undergraduate lower-level instruction at 23 FTE per faculty position. Administration and institutional support is funded at either five professional positions or a set percentage of the instruction and research salaries amount, whichever is the larger. Funding for library professional positions is either three positions or one position per 450 FTE students, whichever is the larger. Library professional positions are funded at a single $/position rate, and

library nonprofessional support positions are funded at another single $/position rate. Nonprofessional library positions are set at either six, or two per professional library position, whichever is the larger. The remainder of the state allocation is "nonformula" and depends upon justification of needs.

Wisconsin - The state aid formula is described as follows: After the statewide operational cost per full-time equivalent student is estimated by the state board, each college district's aidable cost (minus required student fees) is multiplied by 35%, and this product is multiplied times the district equalization index assigned by the State Board. The district aidable cost is defined as the anticipated fiscal year cost of operating a vocational, technical and adult education district, including debt service, but excluding all expenditures relating to auxiliary enterprises, self-support activities, and all expenditures funded by federal revenues.

In addition to the above aid, the colleges receive $0.40 for each student period of 50 minutes or more of actual attendance in driver training courses approved by the State Board. The Board may, however, in limited instances, choose to provide this aid based upon a minimum of 10 students per class period regardless of the number enrolled or actually attending classes.

The district boards are permitted to levy a tax, not exceeding 1.5 mills for the purpose of supporting capital and operating expenses of the schools in the district. The mill limitation does not apply for taxes levied for the purpose of paying principal and interest on outstanding bonds or notes. No minimum required millage levy is specified. In addition, there is provision for a 2% entitlement for equalized facility improvement (see 6704:6).

Student fees are set according to program type by the State Board. Liberal Arts Collegiate Transfer Program enrolees must pay fees based upon an amount equal to 25 percent of the board established statewide average operational cost of these programs for resident students. Program fees for postsecondary programs exclusive of collegiate transfer courses must be not less than seven percent of the statewide operational costs per full time equivalent student in these programs. Fees for Vocational-Adult programs must average not less than 25 percent of the district costs for these programs.

Wyoming - The state requires a minimum local college district funding effort per FTE student which is equal to the sum of a set $/FTE student rate, representing tuition, plus an amount equated to a four-mill levy on local taxable property. The local funding combined with the state allocation must equate to at least the statutory minimum foundation $/FTE student funding rates. The required foundation funding rates vary according to two rate decision parameters: (a) the FTE enrollment level of each college; and (b) the FTE enrollment in each of two curricular program categories, academic and vocational. The enrollment levels at which the foundation funding rates change are 500 FTE and 1500 FTE students. The $/FTE foundation rate for vocational students is 50% higher than the rate for academic students both in colleges of less than 500 FTE students and in colleges with greater than 500 FTE, but less than 1500 FTE. The $/FTE rate for vocational students is over 50% higher than the rate for academic FTE in colleges with more than 1500 FTE. The guaranteed foundation funding for colleges of less than 500 FTE students is from approximately 12% to 17% higher than for colleges with more than 1500 FTE: the percentage depending

upon the academic/vocational student mix. The foundation funding rates for colleges with more than 500 FTE, but less than 1500 FTE, are from approximately 6% to 11% higher than for colleges with more than 1500 FTE: again depending upon the student mix.

CHAPTER IV

A Model For Financial Support Of Community Colleges

Funding Concepts

The proposed model for state support of current operating expenses is a synthesized process evolving from the literature on community college purposes and financing, the current funding practices in the states, and research conducted by others on college costs and funding formulas. From the dominant themes identified in the literature, funding criteria were developed which the support process must satisfy. These are:

1. The state recognizes the community college as one of the primary delivery systems for providing publicly supported postsecondary education by providing all the public funds required for current operating expenses.

2. The state recognizes its responsibility for providing equal educational opportunity for all citizens through the community college by requiring an open door policy for admissions and by funding the full cost of all instruction regardless of level.

3. The state recognizes the importance of maintaining maximum sensitivity to community needs in the planning, programming, and operation of community colleges by delegating both the authority and the responsibility for college operations to local boards of trustees.

4. The state recognizes the advantages and benefits of a long-range, coordinated approach to postsecondary education by providing statewide coordination of a long-range, comprehensive plan for community colleges through a single state agency.

5. The state recognizes its responsibility for supporting with equal emphasis all programs designed to implement the goals of community colleges: (a) guidance, counseling, and placement; (b) community services; (c) general education; (d) career occupational education; and (e) university parallel education; by distributing state funds on the basis of an objective formula.

6. The state recognizes the public demand for accountability and the need for a unified management information system by providing leadership and full-cost funding for the development and implementation of such systems at both the statewide level and the institutional level.

From the survey and analysis of current funding formula practices in the states, and from research conducted by others on college costs and funding formulas, parameters applicable for differentiation of funding were identified. Those relating directly to differences in college operating costs include

1. Number of students enrolled;
2. Geographical location of campuses;
3. College status of development in terms of campus and curriculum;
4. Type of curricular program and/or distribution of instructional discipline enrollments; and
5. College program functions: (a) instruction and research, (b) extension and public service, (c) library and learning resources, (d) student services, (e) administration and institutional support, and (f) plant operation and maintenance.

Other funding concepts deemed appropriate for the model are related to state agency policy directly affecting college programs and operating expenses. The first of these is a policy on establishment of a contingency or reserve fund to act as a buffer in times of fluctuating enrollment: to serve as a safeguard against errors in estimating projected enrollments. Second is a policy on establishment of an opportunity grants fund to allow discretionary state agency funding incentives for the following (a) encouragement of efficiency in college management, and (b) encouragement of local initiative in establishing and maintaining special needs programs.

The Process Model

There are three distinct parts of the funding process model, and each part should be an assigned operation of the state agency responsible for community colleges. The three parts exhibited in Figure 1 are

1. The annual cost analysis of operations expenditures for each college;
2. The computation of the legislative appropriation request; and
3. The computation of each college's allocation of funds.

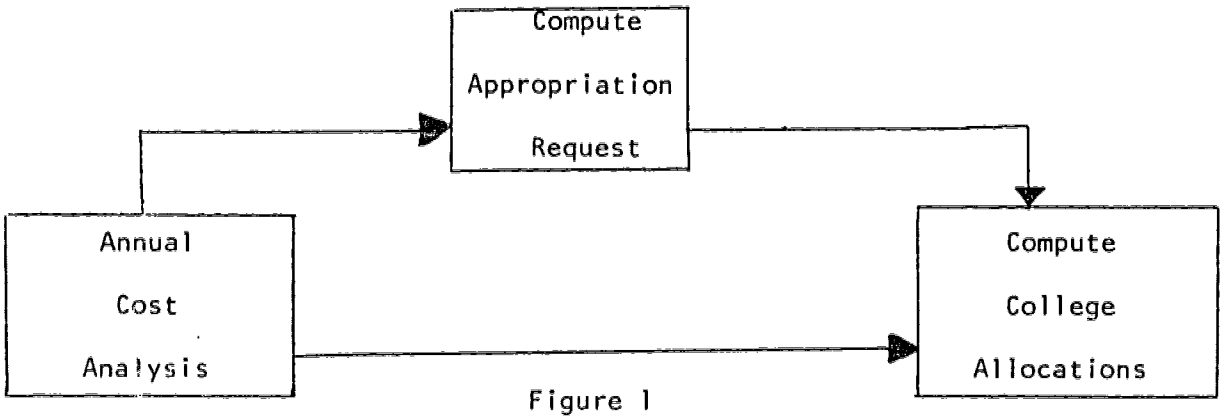

Figure 1

Community College Funding Process Model

Each part of the process is related to the other parts, but each is a distinct procedure and should not be intermixed or confused with the other process activities. Each part of the process involves a set of operations performed on a common data base. The purpose and design of each set of operations, however, should be exclusively a function of the objective for each respective part. The proposed objectives are presented in the following paragraphs.

The Annual Cost Analysis

Objective. The cost analysis is for determining the cost of current operations for each college and the distribution of expenditures among the cost centers within each college.

The cost analysis should be performed by the state agency staff to guarantee uniformity in treatment of data. Each college should provide a magnetic computer tape or a packet of punched computer cards containing all required data elements for the cost analysis. The data supplied by the colleges should be in a standard tape or card format specified by the state agency. The computer printed cost analysis reports should be sent to the colleges for their information and verification checks.

A cost analysis conducted at the state agency level with immediate feedback to the colleges would provide a service to the colleges. Centralization of this activity maximizes efficiency and accuracy of analysis, and in no way infringes upon local autonomy.

The determination of college cost centers for use in the cost analysis is appropriately a decision that must be made by each state based on its philosophy and experience. This determination, however, should be linked to the parameters used for differentiating funding in the college allocation

part of the process. The units of measure and the cost centers to which they are applied should relate directly to college functions, programs, and purposes. Use of intermediate or indirectly related measures, though acceptable for appropriation requests, are not acceptable for either cost analysis or college funding allocations.

The Legislative Appropriation Request

Objective. The appropriation request is for communicating in the best way possible the monetary needs of the state's community college system.

The communication should be most effective if it is in terms, facts, and figures that the individual legislators and their staffs easily understand. The more traditional, intermediate or indirectly related measures of financial need, where all costs are folded into an ADA or FTE student unit, are preferred.

Data from the cost analysis may be used to produce a statewide needs request at any level of aggregation deemed appropriate in a given state. The sophistication and desires of a state's legislature should dictate the state agency decision on form, format, and detail.

The College Allocation

Objective. The computation of the funding allocations is for equitable and objective treatment of each college based on its cost of operation and the state's goals and purposes for providing the community college level delivery system.

The allocations should be differentiated in accordance with parameters shared with the cost analysis part of the process. The funding parameters should represent direct measures of activity in the cost centers. The

funding units should be directly related to college functions, programs, and purposes.

Provisions should be included in the process to allow supplementary allocations based on merit for special projects. These allocations would be incentive grants for limited periods: one year to three years.

The Allocation Formula Model

Rationale

The Committee for Economic Development has stated that funding is appropriate if directed toward agreed-upon goals and is effective if consequences essential to achieving the goals are produced. Blocker and Bacon have indicated a chief weakness of current funding methods includes a lack of realistic support for community services, research and evaluation activities, and continuing education and development of faculty. Lombardi has addressed the question of expectations for expanded functions for community colleges--community services, career education, disadvantaged students services, . . . counseling and instructional innovations--that increase the cost of education, and he indicated most of the impetus comes from outside the colleges. Governmental bodies and agencies, private organizations and accrediting groups, and other educational institutions effect pressure for the expanded functions.

While expectations for community colleges to meet their stated goals and functions have increased, it has been noted that only a few states have dealt effectively with economies of scale, differential costs of alternative programs, or with an equitable allocation of resources in community colleges. Very little latitude for allocation of resources by a college is possible with funding patterns which encourage the status quo.

Three characteristics of most currently used formulas which cause the formulas to be detrimental in times of decreasing enrollment were listed by Boutwell as follows:

1. The formulas are linear: they are based upon the average cost per student.

2. Due to the economies of scale associated with large colleges, the formula rates have been adjusted downward.

3. Differentiation parameters are based upon the enrollment counts of students at different levels of instruction, but ignore cost differences among programs and/or disciplines.

Changes in formulas are needed to include economies of scale, program cost differences, and the operational cost differences between implementing new programs and maintaining existing ones. In particular, formulas should approximate the downward sloping cost curve.

The downward sloping cost curve, also referred to as the U-shaped average cost curve, is a generally accepted representation of the cost function in economic theory and in the application of economic theory to education. The curve represents average cost on the Y axis as a function of the level of output X and X^2. It represents a nonlinear economic relationship of the exponential form of a general quadratic equation, $Y = a\ x^2 + b\ x - c\ x\ y + d$. Nonlinear forms of economic relationships, including the quadratic, can be easily transformed into a convenient linear form and are widely used in econometrics.

The theoretical formulation of the cost function is a derivation from the production function, and most of the basic textbooks on economics contain a presentation showing the relationship between the cost function and the production function.

> A simple form for the cost function is a bevariate relation between total cost and levels of output. The total cost function
>
> $$C = P_1 X_1 + P_2 X_2 + \ldots + P_n X_n$$
>
> includes "C" as total cost and the X's as quantities of different inputs used to produce output, "Q". The P's are the respective prices of the X inputs.[1]

The production function application has been suggested for education in the following form,

$$Q = f(B, X_1, X_2, \ldots X_n)$$

where Q represents educational output, B represents the characteristics of the learners, and variables X_1 through X_n represent all of the other human and material resources employed to produce the educational outcomes. Production costs are determined by multiplying the units for each factor used in the production process times each respective unit's cost, and the sum of both fixed and variable costs equals the total cost of production.

The relationships of fixed costs, variable costs, and the total cost of production as production increases are graphically represented by the U-shaped cost curve in Figure 3. In the application to education, the units of production are represented by indirect measures of output. The analogy is made for units of student measure and units of measure for instruction to be the units of production. Education is what is produced, but student-time units and/or instruction-time units are used for measures.

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[1] Teh-wei Hu, Econometrics: An Introductory Analysis (Baltimore: University Park Press, 1973), pp. 109-110.

Hu, Kaufman, Lee and Stromsdorfer have said,

> If a production process is under the decreasing-average-cost condition throughout the relevant range of output, it may be more efficient for government to operate this process. To prevent inadequate use of facilities, where decreasing costs are persistent, government should provide the product free of charge or charge a price equal to marginal cost.[2]

This may be construed to mean that, for education, government should assume the full cost for operations occurring in the range of enrollments falling under the downward sloping portion of the cost curve.

Looking again at the total cost function,

$$C = P_1 X_1 + P_2 X_2 + \ldots + P_n X_n$$

as commonly accepted for econometric applications, a comparison of business-industry versus public education operational rules are in order. In most empirical business-industry cost-function studies, variables for input prices $P_1, P_2, \ldots P_n$ are not included in the model. The theoretical argument for this omission is that if the market is competitive, then the price of any given input is equal for all firms; and the input-price variables can be deleted. In the case of public colleges, the theory of the firm would not hold true. The market is not competitive, but is instead restrained by the regulations, policies, and funding rates established by the state. The input-price variables for the model would be different from college to college and, therefore, must be included.

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[2]Teh-wei Hu, Jacob J. Kaufman, Maw Lin Lee, & Ernst W. Stromsdorfer, "The Theory of Public Expenditures for Education," Education and the Economics of Human Capital (New York: McMillan Co., Free Press Div., 1971) p. 93.

To achieve equity in the allocation of state funds among community colleges in a state, the allocation formula should relate directly to the cost of operating the individual colleges. The allocation formula should represent a mathematical model for a function which is analogous to the cost function,

$$C = P_1 X_1 + P_2 X_2 + \ldots + P_n X_n;$$

and the production function,

$$Q = f(X_1, X_2, \ldots X_n).$$

The Model

College costs include distinct elements which may be represented as program cost centers: each PX element of the traditional cost function. Each PX element of the traditional cost function represents the price P and the X quantity input for a cost center. Recognition of each of these elements by including them in the allocation formula attests to the equal importance of each in the community college delivery system, and maximizes equity in funding.

Replacing total cost C with the total allocation T, and replacing each PX cost element with a funding rate R times a program unit measure for the production of a service S, an allocation model may be expressed

$$T = R_1 S_1 + R_2 S_2 + \ldots + R_n S_n$$

for "n" number of program functions.

The program functions identified in the literature, in research on community college costs, and in the current funding practices of the states are

1. instruction--credit and noncredit;
2. extension and public service programs in continuing education and community services;

3. student services;

4. library and learning resources;

5. administration and general institutional support; and

6. operation and maintenance of the physical plant.

If an element is added to take care of special projects not readily classified under the other programs, the allocation model becomes

$$T = R_1 S_1 + R_2 S_2 + R_3 S_3 + \ldots R_7 S_7$$

where

$R_1 S_1$ = the amount for credit and noncredit instruction in the HEGIS disciplines;

$R_2 S_2$ = the amount for extension and public service programs in continuing education and community services;

$R_3 S_3$ = the amount for student services;

$R_4 S_4$ = the amount for library and learning resources;

$R_5 S_5$ = the amount for administration and general institutional support;

$R_6 S_6$ = the amount for operation and maintenance of the physical plant; and

$R_7 S_7$ = the amount for special projects.

In the case where a state provides for the full cost of operating its community colleges, the single rate R and the single unit measure S for each element could appropriately be used as indicated in the simple summation equation for the seven program elements.

If, however, the state does not provide the funding for the full cost of operations for each college, and the individual colleges have developed under conditions of self-determination with respect to curriculum and campus planning, expansion of certain R S elements and inclusion of specific element adjustment factors would be necessary in order to meet the objective of

equitable funding. The differential funding parameters relating to college status of development, geographical location, college size and structure, and curricular program profile must be included.

Expansion of $R_1 S_1$. The direct cost of instruction--faculty salaries and fringe benefits--have been documented to be the largest element of cost incurred in college operations. Research has also shown the cost of providing instruction varies among the disciplines used to categorize curricula. If S_1 represents the units of service produced in instruction and R_1 represents a funding rate for all instruction, $R_1 S_1$ as the instructional funding element may be differentiated into the units of service produced (s) in each instructional discipline and the corresponding funding rate (r) required for each discipline.

$$R_1 S_1 = r_1 s_1 + r_2 s_2 + \ldots r_m s_m = \sum_{d=1}^{m} (r_d s_d)$$

for "m" number of disciplines (d).

The direct measure for instruction is the contact hour. The contact hour of instruction represents teacher and students in an instructional process for a period of time. The credit hour is computed from the number of contact hours of instruction and may be used as an alternate measure of instructional service. If the credit hour is used in the formula, it should have a clearly defined credit hour equivalent for noncredit instruction which does not penalize the funding for noncredit courses. The FTE student and the instructional position are not considered to be direct measures of instructional activity and, therefore, are not recommended.

Further expansion of the instructional element of the model to include the indirect costs of instruction and adjustment factors for direct cost variations between colleges is necessary. The forty to sixty percent of total college expenditures attributed to this function dictates a necessity for finely detailed discrimination factors in this funding element. The following adjustment factors are considered:

F_1 = an adjustment factor for high incidence of faculty with high years of teaching service;

F_2 = an adjustment factor to encourage maintenance of marginal class size; and

F_3 = an adjustment factor to encourage maintenance of marginal teacher contact hour loads.

The funding for instructional support--the indirect cost of instruction--may be either a single rate based on an average cost per hour or a set of rates dependent upon disciplines as is the case with the direct instructional costs.

The allocation, $R_I\ S_I$, for credit and noncredit instruction in the HEGIS disciplines is expressed in the final form as

$$R_I\ S_I = \sum_{d=1}^{m} (r_d\ s_d)\ (1 + F_1 + F_2 + F_3) + r_k\ s_k$$

where

$$F_1 = \frac{\frac{\text{Coll. Median Teacher Yrs.}}{\text{S.W. Median Teacher Yrs.}} + \left|1 - \frac{\text{Coll. Med. Teacher Yrs.}}{\text{S.W. Med. Teacher Yrs.}}\right| - 1}{20}$$

$$F_2 = \frac{\frac{\text{Coll. Med. Class Size}}{\text{S.W. Med. Class Size}} + \left|1 - \frac{\text{Coll. Med. Class Size}}{\text{S.W. Med. Class Size}}\right| - 1}{20}$$

$$F_3 = \frac{\frac{\text{Coll. Med. Teaching Hrs.}}{\text{S.W. Med. Teaching Hrs.}} + \left|1 - \frac{\text{Coll. Med. Teaching Hrs.}}{\text{S.W. Med. Teaching Hrs.}}\right| - 1}{20}$$

$d = 1$, $d = 2$, ... $d = m$; are all the HEGIS disciplines

$r_1, r_2, r_3, \ldots r_d$ = the direct cost funding rates for the HEGIS disciplines (d)

$s_1, s_2, s_3, \ldots s_d$ = the instructional hours produced in the HEGIS disciplines (d)

r_k = the funding rate for all instructional support

s_k = the total instructional hours in all disciplines

The value ranges of F_1, F_2, and F_3 are limited by the absolute value part of each function and, therefore, limit the range of values for the multiplier $(1 + F_1 + F_2 + F_3)$ as follows:

$0 \leq F_1 \leq 0.1$, $0 \leq F_2 \leq 0.1$, $0 \leq F_3 = 0.1$, and $1 \leq (1 + F_1 + F_2 + F_3) \leq 1.3$.

With the lowest possible values of F_1, F_2, and F_3 being zero and the highest possible values set at one tenth, the lowest value of the adjustment factor multiplier would be one, and the highest value of the multiplier would be one and three tenths. No college would be penalized for having lower median values for teacher years of service, class size, or teacher contact hours, but a funding incentive would exist to encourage median class sizes and median teacher contact hour loads above the statewide (S.W.) median values. Older colleges with large numbers of faculty having high years of service would have their funding enriched based upon their median years of service being higher than the S.W. median years of teaching service. Any tendency for colleges to employ teachers with high years of service in order to profiteer would be self-limiting. A state need only adjust the divisor--the number 20 in each F function--upward or downward in order to set the maximum possible values desired for F_1, F_2, and F_3.

Expansion of $R_2 S_2$. The amount for this element in the model is the sum of the continuing education units (C.E.U.'s) produced by a college multiplied times the state funding rate for C.E.U.'s, plus the amount generated at a contact hour rate for other community services activities. The C.E.U. is defined as 10 contact hours of noncredit educational activity.

$$R_2 S_2 = r_e s_e + r_c s_c$$

$$R_2 S_2 = \left(\frac{\$}{\text{C.E.U.}}\right)\left(\text{C.E.U. total}\right) + \left(\frac{\$}{\text{Contact Hr.}}\right)\left(\text{Contact Hr. total}\right)$$

where

r_e = C.E.U. funding rate; and r_c = community service funding rate.

Explanation of $R_3 S_3$. The amount for student services is a function of the number of individual students enrolled in a college. Student services are client oriented activities provided for real persons during finite periods of time. Many of the client services needed by the individual are equally needed by both part-time and full-time students. Functions shared with community services--counseling for example--are more equitably funded on a per person or per contact hour basis. Therefore

R_3 = a \$/capita student rate based on cost analysis;

S_3 = the total student head count of students served; and

$R_3 S_3$ need not be further expanded.

Explanation of $R_4 S_4$. The amount for library and learning resources is a function of total students enrolled and the total number of teaching faculty. The funding should relate directly to the number of

individuals served, but accounting for services rendered is not an economically feasible endeavor. Therefore, an approximation based upon use by the total student body and the faculty should be derived. A statewide per capita student rate is recommended for use as follows

$$R_4 S_4 = \left(\frac{\$}{\text{Capita Student}}\right)(\text{Total Student Headcount})$$

Expansion of $R_5 \cdot S_5$. The costs of administration and general institutional expenses in a college may be considered dependent upon two major factors: (a) the decision to have a college or not to have one, and (b) the organization and structure for operating the college and providing support services. The decision to have a college exist dictates that certain administrative and support functions must be provided. The model should include a block grant amount sufficient to establish and maintain the first and second levels of administration for all college functions. In the case of multi-campus colleges, the third level of administration should be included. Funding at a \$/campus rate (r_s) for this purpose could guarantee equity in supporting the costs that are immediately present after the decision is made to provide a college or an additional campus. The remainder of administrative expenses and general institutional support should be funded based upon units of service provided to students. The suggested unit of measure recommended for the model is the student head count per year: an approximation related to student-years of service provided. The state should set an administrative and institutional support funding rate (r_a) based upon cost analysis data. The element $R_5 S_5$ thus becomes

$$R_5 S_5 = r_s s_s + r_a s_a$$

$$R_5 S_5 = \left(\frac{\$}{\text{campus}}\right)\left(\text{Number of Campuses}\right) + \left(\frac{\$}{\text{Capita Student}}\right)\left(\text{Annual Student Headcount}\right)$$

Expansion of $R_6 S_6$. A college's fixed costs for the operation and maintenance of the physical plant may be dependent to a large degree upon factors and decisions external to the local management of an institution. Certain current costs are dependent upon capital construction decisions made prior to a current year of operation, and upon utility rate decisions made by others. Local college management may only decide whether to use and/or maintain a facility, and decide what personnel positions are required. Under full state support, the state should shoulder the responsibility for the cost of operation and maintenance of its capital investment.

Considering that a state's colleges may be served by different utility companies, that the type of facility construction and age of facilities affects cost of providing services; the funding for plant operation and maintenance should be based on campus facility factors. The model element $R_6 S_6$ becomes

$$R_6 S_6 = (r_p s_p)\ (F_4) + (r_o s_o)\ (F_5) \text{ where}$$

r_p = the state funding rate in \$/square foot for physical plant and ground maintenance;

r_o = the state funding rate in \$/square foot for physical plant operations;

s_p = the total square footage area of permanent college facilities maintained;

s_o = the total square footage area of both rented and permanent college facilities used;

$$F_4 = 1 + \left(1 - \frac{\text{S.W. Average Cost of Plant Maint./sq.ft.}}{\text{College Avg. Cost of Plant Maint./sq.ft.}}\right)$$

$$F_5 = 1 + \left(1 - \frac{\text{S.W. Avg. Cost of Plant Operations/sq.ft.}}{\text{College Avg. Cost of Plant Oper./sq.ft.}}\right)$$

The value ranges of F_4 and F_5 are limited to positive values only: that is, only the values above zero would apply. If the statewide (S.W.) average cost per square foot is two times the individual college's average cost per square foot, the value of either F_4 or F_5 would be 1.8. As the average college cost per square foot increases beyond ten times the S.W. average cost, the maximum value of F_4 or F_5 approaches the limit of 2.0. Therefore: $0 \leq F_4 \leq 2$ and $0 \leq F_5 \leq 2$.

Explanation of R_7 S_7. The special grants element R_7 S_7 of the model should be used to fund the costs for statewide projects initiated at the state agency level and meritorious projects proposed for initiation by individual colleges or consortia. The state should use incentive grants for initiation and implementation of statewide projects--a statewide change to a new management information system for example--and for continued funding during a limited period of adoption and adjustment. Incentive grants based upon enrollment measures could be used to encourage colleges to improve the percentages of minority or disadvantaged student enrollments.

The availability of opportunity grants should encourage local initiative in proposing projects and programs designed specifically to meet identified local needs. The higher start-up costs related to new program initiation could be funded through the opportunity grants mechanism, and continued funding after an appropriate implementation period would become a part of the cost analysis related process.

The model element is left in the R S form representing funding rate times units of service to encourage projection of cost analyses on special grants projects. Some estimate of units of service and the relationship of service provided versus total cost should be required. Funding should

follow the same pattern.

$$R_7 S_7 = \text{Incentive Grants} + \text{Opportunity Grants}$$

The final form of the allocation model is exhibited in Figure 2.

Allocation Rate Determinations

The statewide average costs for each of the elements in the formula:

$$T = R_1 S_1 + R_2 S_2 + R_3 S_3 + R_4 S_4 + R_5 S_5 + R_6 S_6 + R_7 S_7$$

should be calculated in the cost analysis phase of the process. The funding rates for each factor should be calculated from the statewide average costs for the respective factors. The total state allocation minus the funding for special projects is

$$T - R_7 S_7 = R_1 S_1 + R_2 S_2 + \ldots + R_6 S_6.$$

The resulting value for $T - R_7 S_7$ is the sum of a set of linear equations of severable variables which contribute to the overall cost of operation of the colleges of the state. The sum of the several independent linear functions tends toward the total cost per unit curve recognized by some authorities as "the downward sloping cost curve." In Figure 3, the cost curve represented by a graph of dollar cost per unit versus a unit measure such as FTE students tends to fit the image of a quadratic equation of the forms

$$a X^2 + bX - cXY - mY + n = o$$

or

$$a X^2 - bXY + c = o$$

where

x = the composite independent variable representing a unit measure like FTE students,

y = the dependent variable representing $/unit

and

"a", "b", "c", "m" and "n" are coefficients dictated by the conditions in a specific state.

Figure 2

Community College Allocation Formula Model

$$T = R_1 S_1 + R_2 S_2 + R_3 S_3 + R_4 S_4 + R_5 S_5 + R_6 S_6 + R_7 S_7$$

$$T = \sum_{d=1}^{m} (r_d s_d)\ (1 + F_1 + F_2 + F_3) + r_k s_k + r_e s_e + r_c s_c + R_3 S_3 + R_4 S_4 + r_s s_s + r_a s_a + (r_p s_p)\ (F_4) + (r_o s_o)\ (F_5) + R_7 S_7$$

T = Total Allocation

$$* F_1 = \frac{\frac{\text{Coll. Median Teacher Yrs.}}{\text{S.W. Median Teacher Yrs.}} + \left| 1 - \frac{\text{Coll. Median Teacher Yrs.}}{\text{S.W. Median Teacher Yrs.}} \right| - 1}{20}$$

$$* F_2 = \frac{\frac{\text{Coll. Median Class Size}}{\text{S.W. Median Class Size}} + \left| 1 - \frac{\text{Coll. Median Class Size}}{\text{S.W. Median Class Size}} \right| - 1}{20}$$

$$* F_3 = \frac{\frac{\text{Coll. Median Teaching Contact Hrs.}}{\text{S.W. Median Teacher Contact Hrs.}} + \left| 1 - \frac{\text{Coll. Median Teaching Contact Hrs.}}{\text{S.W. Median Teaching Contact Hrs.}} \right| - 1}{20}$$

$$* F_4 = 1 + \left(1 - \frac{\text{S.W. Aver. Cost of Plant Maintenance/Sq. Ft.}}{\text{College Aver. Cost of Plant Maintenance/Sq.Ft.}} \right)$$

$$* F_5 = 1 + \left(1 - \frac{\text{S.W. Aver. Cost of Plant Operations/Sq.Ft.}}{\text{College Aver. Cost of Plant Operations/Sq.Ft.}} \right)$$

* The range of values are limited to positive values only for F_1, F_2, F_3, F_4, F_5.

Figure 2 continued

$r_d = r_1, r_2, \ldots r_m$ = the direct cost funding rates for each of the "m" number of HEGIS disciplines of instruction

$s_d = s_1, s_2, \ldots s_m$ = the instructional hours produced in each of the HEGIS disciplines

r_k = the funding rate for all instructional support

s_k = the total instructional hours in all disciplines

r_e = the C.E.U. funding rat

s_e = annual total C.E.U.'s awarded

r_c = community services funding rate

s_c = total contact hours of community services

R_3 = funding per capita student for student services

S_3 = total student head count for student served

R_4 = funding per capita student for library services

S_4 = total student head count for students served

r_s = funding per campus site

s_s = number of campus sites

r_a = funding per capita student for administrative services

s_a = total student head count for students served

r_p = funding per sq. ft. for maintenance of physical plant

s_p = total sq. ft. of permanent facilities maintained

r_o = funding per sq. ft. for operation of physical plant

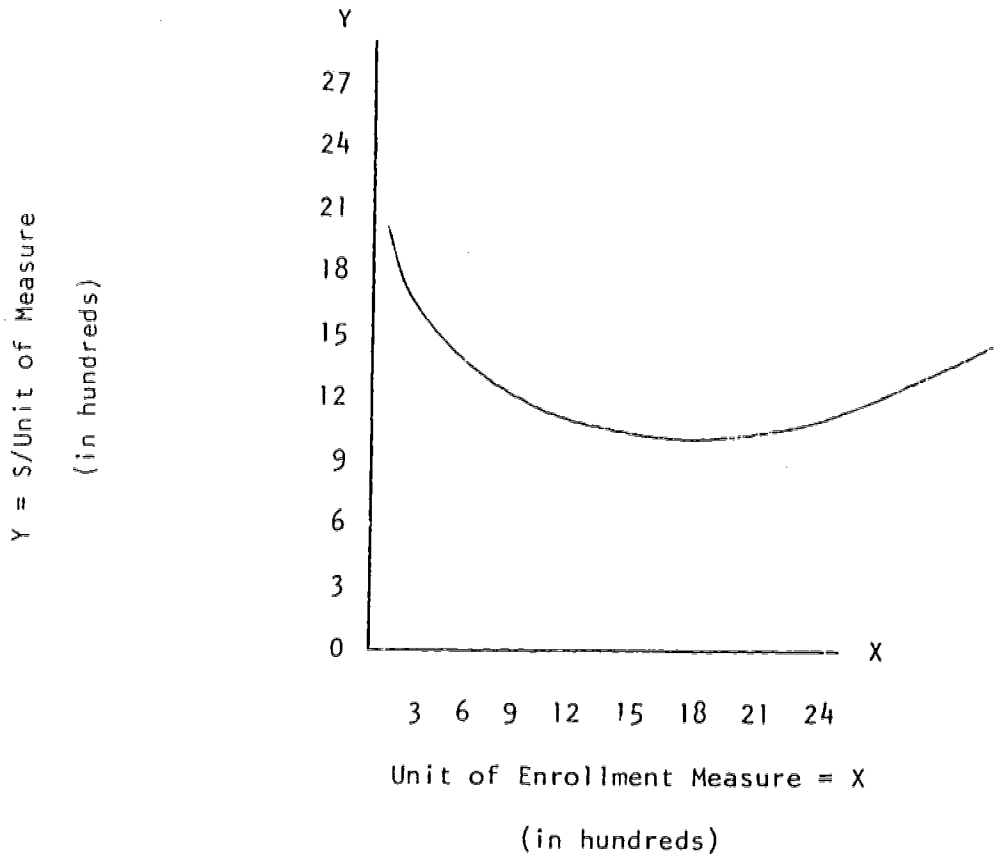
s_o = total sq. ft. of rented and permanent facilities used

R_7 = funding rate for special projects

S_7 = unit of service measure for special projects

Figure 3

The Statewide Average Cost Curve



$f(X) = aX^2 + bX - cXY + d$

where

Y = f(X)

a = constant

b = constant

c = constant

d = constant

The statewide cost per unit of measure and, therefore, the statewide total allocation computation should incorporate the quadratic function fitting the curve for statewide average costs for all colleges. An attempt to oversimplify the functional relationship to a linear relationship of the form

$$Y = m X + b$$

where

Y = dollar costs per unit

X = a unit measure like FTE students,

and

"m" and "b" are constants for a single year, can only result in repeated exceptions to funding formula provisions when college needs can not be met.

The total state allocation requested in the legislative appropriation request process should relate to the more accurate representation of cost variance that can be depicted through annual analysis as a quadratic equation curve. Each individual state can determine the values of the coefficients for the equation and can make its own best determinations about inclusion or deduction of factors such as (a) student fees, (b) federal funds, (c) equipment amortization, and (d) cost of living adjustments.

Chapter V

The Future

The level of financial support for higher education has been reported by almost all observers as inadequate since the early 1970's. In a number of states this lack of adequate support has applied to community colleges and senior colleges alike; in other states, however, there has been a more favorable attitude and resultingly more positive support for the community colleges than for other levels of higher education. The community colleges are affected, however, by the attitudes toward higher education which are generally held in a state.

It is an anomaly, perhaps, that after struggling for 50 years to become an accepted member of "higher" rather than "secondary" education, the community colleges now find themselves accepted as a part of the level of education for which the public has the most serious questions.

Limits on Enrollment

The dominant themes identified in the community college literature and the funding criteria developed therefrom provide a basis for the sound expansion of educational opportunity at this period in the twentieth century. The commitment on the part of the legislatures is not so clear, however. State after state has experienced pressures to limit enrollments by one method or another. These may be described as follows:

1. Limitations on programs. This is often accomplished through requiring state agency approvals or by the legislature specifying that certain programs will be excluded from state support.

2. Financial caps on funds made available. This is accomplished by appropriating a specified amount which is not corrected in subsequent sessions thereby throwing any additional support for students back to the local institution.

3. Legislative limits placed on number of students who may be supported. This is accomplished by a simple statute or by limiting increase to a set percentage of existing enrollment.

4. Legislative limits placed on functions which may be supported. This is accomplished by excluding or limiting part time enrollments, or noncredit course enrollments, by limiting the age groups who may be supported, or limiting the time of day for which FTE may be reported.

The future. Even though more current writers in the community college field are giving heavy emphasis to "community based community services," the support patterns for these programs and courses will continue to lag. Community college services will be limited by the available financial support provided from the state legislatures and/or local sponsoring agencies; many services will be curtailed even though there is identified need for them.

Increased State Support

Historically, community colleges have had a strong local orientation, though the trend for financial support has been toward more support from state sources. The use of local property taxes as a major source of support has decreased for many reasons which are not associated with community college philosophy at all. The concern for equalizing opportunity for all citizens within a state has been a major factor in moving to state-level support.

An emphasis upon statewide planning has resulted in statewide responsibility instead of local responsibility.

The future. There will be, unless current trends are reversed, an increase in the amount of state support for community colleges with an accompanying decrease in the amount of local support. The effects this action will have upon the governance structure will vary from state to state. Some states will, like Florida, maintain a strong local control; other states will move to more state domination, not because of state support necessarily, but because of the state leadership's desire to exercise more direct influence upon total expenditure and operational policies of the institution. Increased state support will provide a rationale for intended action which would likely be accomplished in any case.

Accountability

The continuing emphasis upon accountability measures has been a specific product of the trends in planning at the state level. The need to measure outcomes, to compare them with inputs, to compute cost efficiency and/or cost effectiveness, to evaluate the effect of alternative actions--these represent the attitudes and expectations of those who allocate funds whether they come from local or state sources. The potentials of the computer enable college administrators to analyze information in ways that were previously too time consuming to be practical. This provides a sound basis for selecting alternative actions in a variety of situations.

The future. There will be increases emphases upon accountability and the measurement of outcomes. Although currently Management Information Systems (MIS) definitions are vague in most states, the need for comparable information

will tend to force some commonalities in definition. Simulation will be used more and more often at state as well as institutional levels. The use of common MIS definitions will permit comparisons which will be misinterpreted and even misused unless there is an adequate understanding of community college programs and operations.

Sources of Support

As has been noted there will be an increasing shift from local to state support for community colleges. Another tradition, that of maintaining no or at least low tutition for students attending these institutions, is receiving serious examination. The tendency to increase tuition at least in line with increasing costs is almost universal. In only a very few instances have the community colleges actually been able to reduce the portion of total costs that students provide by any appreciable amount. The range between a low of 5% up to almost 40% of the current operating expenditures has been typical in most states for many years. Only one state, California, has even attempted to maintain a semblance of "free" tuition--Hawaii, Oregon, and Puerto Rico also report, however, no income for current operation from this source (See Table I, Appendix A). Lombardi refers to the no-tuition or low-tuition philosophy as a myth. Terhune recently noted that increasing tuition had more deleterious influence upon the attendance of part time minority students than upon the enrollment of the full time enrollees. Studies by several major organizations have recommended increased student tuition. This variety of positions results in a confused picture of the probable future.

The future. It is safe to predict, however, that tuition is not likely to be eliminated within a foreseeable future. Several states have placed ceilings

upon the funds which may come from this source. Student financial aid programs will continue to receive a great amount of attention and the availability of money for low cost student loans will continue to be important. Tuition will continue to increase as costs increase but at a slower rate.

Cost Based Support Formula

This report indicates that sixteen states have based their support formulas upon some type of cost based analysis. These vary a great deal. Even several of the states which were otherwise classified indicated some form of differential support which was related to costs. The technique for arriving at realistic costs and then for applying this information in some type of support formula is not always well developed. The availability of computers for analysis, for simulation, for other computations make this methodology possible, however, for the first time in these recent years.

The future. Increasingly the state-level agencies will require a common data base which can be used in developing cost analysis. Support programs will allocate funds to institutions based upon the relative proportions of their program as compared with relative costs. The incentive to emphasize the less expensive programs will be removed, thereby permitting the individual colleges to develop more occupational programs needed by their own communities. Other services will also be included in these cost analyses.

Collective Bargaining

An increasing number of states have provided a legal basis for collective bargaining. While in most instances the students have no designated or specific part to play in this process, there have been expressions of student interests

and concerns especially when services are withheld or are considered for withholding. The current practice of institutional bargaining has been modified in one or two states where bargaining was carried out at the state level. The implications these procedures have for student input as well as the anomalous position of the institutional administration clouds the issues as the contracts affect institutional budgets and the allocation of resources within those budgets.

The future. The picture is unclear. Collective bargaining as a procedure will likely increase in its effect upon a number of institutional budgets. The restrictions thus placed upon the institutional decisions relative to allocating resources will become an important factor in determining expenditures but not necessarily equally important in developing support formula allocations. This dichotomy may become unacceptable and definite relationships between allocating funds to an institution and the expenditures of these funds will require increasing state-level influences over budget expenditures, an indirect but specific result of collective bargaining.

Summary

These comments about the future are speculation. They are based, of course, upon the discernable trends one may identify in the current situation. Whether or not they develop as described herein will be dependent upon factors which cannot be clearly identified at this writing. It appears that:

1. There will be limits placed on total enrollments within the immediate future.

2. There will be increased state support accompanied by decreased local support.

3. There will be increased provision for accountability as a requirement. This will result in a more completely developed Management Information System.

4. Student tuition will not be decreased or eliminated.

5. The use of cost based support formula will increase.

6. Collective bargaining procedures will cause more state imposed restrictions on institutional expenditures.

APPENDIX A

1975-76 Statistics

1974-75 Statistics

TABLE I

Support for Current Operations in States Reporting 1975-76

Sources of Funds (in thousands of dollars)

STATE	FEDERAL FUNDS	STATE APPRO-PRIATIONS	LOCAL DIST. TAX	TUITION & FEES	GIFTS & OTHER SOURCES	TOTAL
Alabama	7,492	21,465	--	8,360	7,478	44,795
Alaska	--	7,400	--	1,494	497	9,391
Arizona	592	29,610	33,115	2,266	4,176	69,759
Arkansas	202	7,106	--	1,305	199	9,113
Colorado						
State	1,010	20,028	--	5,312	--	26,350
Local	272	4,073	3,168	1,539	--	9,051
Connecticut	2,433	21,034	--	2,955[a]	21	26,443
Delaware	350	9,605	--	743[a]	--	10,698
Florida	11,500	152,834	--	49,972	2,625	214,930
Georgia	--	20,280	--	6,988	198	27,467
Hawaii	4,131	17,278	--	--	665	22,074
Illinois	4,854	80,600	78,629	37,577	9,217	210,878
Indiana	358	3,023	76	1,943	481	5,880
Iowa	14,990	35,812	6,955	14,381	2,383	74,520
Kansas	560	9,681	18,111	4,624	--	32,975
Kentucky	1,777	7,212	--	4,492	--	13,481
Maryland	11,535	37,585	28,748	25,734	1,908	105,510
Minnesota	3,373	24,276	--	8,040	245	35,934
Mississippi	4,839	26,944	7,571	6,750	1,896	48,000
Missouri	6,000[e]	18,008	25,200[e]	12,000[e]	--	60,000[e]

NOTES:
a = Tuition and Fees are returned to the state general fund.
e = Estimated.
(A few states have submitted 1974-75 statistics. Compare Table V with this table to fill in several gaps)

TABLE I (continued)

Support For Current Operations in States Reporting 1975-76

Sources of Funds (in thousands of dollars)

STATE	FEDERAL FUNDS	STATE APPRO-PRIATIONS	LOCAL DIST. TAX	TUITION & FEES	GIFTS & OTHER SOURCES	TOTAL
New Jersey	--[b]	31,813	39,303	26,459	4,980[c]	102,556
New Mexico	353	2,282	2,259	2,274	197	7,366
New York	--[b]	83,204	68,711	65,031	9,552[c]	226,498
North Dakota	No Funds or tax information submitted on Survey Form					
Ohio	--	23,082	23,000[e]	23,000[e]	--	69,082[e]
Oklahoma	-0-	17,309	2,965	4,367	1,179	25,819
Oregon	905[e]	32,042	--	--	--	32,947[e]
Pennsylvania	3,500	28,890	20,390	26,420	4,520[d]	83,620
Rhode Island	231	9,047	--	2,183	1,269	12,731
S. Carolina	8,994	24,674	3,510	7,583	3,156	47,918
Tennessee	806	15,997	--	4,247	2,375	23,435
Utah	534	10,599	--	2,600	710	14,444
Washington	15,857	101,627	--	(Combined =	14,478)	131,962
W. Virginia	443	4,265	--	1,970	221	6,900
Wisconsin	9,490	30,191	63,895	13,055	--	116,630
Wyoming	--	20,301	8,980	4,003	782	34,065
Puerto Rico	105	16,505	--	--	49	16,660

NOTES:
b = "Federal Funds" are included with "Gifts & Other Sources."
c = Includes "Federal Funds."
d = Includes some federal funds.
e = Estimated.

TABLE II

Support for Capital Outlay in States Reporting 1975-76

Sources of Funds (in thousands of dollars)

STATE	FEDERAL FUNDS	STATE APPRO-PRIATIONS	LOCAL DIST. TAX	TUITION & FEES	GIFTS & OTHER SOURCES	TOTAL
Alabama	--	5,443	--	--	--	5,443
Alaska	--	670	--	--	--	670
Arizona	83	7,209	2,408	--	5,961	15,660
Arkansas	-0-	--	467	-0-	--	467
Colorado						
State	--	763	--	--	--	763
Local	8	125	98	48	--	280
		888				1,043
Connecticut	--	8,901	--	--	--	8,901
Delaware	449	2,454	--	--	--	2,903
Florida	--	30,754	--	--	--	30,754
Hawaii	--	18,429	--	--	--	18,429
Illinois	--	35,250	20,000[e]	--	--	55,250[e]
Indiana	254	913	--	--	262	1,429
Iowa	--	--	8,561	--	--	8,561
Kentucky	--	11,200	--	--	--	11,200
Maryland	—	10,519	10,519	--	--	21,038
Minnesota	--	-0-	--	--	--	--
Mississippi	1,000	--	4,000	350	50	5,400
Missouri	--	-0-	--	--	--	--

NOTE:
e = Estimated.

TABLE II (continued)

Support for Capital Outlay in States Reporting 1975-76

Sources of Funds (in thousands of dollars)

STATE	FEDERAL FUNDS	STATE APPRO-PRIRATIONS	LOCAL DIST. TAX	TUITION & FEES	GIFTS & OTHER SOURCES	TOTAL
New York	--	53,668	53,668	--	--	107,336
Ohio	--	17,711	--	--	--	17,711
Oklahoma	-0-	6,826	40	-0-	146	7,012
Oregon	--	12,000[f]	--	--	--	12,000[f]
Pennsylvania	--	10,100	10,100	-0-	--	20,200
Rhode Island	--	3,650	--	--	--	3,650
S. Carolina	3,706	4,441	2,472	--	--	11,758
Tennessee	--	3,540	--	--	--	3,540
Utah	--	14,468	--	--	--	14,468
Washington	--	29,000	--	(combined = 2,000)		31,000
Wisconsin	1,950	4,322	14,969	--	--	21,240
Wyoming	--	8,127[g]	9,178	--	--	17,305
Puerto Rico	--	791	542	--	--	1,333

NOTES:
f = This is a 1975-76 biennial appropriation.
g = This appropriation was labeled "Mineral Royalties."

TABLE III

1975-76

State Appropriations for Public Community/Junior Colleges

(in thousands of dollars)

STATE	CURRENT OPERATIONS	CAPITAL OUTLAY	TOTAL
Alabama	21,465	5,443	26,908
Alaska	7,400	670	8,070
Arizona	29,610	7,209	36,819
Arkansas	9,113	-0-	9,113
Colorado			
State	20,028	763	
Local	4,073	126	
	24,101	889	24,990
Connecticut	21,034	8,901	29,935
Delaware	9,605	2,454	12,059
Florida	152,834	30,754	183,588
Georgia	20,280	-0-	20,280
Hawaii	17,278	18,429	35,707
Illinois	80,560	35,250	115,810
Indiana	3,023	913	3,936
Iowa	35,812	-0-	35,812
Kansas	9,681	-0-	9,681
Kentucky	7,212	11,200	18,412
Maryland	37,535	10,519	48,054
Minnesota	35,934	-0-	35,934
Mississippi	26,944	-0-	26,944

TABLE III (continued)

1975-76

State Appropriations for Public Community/Junior Colleges

(in thousands of dollars)

STATE	CURRENT OPERATIONS	CAPITAL OUTLAY	TOTAL
Missouri	18,008	-0-	18,008
New Jersey	31,813	-0-	31,813
New Mexico	2,282	-0-	2,282
New York	83,204	53,668	136,872
Ohio	23,082	17,711	40,793
Oklahoma	17,309	6,826	24,135
Oregon	32,042	12,000 (biennial '75-77)	44,042
Pennsylvania	28,890	10,100	38,990
Rhode Island	9,047	3,650	12,697
S. Carolina	24,674	4,441	29,115
Tennessee	15,997	3,540	19,537
Texas	144,042	-0-	144,042
Utah	10,599	14,468	25,067
Washington	101,627	29,000	130,627
W. Virginia	4,265	-0-	4,265
Wisconsin	30,191	4,322	34,513
Wyoming	20,301	8,127	28,428
Puerto Rico	16,505	542	17,047

TABLE IV

Percentage of Tax Support

Reported for Financing Community Colleges

1975-76

STATE	STATE GENERAL REVENUE FUND	LOCAL AD VALOREM PROPERTY TAXES	OTHER SOURCES
Alaska	100	--	--
Arizona	43	42	--
Arkansas	73	12	--
California ('74-75)	43	51	6
Colorado			
State	76.7	--	--
Local	45	35	--
Connecticut	100	--	-- Student fees returned to State General fund
Delaware	100	--	-- Student fees returned to State General fund
Florida	62 (current oper. plus cap. outlay) 71	--	12.4 (current oper. plus -0- cap.outlay)
Georgia--Not % of total income		--	69 (36% Sales Tax 33% Income Tax of State Approp.)
Illinois	38	37	--
Iowa	48	--	--
Kansas	29.4	54.9	--
Kentucky	100	--	--
Maryland	39	32	--
Minnesota	100	--	--

TABLE IV (continued)

Percentage of Tax Support

Reported for Financing Community Colleges

1975-76

STATE	STATE GENERAL REVENUE FUND	LOCAL AD VALOREM PROPERTY TAXES	OTHER SOURCES
Mississippi	55	16	--
Missouri	31	42	--
New Mexico	31	31	--
New York	1	50	49 (bonds)
N. Carolina	24	--	76 (Sales & Income Tax)
N. Dakota	97 (1974-75)	3 (1974-75)	--
Ohio	33 (est.)	33 (est.)	--
Oklahoma	88.6	11	0.4
Oregon	41[e]	32 (1974-75)	--
Pennsylvania	37.4	--	--
Rhode Island	71	--	--
S. Carolina	--	7	51 (State Sales Tax)
Tennessee	68	--	--
Texas	59	17	--
Vermont	100		
Washington	77	--	--
Wisconsin	25	57.2	--
Wyoming	40	35	16 (Mineral Severance Tax)
Puerto Rico	95	--	5 (Federal)

TABLE V

1974-75

State Appropriations for Public Community/Junior Colleges

(in thousands of dollars)

STATE	CURRENT OPERATIONS	CAPITAL OUTLAY	TOTAL
Connecticut	21,035	8,883	29,918
Georgia	19,151	-0-	19,151
Illinois	86,000	32,000	118,000
Indiana	1,718	-0-	1,718
Maryland	31,555	-0-	31,555
Massachusetts	41,530	208	41,739
Montana	15,085	-0-	15,085
Nebraska	16,858	300	17,158
New Jersey	32,200	-0-	32,200
New York	129,073	74,000	203,073
N. Carolina	97,605	10,000	107,605
N. Dakota	532	-0-	532
Pennsylvania	25,381	10,870	36,251
S. Carolina	20,786	1,521	22,307
Wisconsin	41,700	-0-	41,700
Wyoming	4,914	-0-	4,914

APPENDIX B

M I S Definitions

Student Credit Hours

Full-Time Student

Part-Time Student

Formula for SFTE

Section One

1975 MIS

DEFINITIONS FROM REPORTING STATES

STUDENT CREDIT HOURS

Alabama:	Number of hours the student is taking for credit at the institution.
Arizona:	Total of all credit hours for courses attempted.
Arkansas:	One hour of lecture for 16-18 weeks.
California:	No less than 16 student contact hours for each credit hour.
Connecticut:	One semester hour equals one hour per week in class--lecture, discussion, quiz periods. For laboratory sessions--one lab hour equals one-half to two-thirds credit hour.
Delaware:	One class hour of lecture-demonstration or three lab or clinic hours per week per quarter equals one credit hours. One student times one credit hour equals one student credit hour.
Florida:	One classroom contact hour equals one student credit hour.
Georgia:	One credit hour measures student activity in course work for one hour of class time per week for an academic quarter (12 weeks).
Hawaii:	Sum of semester hours taken by all students registered in all classes, excluding auditors. Example: 75 student credit hours, taken by 25 students in lecture section 39 of English 100 (3 credits).
Illinois:	50 class time minutes x 10 for quarter credit hours. (total 500 min.) and x 15 for semester credit (total 750 minutes).
Iowa:	Each clock hour a student is in an officially scheduled class session for which he is duly registered.
Kansas:	One (1) hour of instruction per week for 18 weeks or its equivalent.
Kentucky:	One student credit hour equals one 50 minute lecture recitation per week.

STUDENT CREDIT HOURS (con't.) -2-

Massachusetts:	One class meeting (50 min.) per week for 14-15 weeks.
Minnesota:	Minimum of one hour per week for eleven weeks in a class or other organized learning experience.
Mississippi:	Not defined by law (semester hour = minimum of 750 minutes lecture or equivalent).
Montana:	One credit hour is usually assigned a class that meets 50 minutes a week for a quarter or, total student credit hours are determined by multiplying the credit hour value of a course by the number of students registered in the course.
Nevada:	One (1) hour of lecture X fifteen (15) weeks of instruction = 1 credit. Three (3) lab hours per week X fifteen (15) weeks = 1 credit.
New Jersey:	Federal HEGIS definition.
New York:	The number of academic units assigned to a credit course.
Nevada:	One credit per semester hour = 15 hours lecture, or 45 hours of lab.
Ohio:	One student engaged in activity for which 1 hour of credit toward a degree or other certificate will be granted upon successful completion.
Oklahoma:	One hour class for a minimum of 16 weeks.
Oregon:	"Term Hour" means a 50-minute period of course work a week per student for approximately one-third of a school year.
Pennsylvania:	One credit equals 45 contact hours per semester.
Rhode Island:	Each course and lab carries a credit-hour equivalent determined by the appropriate Curriculum Committee upon recommendation by the department involved.
South Carolina:	The sum total of all credits for which students are enrolled in a given quarter.
Tennessee:	Number of students times the credit hours of the course taken.
Virginia:	Credit value of course times student enrollment in course.

STUDENT CREDIT HOURS (con't.) -3-

Washington:	Course section enrollment times the quarterly credit hour value (or equivalent for non-credit classes) of the respective course section.
West Virginia:	Student enrollment times course credit.
Wisconsin:	One credit for three hours of study per week, whether in classroom, laboratory, assigned outside study, or any combination thereof.
Wyoming:	Not formalized.

FULL-TIME STUDENT

Alabama:	12 or more hours.
Arizona:	12 or more credit hours.
Arkansas:	One that enrolls for at least 12 semester hours when headcount is determined.
California:	Enrolled in 12 or more credit hours for the semester or quarter.
Connecticut:	Any student enrolled for 12 or more semester hours in any one semester.
Delaware:	Students carrying at least 3/4 or normal load, e.g., 12 credit hours or more.
Florida:	Student taking 12 hours or more per term.
Georgia:	One registered for course credits equal to at least 75% of a normal student load.
Hawaii:	12 or more credits per semester at the same institution.
Illinois:	A student taking 12 or more semester or quarter hours per regular academic term (at the census date of the regular term).
Iowa:	A full-time student shall be defined as one who is taking 12 or more hours of college credit or the equivalent.
Kansas:	No definition.
Kentucky	12 or more student credit hours per semester (six during summer session).
Massachusetts:	Any student who is taking 15 or more credit hours of course work per semester.
Minnesota:	A student enrolled for 12 or more quarter credits.
Mississippi:	12 or more semester hours per semester (or 450 clock hours for vocational students).
Montana:	One taking 12 or more credits.
Nevada:	Student enrolled for sixteen (16) credits or more per semester.

FULL-TIME STUDENT (con't.) -2-

New Jersey:	12 or more credit hours per semester.
New York:	Those enrolled for 12 or more credit hours.
Ohio:	Twelve or more credit hours.
Oklahoma:	A student who is enrolled in 15 or more semester credit hours. (12 for veterans)
Oregon:	A student carrying at least 15 term hours or 20 clock hours per week for three terms of not less than 10 weeks each.
Pennsylvania:	12 or more credits per semester.
Rhode Island:	One carrying twelve or more credit-hour equivalents.
South Carolina:	12 or more credit hours.
Tennessee:	A full-time student is defined as one enrolled for twelve (12) or more hours of on-campus or resident work.
Virginia:	Student carrying 12 or more credits per quarter.
Washington:	Any student enrolled for more than 10 quarterly credit hours.
West Virginia:	Student enrolled for credits equal to at least 75% of normal full-time load. (15 hours)
Wisconsin:	One who attains 80% or more of FTE load.
Wyoming:	An individual registered for 12 or more credits per term.

PART-TIME STUDENT

Alabama:	11 or less hours.
Arizona:	less than 12 credit hours.
Arkansas:	One that enrolls for less than 12 semester hours.
California:	Enrolled in less than 12 credit hours.
Connecticut:	Any student enrolled for less than 12 semester hours in any one semester.
Delaware:	Students carrying less than 3/4 of normal load, e.g., 11 credit hours or less.
Florida:	Student taking 11 hours or less per term.
Georgia:	Less than 75% of normal student load.
Hawaii:	Less than 12 credits at the same institution.
Illinois:	A student enrolled in less than 12 semester or quarter credit hours per regular academic term.
Iowa:	A student in a college parallel division who is taking less than twelve hours of college credit or the equivalent.
Kansas:	No definition.
Kentucky:	Less than 12 hours per semester (5 or less during summer).
Massachusetts:	Any student who is taking less than 15 credit hours of course work per semester.
Minnesota:	A student enrolled for 11 or less credits.
Mississippi:	Less than 12 semester hours per semester (or less than 450 clock hours for occupational student).
Montana:	Less than 12 semester credits.
Nevada:	Student enrolled for less than sixteen (16) credits per semester.
New Jersey:	Less than 12 credit hours.
New York:	Those enrolled for 1-11 credit hours.

PART-TIME STUDENT (con't.) -2-

Ohio:	Less than 12 credit hours.
Oklahoma:	A student who is enrolled in eleven or less semester credit hours.
Oregon:	A student carrying less than 15 term hours or 20 clock hours per week.
Pennsylvania:	Less than 12 credits per semester.
Rhode Island:	One carrying less than twelve credit-hour equivalents.
South Carolina:	Less than 12 credit hours.
Tennessee:	A part-time student is defined as one enrolled for less than twelve (12) hours of on-campus or resident work for credit.
Virginia:	Student carrying less than 12 hours per quarter.
Washington:	Any student enrolled for less than 10 quarterly credit hours.
West Virginia:	Less than 75% of the normal full time load.(15 hours)
Wisconsin:	Less than 80% of F.T.E. load.
Wyoming:	An individual registered for less than 12 credits per term.

FORMULA FOR STUDENT FTE

Alabama:	12 to 21 hours counts as one FTE. All part time students' credit hours are added up and divided by 12. These two figures are then added together.
Arizona:	Total student credit hours divided by 15.
Arkansas:	Total number of student semester credit hours enrolled on eleventh class day for each semester divided by 15 or divided by 30 for one year.
California:	Unit of average daily attendance based on 525 contact hours for the academic year.
Connecticut:	F.T. + 40% P.T. = F.T.E.
Delaware:	16 student contact hours per week equals one F.T.E.
Florida:	Total credit hours divided by 15 for a given term; total credit hours divided by 30 for annual FTE.
Georgia:	Per academic quarter or accumulation thereof, Student FTE = $\frac{SCH}{16.67}$
Hawaii:	Total student credit hours taken divided by 15 credit hours.
Illinois:	The statistical student unit calculated by dividing all credit hours generated at the college by 15 credit hours for any term to determine the annual FTE students. Divide all credit hours for that year by 30 semester hours for colleges on the semester system and by 45 quarter hours for colleges on the quarter calendar.
Iowa:	N/A
Kansas:	The total number of credit hours generated divided by 15 (hrs) = student FTE per semester.
Kentucky:	Total student credit hours divided by 15 = FTE per semester
Massachusetts:	Total full-time students plus total credits of part-time students divided by 15.
Minnesota:	For each quarter--FTE = number of credits divided by 15. For the academic year--FTE = number of credits divided by 45.

FORMULA FOR STUDENT FTE (con't.) -2-

Mississippi:	Full-time students plus equivalent of part-time (usually: part-time divided by 2.5).
Montana:	Total student credit hours divided by 15.
Nevada:	Total student credit hours divided by sixteen (16) semester hours of credit.
New Jersey:	Full time headcount plus part time total credit hours divided by 15 (30 for annual figures).
New York:	Annual average FTE workload = total student credit hours produced in all terms plus equivalent credit hours produced in some non-credit courses minus credit hours produced in self-supporting contract courses divided by 30 for semester system colleges and 45 for quarter system colleges.
Ohio:	Total fall quarter hours divided by fifteen.
Oklahoma:	Total semester credit hours in which all students are enrolled divided by 15 equals number of FTE for that enrollment period.
Oregon:	Total credits divided by 45.
Pennsylvania:	Full time + (total part time credits divided by 12).
Rhode Island:	Total credit-hour equivalents divided by fifteen.
South Carolina:	45 quarterly credits equal one (1) annual FTE. 15 quarterly credits equal one (1) FTE per quarter.
Tennessee:	$\frac{\text{Total Student Credit Hours}}{15}$
Virginia:	Student credit hours divided by 15 equals FTE (quarter system).
Washington:	Total quarterly student credit hours divided by 15.
West Virginia:	Student credit hours per semester divided by fifteen.
Wisconsin:	Annual--credits divided by 30 for credit courses; hours divided by 810 for hour courses.
Wyoming:	It is computed for a term by dividing the sum of the student credits by 12.

APPENDIX C

Recent Changes in Selected States

Illinois

Florida

EXPLANATION OF COMMUNITY COLLEGE OPERATING FUNDING PLAN

From FY 1966 through FY 1975 the public community colleges of Illinois were funded with a flat rate grant for each credit hour earned by in-state students through mid-term. Beginning in FY 1973, a supplemental grant for non-business occupational courses was provided. Special grants for equalization of local tax rate support per FTE student were initiated in FY 1972 while special grants for non-credit public service activities and disadvantaged student projects were initiated in FY 1973. (See attached Table 1 for specific rates and dollar amounts appropriated each fiscal year.)

Beginning in FY 1976, courses were divided into various categories for state funding with different rates of reimbursement for each category. In FY 1977 and FY 1978, eight different categories are being utilized as shown in the following chart:

Types of Instructional Courses	FY 1977 State Credit Hour Rates: Basic Rate For First 171,000 FTE	FY 1977 State Credit Hour Rates: Growth Rate in Excess Of 171,000 FTE	Projected Credit Hour Rates for FY 1978
Baccalaureate & Academic	$18.87	$13.21	$23.67
Business,Pub.Serv.,Personal Serv.	16.93	11.85	17.08
Data Processing, Commerce Tech.	19.88	13.92	28.04
Natural Science, Industrial Tech.	24.37	17.06	29.16
Health Technology	37.01	25.91	49.87
Vocational Skills	13.96	9.77	11.81
Remedial/Developmental	14.17	9.92	8.51
Other Genral Studies	7.65	5.36	11.88

For FY 1978, the Illinois Community College Board staff estimates that the colleges would have the following amounts of revenue by revenue item including a calculation on the revenue per credit hour and the percent of the total revenue for each revenue item:

Revenue Item	Amount of Revenue	Revenue Per Credit Hour	% Of Total Revenue
Local tax contribution	$ 81,630,000	$14.67	27.2%
Tuition and fee revenues	59,935,000	10.77	20.0%
Other local revenue	4,477,000	.80	1.5%
Total local revenue	(146,042,000)	(26.24)	(48.7%)
Federal funds	8,977,000	1.61	3.0%
Other state revenue	11,289,000	2.03	3.8%
DAVTE vo-tech grants	5,677,000	1.02	1.9%
ICCB equalization grants	6,983,000	1.25	2.3%
ICCB disadvant. student gr.	3,000,000	.54	1.0%
ICCB credit hour grants	117,707,000	21.15	39.3%
Total state & fed. revenue	(153,633,000)	(27.61)	(51.3%)
Total FY 1978 Revenue	$299,675,000	$53.85	100.0%

The revenue listed above would provide adequate financial support for FY 1978 based on the unit cost of $48.40 for FY 1976 increased 11.26% for a two-year inflation rate to an estimated unit cost of $53.85 per credit hour for FY 1978 multiplied by the 185,500 apportionment student FTE projected for FY 1978 ($299,675,000).

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POSITION PAPER ON

PROPOSED FUND GENERATION/ALLOCATION PROCESS

(Florida Division of Community Colleges)

-1976-

DISCUSSION AREA: GROUPING OF COLLEGES

CURRENT TREATMENT:

Two groups of colleges are used for funding purposes, a small college group including five colleges with FTE enrollments of 1300 and below, and a large college group including twenty-three colleges with FTE enrollments over 1300 students. The primary weakness of this treatment is that the range of enrollment sizes for large colleges is too wide (i.e., 1301 to 40,000 students). There are too many differences among "large colleges" to appropriately place them in a singular group for funding purposes.

PROPOSED TREATMENT

College groups are established for various "normal operating ranges". Normal operating range intervals are established at points where total student enrollment increases by 50%. For Fiscal Year 1977-78 twelve groups would exist. However, there is not a set number of groups. Rather, the total range of enrollments among the colleges determines the number of groups which will be employed in any one year.

RATIONALE FOR PROPOSED TREATMENT:

Colleges are placed in groups for funding purposes with "peers" which have somewhat similar size. Support resources tend to remain constant within established enrollment ranges. Therefore, within each group, funding for these "fixed" resource costs can be dealt with separately from the "variable" cost per student. As discussed later in this paper, differences

in variable costs due to the mix of student enrollment by program is accommodated through the existence of unique funding factors for the numerous discipline clusters within each college grouping.

DISCUSSION AREA: DETERMINING FINANCIAL NEED

CURRENT TREATMENT:

An average system-wide cost per full time equivalent (FTE) student is computed for "small" colleges and for "large" colleges. Next, this average prior year cost per FTE is increased for inflation and decreased for average system-wide non-State revenue per FTE to arrive at a "unitary" value for State funding per FTE student. A "cost level factor" is applied to this unitary value for each discipline as a means of reflecting differential costs among disciplines. The primary weakness of this treatment is that it assumes, incorrectly, that all costs vary in direct proportion to FTE student enrollment when, within a normal range of student load, only the direct instructional costs vary directly in proportion to FTE student enrollment. Another major weakness is that by deducting state-wide average revenues per FTE to arrive at a unitary State funding value, the total financial needs of a college as compared with the total sources of funds is not demonstrated.

PROPOSED TREATMENT:

Cost elements are defined as to their typical characteristics in regard to changes in FTE enrollments within a normal operating range. Direct instructional costs are generally treated as variable costs since they

change in direct proportion to FTE enrollment. Support costs are generally treated as fixed costs since they remain relatively constant within normal operating ranges. Finally, certain instructional and support costs are treated as semi-variable costs since they vary somewhat with changes in enrollment but not in direct proportion thereto. Semi-variable costs, accordingly, include both a "fixed component" and a "variable component". For each cost element, a resource funding factor is developed - a measure of what costs ought to be. Such factors are applied to enrollments to determine total financial needs of a college. Ultimately, an estimate of non-State revenue sources for each college is deducted from total need to determine the State funding requirement.

RATIONALE FOR PROPOSED TREATMENT:

The proposed treatment answers the question "does it really cost $1200 to teach one more student?" because it differentiates between the costs which will be incurred with an increment in student load and those costs which will tend to remain constant regardless of change in enrollment. On the other hand, the proposed system recognizes that, as a college's enrollment changes significantly, it moves to a different range of operations (i.e., changes groups) requiring that certain "fixed costs" be "stepped up" or "stepped down" accordingly.

Also, the proposed process defines a college's total financial need. This need is then compared with the college's unique ability to fund that need from various non-State sources as well as from the State appropriation. In this manner, the proposed approach follows the concept of "balanced budget" funding.

DISCUSSION AREA: IMPACT OF FEDERAL FUNDS

CURRENT TREATMENT:

Expenditures of Federal funds, even if for programs which are not directly associated with instructional programs, are included in the cost analysis, and thus, increase the unitary cost per FTE student. A system-wide average Federal revenue per FTE is deducted from average total cost per FTE to determine the State funding requirement on a "per FTE" basis.

One weakness of the current approach is that over one-half of the Federal funds expended are unrelated to instructional programs and, therefore, should not be included in the unitary cost. Another weakness is that this treatment penalizes colleges which are unable to generate Federal funds equal to the system-wide average while enhancing surplus balances at colleges which are able to generate large amounts of Federal funds.

PROPOSED TREATMENT:

Based on a sampling analysis of Federal grants in recent years, it was determined that a college should be able to generate Federal funds for instructional programs equal to about 2.5 total college costs. Accordingly, the proposed treatment involves, excluding from the data which is used to develop the resource funding factors, any Federally funded costs in excess of 2.5%. Subsequently, in determining State funding requirements, an amount equal to 2.5% of total financial needs will be deducted from the total need of each college.

RATIONALE FOR PROPOSED TREATMENT:

The treatment prevents large Federal grants which are not related to instructional programs from affecting the cost analysis. Additionally, a

consistent dollar amount for Federal programs is shown on both the cost and revenue side of the funding formula for each college. Therefore, a college should not be penalized for administering any amount of Federal grants it can generate over the standard amount as long as the additional Federal funds equate with additional expenditures on Federal programs.

DISCUSSION AREA: REVENUE FROM STUDENT FEES

CURRENT TREATMENT:

Once average cost per FTE (system-wide) is determined, a deducation of estimated revenues from student fees is made in order to project State funding requirements on a unitary (per FTE) basis. This method neither recognizes differences in fee structures among schools nor does it recognize potential for increasing fees as a source of revenue.

PROPOSED TREATMENT:

Revenue from student fees will be estimated for each college by multiplying assigned enrollments within each sub-program (A&P, Occupational, Compensatory, etc.) times the median fee for credit courses within the range established by the State Board of Education. In determining the fee by sub-program, non-credit courses requiring little or no fees will be taken into account. The estimated revenues from student fees will then be deducted from each college's total financial need in determining State funding requirement.

RATIONALE FOR PROPOSED TREATMENT:

Applying median average fees by sub-program enrollment on a college-by-college basis reflects the differences in fee generating abilities of colleges due to program mix. Also, since a median fee is used, colleges

maintain flexibility in charging above or below the median amount if deemed appropriate for local circumstances.

DISCUSSION AREA: REVENUE FROM OTHER SOURCES

An estimated amount of other revenues per FTE is deducted from system-wide average cost per FTE to determine unitary State funding factors. The primary weakness of this approach is that it fails to recognize differences in ability to generate other revenues as a funding source from college to college.

PROPOSED TREATMENT:

Other revenues are deducted on a college-by-college basis. The amount deducted represents an historical average of other revenue which each college has been able to generate.

RATIONALE FOR PROPOSED TREATMENT:

Under the proposed approach, allocation of State funds is tailored to the unique ability of each college to generate other revenues rather than being pegged to a system-wide average amount. This approach is consistent with the philosophy that colleges should be funded at a "balanced budget" level.

DISCUSSION AREA: PROGRAM/DISCIPLINE MIX DIFFERENCES

CURRENT TREATMENT:

A system-wide average cost per FTE is determined. It is adjusted for

inflation, student fees, federal funds and other revenues to arrive at a system-wide "unitary" State funding factor. This factor is adjusted for discipline cost differences then applied to projected enrollments in each discipline. One weakness of this approach is that it does not treat student fees on a discipline-by-discipline basis. Another weakness is that only seven discipline clusters are employed for Occupational programs which does not give consideration to high and/or low cost courses/programs within the particular cluster.

PROPOSED TREATMENT:

Resource funding factors (indicators of total need) are applied to projected enrollments for each discipline to "build up" the total financial need for each college rather than starting with an adjusted system-wide average cost. Student fees are computed on a discipline-by-discipline basis reflecting appropriate fee differences among programs. These student fee revenues are then added to other non-State revenues and deducted "in total" from the total financial need of each college in order to determine the State funding requirement. This substitutes public service for technical as a field of study, thereby "folding" the technical courses into appropriate fields of study (clusters).

It further provides for a subdivision of Occupational programs into technical, vocational and supplementary levels of instruction, thereby recognizing cost differences within these sub-classifications.

RATIONALE FOR PROPOSED TREATMENT:

The proposed treatment is more closely tailored to the unique enrollment mixes of the various colleges. As such, it should go far in reflecting the impact of program and program-mix differences on funding on each college.

DISCUSSION AREA: FUNDING TO MEET DEMAND

CURRENT TREATMENT:

A model is used to forecast student enrollment at each college by discipline cluster. This model takes into account historical and projected population, demographic, and other characteristics of each college district. Individual college estimates are also used to confirm the reasonableness of the model's projections. The projected enrollments are then used as a basis for developing the State funding request through the application of unitary funding factors. If the appropriation is less than the request, a subjective process of assigning FTE's to each college and adjusting the unitary funding value is employed to allocate the appropriation among the colleges.

PROPOSED TREATMENT:

Forecast enrollments are developed in the same manner as is currently employed. Also, the State funding request is based upon such a forecast through the application of resource funding factors to projected FTE enrollment. However, if the State appropriation falls short of the request, reduction in the allocation methodology allows all colleges to meet the same percentage of the total enrollment forecasted. A transitional provision keeps a college from getting less funds than its computed State funding requirement in the prior year.

RATIONALE FOR PROPOSED TREATMENT:

The proposed process employs a methodology which eliminates subjective judgments and is adaptable to changing conditions (i.e., growth, decline). The proposed method will permit a consistent approach year after year.