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ABSTRACT

This document reports the findings and recommendations of a study of a number of high level policy issues in Massachusetts higher education. Findings indicate: (1) Massachusetts is not doing all it could to provide equal access and opportunity to its citizens. (2) The present physical plant of public higher education is probably adequate to meet the needs of Massachusetts citizens for a number of years to come. Emphasis should be placed on the improvement of the quality and relevance of the programs. (3) The private colleges and universities in Massachusetts are faced by a future financial crisis brought about by increasing costs, expansion of public education, and a relative reduction in the pool of persons able to pay for private education. (4) The Commonwealth has made inadequate provisions for data collection and analysis, planning, and budgeting. (5) Many institutions have taken the steps toward interinstitutional cooperation and innovation. (6) In order to meet the needs of higher education, Massachusetts will have to spend more money in the future for higher education. Recommendations are indicated. Related document is HE 004 770. (Author/MJM)

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HIGHER EDUCATION IN MASSACHUSETTS:

A New Look At Some Major Policy Issues

A Study for the Massachusetts
Advisory Council on Education

Academy for Educational Development

June 1973

The Massachusetts Advisory Council on Education is an independent state agency created by special legislation (General Laws, Chapter 15, Section 1H) for the purpose of recommending policies designed to improve the performance of all public education systems in the Commonwealth. As such the Advisory Council provides support for studies which will recommend policies promoting and facilitating the coordination, effectiveness, and efficiency of these educational systems.

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June 25, 1973

Mrs. Mary Warner, Chairman
Massachusetts Advisory Council
on Education
182 Tremont Street
Boston, Massachusetts 02111

Dear Mrs. Warner:

In September 1972, the Massachusetts Advisory Council on Education, at the request of the Secretary of Educational Affairs, asked the Academy for Educational Development to study a number of high level policy issues in Massachusetts higher education, and then to prepare a report to the people of the Commonwealth which would make firm recommendations on the actions which might be taken with respect to these issues during the years immediately ahead.

During the course of this study, the Academy's staff met and consulted with the executive leaders of the colleges and universities throughout the state, both public and private, faculty members, student representatives, business people, government officials, and other persons interested in higher education policies in the Commonwealth. The staff also assembled and studied a good deal of statistical and other information on the operations of higher education in Massachusetts and elsewhere in the country, past, present, and future.

The Academy was fortunate in having the assistance and advice of an advisory committee, appointed by the Massachusetts Advisory Council on Education, consisting of eleven professional persons representing the various segments of higher education in the state, both public and private, and eleven lay persons representing other facets of the public interest. The staff consulted with members of the Advisory Committee from time to time, both individually and collectively, and we use this opportunity to express publicly our deep appreciation for their helpfulness and for the many observations they made.

We also use this opportunity to acknowledge with thanks the assistance we received from the hundreds of persons whom we interviewed and from each of the colleges and universities which prepared statistical data for us on past activities and future plans. While the Academy takes full responsibility for this report and for every recommendation made in it, much of the material presented in this document has been developed out of discussions with various individuals and institutions in Massachusetts.

It is fair to say that this document grew out of the insights and comments of many people in Massachusetts, particularly those interested in nurturing and developing higher education of the best quality in the Commonwealth. Their views were critically evaluated, and often supplemented, by the Academy's full-time staff and by a number of nationally known educators whom we called upon for consultation, information, and advice.

We wish to note in this letter the potential usefulness to the Commonwealth of the data and information on higher education in Massachusetts assembled by the Organization for Social and Technical Innovation, Inc. (working under a contract with the Massachusetts Board of Higher Education), and by University Consultants, Inc. (working under a contract with the Massachusetts Advisory Council on Education). These data, when used with the information gathered by the Academy, provide a comprehensive picture of higher education in Massachusetts, similar in scope to the background material assembled by the Willis-Harrington Commission nearly a decade ago.

We wish to thank Mrs. Gladys Keith Hardy, Undersecretary of Educational Affairs (until May 31, 1973), for the many efforts she expended in initiating the study and acting as the chief liaison official with the Commonwealth.

In addition, we also wish to thank the Massachusetts Advisory Council on Education, the Committee of the Permanent Charity Fund, the Jacob Ziskind Trust for Charitable Purposes, and the Ford Foundation for the financial support they provided to make this study possible.

Sincerely yours,

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*Succeeded William Gaige who retired during the course of the Academy's study.

LIAISON WITH THE COMMONWEALTH OF MASSACHUSETTS

Gladys Keith Hardy, Undersecretary of Educational Affairs (until May 31, 1973).

LIST OF PAPERS PREPARED FOR THE STUDY

Academy Study Staff, "Brief Description of the Institutions and Agencies Concerned with Higher Education in Massachusetts," February 1973, 20 pp.

Bowen, Howard R., "Observations on Higher Education Finance in Massachusetts," February 1973, 29 pp.

Boyd, Joseph D., "Observations on Student Aid in Higher Education in Massachusetts," February 1973, 32 pp.

Chase, Francis S., "Comments on Higher Education Policy in Massachusetts," February 1973, 42 pp.

Henry, David D., "Comments on Coordination and Cooperation in Higher Education in Massachusetts," February 1973, 34 pp.

Johnson, Willard R., "Minority Access to Higher Education in Massachusetts," April 1973, 28 pp.

Liebman, Lance, "The State and Federal Constitutions and Their Effect in Massachusetts on the Question of State Aid to Private Higher Education," February 1973, 22 pp.

Terman, Frederick E., "What Policy, If Any, Should Massachusetts Follow Concerning State Aid to Private Institutions of Higher Education?" February 1973, 34 pp.

Copies of each paper will be announced in the Educational Resources Information Center's (ERIC's) monthly volume Research in Education (RIE), a bibliographic journal of the National Institute of Education available in most university libraries. Documents appearing in RIE are available on microfiche or in xerox form. Xerox copies of each paper are currently available from the Academy for Educational Development, Inc., 1424 Sixteenth Street, N.W., Washington, D.C. 20036, at 10¢ per page, payable with order.

Single copies of the paper by Dr. Terman, published under the title "Aid to Private Higher Education in Massachusetts: How? Why?," are available upon request, free of charge, while the supply lasts, from the Massachusetts Advisory Council on Education, 182 Tremont Street, Boston, Massachusetts 02111.

LIST OF PUBLICATIONS BY

MASSACHUSETTS ADVISORY COUNCIL ON EDUCATION

1972	
Massachusetts Schools: Past, Present and Possible	Richard H. deLone
Modernizing School Governance for Educational Equality and Diversity	Paul W. Cook; Jr.
Child Care in Massachusetts: The Public Responsibility	Richard Rowe
1971	
Massachusetts Study of Educational Opportunities for Handicapped and Disadvantaged Children	Burton Blatt Frank Garfunkel
Organizing for a Child's Learning Experience: A Report of a Study of School District Organization in Massachusetts	Donald T. Donley
Quality Education for the High Schools in Massachusetts: A Study of the Comprehensive High School in Massachusetts	Lloyd S. Michael
The People's Colleges: The State Colleges of Massachusetts	Evan R. Collins et.al.
A Systems Approach for Massachusetts Schools: A Study of School Building Costs	Nelson Aldrich George Collins Charles F. Mahoney
1970	
Organizing an Urban School System for Diversity	Joseph M. Cronin
The Massachusetts Department of Education: Proposals for Progress in the 70's	John S. Gibson
Compensatory Education in Massachusetts: An Evaluation with Recommendations	Daniel Jordan Kathryn H. Spiese
Continuing Education in Massachusetts: State Programs for the Seventies	Melvin Levin Joseph Slavet

The State Dollar and the Schools: A Discussion of State Aid Programs in Massachusetts and Promising Reforms	Charlotte Ryan
Report of the Massachusetts Business Task Force for School Management	Warren King & Associates
1969	
A Cost Benefit Analysis of General Purpose State School Aid Formulas in Massachusetts	Andre Daniere
The Measurement of Alternative Costs of Educating Catholic Children in Public Schools	Andre Daniere George Madaus
Guidelines for Planning and Constructing Community Colleges	Bruce Dunsmore
Take a Giant Step: Evaluation of Selected Aspects of Project 750	Herbert Hoffman
Pupil Services for Massachusetts Schools	Gordon Liddle Arthur Kroll
1968	
The Management of Educational Information	Information Management, Inc.
Occupational Education for Massachusetts	Carl Schaefer Jacob Kaufman
Teacher Certification and Preparation in Massachusetts	Lindley J. Stiles
1967	
The Massachusetts System of Higher Education in Transition	Samuel Gove
Inequalities of Educational Opportunity in Massachusetts	New England School Development Council

FOREWORD

Thirteen years ago appropriations for public higher education reached $18 million and represented four percent of the Massachusetts budget. By 1973, the figure had grown to $213 million, accounting for nine percent of the state budget. This dramatic growth in spending for public higher education has led neither to marked improvements in planning and policy-making nor to a higher order of sophistication in collecting and using information.

In October 1973, the Advisory Council authorized a study of higher education policy issues in the 1970s to be conducted by the Academy for Educational Development. This has become the first study the state has undertaken in many years covering both public and private higher education.

The recommendations of the Academy, produced after eight and one-half months of intensive study, bear on a number of issues and problems in our Commonwealth -- a state grown expert in avoiding exposure to the consequences of public and private educational expansion.

Appreciation must be expressed for the good works of Mrs. Gladys Keith Hardy, Undersecretary, and Dr. Joseph Cronin, the Secretary of Educational Affairs, for their assistance in mounting the study and to the Ford Foundation, the Jacob Ziskind Trust for Charitable Purposes and the Committee of the Permanent Charity Fund for their financial support of the study.

Dr. Morton Godine, who serves the Advisory Council as its "higher education" representative, was liaison between the study advisory committee and the Council. Dr. Allan S. Hartman of the Council staff has fulfilled a host of roles and functions in shepherding this enterprise along.

This report, like any study, is a part of what must happen in order to work prudently on the many issues raised. Under the leadership of Chancellor Patrick E. McCarthy, the Board of Higher Education is beginning the process of developing cooperation between public and private institutions of higher education and addressing the issues surrounding scholarship aid. The development of a master plan by the Board of Trustees of State Colleges promises to correct some of the problems of expansion and duplication cited in this report. Similar efforts by both private and public higher education institutions show their increasing awareness of the variety and complexity of problems and issues confronting higher education in Massachusetts. Nevertheless, many officials, both public and private, have not yet fully sensed the need to unify and address common issues on an appropriate scale and scope.

In this comprehensive study of contemporary issues, the Academy presents the Commonwealth with an array of facts and with an extensive set of recommendations. These obligate the state to take reasoned but prompt action.

Dr. Ronald B. Jackson
Acting Director of Research
Advisory Council on Education

HIGHER EDUCATION IN MASSACHUSETTS: A NEW LOOK AT SOME MAJOR POLICY ISSUES

I. INTRODUCTION

Five, ten, fifteen years from now, the people of the Commonwealth of Massachusetts will need a wide array of strong colleges and universities, both public and private.

They will need these institutions to maintain the Commonwealth's role as a major intellectual, cultural, and scientific center of the nation.

They will need these institutions to continue to attract out-of-state students into what is clearly one of the major export industries of Massachusetts.

They will need these institutions to maintain the unparalleled position of the Commonwealth in the nation's advanced technology industries.

They will need these institutions to provide richness and diversity in the lives of all Massachusetts citizens.

Today Massachusetts has one of the strongest higher education systems in the country. There are steeples of excellence in many areas

and these are no minor steeples. They are among the top in the nation. But there are disturbing countertrends to the maintenance of excellence. They could easily lead to the deterioration of the quality of the colleges and universities in the Commonwealth.

Today there are billions of dollars invested in the Massachusetts higher education enterprise, both public and private. Wrong policies or inadequate policies could throw part of this tremendous asset away, resulting in a waste of the most inexcusable kind. As trustees for the people of the Commonwealth, neither the Governor, nor the members of the General Court, nor any senior state official could in good conscience allow any substantial waste or deterioration to occur.

Massachusetts colleges and universities, both public and private, can prevent waste of or deterioration in educational quality but they cannot do the job alone. New government action will be necessary. New governmental policies will be required. The policies adopted during the next few years by the Governor and the General Court, and, through them, by the people of Massachusetts themselves, will be critical. They will go a long way toward determining the future strength of higher education in the Commonwealth.

Against this background the Massachusetts Advisory Council on Education, at the request of the Secretary of Educational Affairs, asked the Academy for Educational Development to study the major policy issues facing higher education in Massachusetts in the years immediately ahead, and to prepare a report describing the policy options that are available and recommending actions that should be taken by the Commonwealth. Specifically excluded from the Academy's assignment were matters relating to the governing structure of higher education in the state and proposals for its reorganization.

In carrying on this study the Academy analyzed the data available on Massachusetts higher education in the light of the reiterated intent of state political and educational leaders to meet the diverse needs of individuals in the Commonwealth and to provide capabilities for advancement of the general welfare. The Academy then arrived at a number of findings which are presented briefly in Chapter II. Recommendations and options are in Chapter III. Further discussion and comments are in Chapter IV.

II. SUMMARY OF FINDINGS

The Academy's findings in the six main areas covered by the study were briefly* as follows:

A. With respect to access to higher education and equalization of educational opportunity:

The Academy found that Massachusetts is not doing all it could to provide equal access and opportunity to its citizens. The present scholarship program, funded at $8 million for 1972-73 and a proposed $9.5 million for 1973-74, does not go very far toward covering the minimum basic costs of even the relatively small number of successful scholarship applicants. Compensatory programs, out-reach programs, tutorial programs, and other programs to reach populations not ordinarily served by higher education operate successfully in many cases, but still reach only a small proportion of potential students. In addition, cultural and other biases continue to prevent blacks and other minorities, as well as women, from entering many professions.

Thus the top priority in the state is the need for action to eliminate cost barriers and social and educational barriers to equal access and participation in higher education for members of minority groups, persons of low socio-economic status, and women.

*Further discussion and detail are presented later in this report.

B. With respect to public higher education:

The Academy found that, after a late start, Massachusetts has built an extensive system of public higher education with many strong institutions and features. But the priorities of the 1960s for the establishment of new institutions, construction of buildings, and expansion of enrollments are no longer pressing. In fact, the Academy found that the present physical plant of public higher education is probably adequate to meet the needs of Massachusetts citizens for a number of years to come.

The public institutions now need funds to improve the quality and relevance of their programs, especially in "career-oriented" areas, to develop alternatives to traditional types of education, to serve better Massachusetts residents who have been barred from higher education by poverty or social discrimination, to provide clearer differentiation of roles among the various higher education institutions, and to cooperate more fully with other public and private institutions.

C. With respect to private higher education:

The Academy found that the private colleges and universities in Massachusetts are faced by a future financial crisis brought about by increasing costs, expansion of public education, and a relative reduction in the pool of persons able to pay for private education. They are further threatened by the demands of some local communities for payment in lieu of taxes for essential municipal services.

At present the Commonwealth is prevented by the Constitution from providing any direct aid to private institutions, although it does provide indirect aid through the provision of scholarships to students, through the exemption from the property tax, and through a state-supported authority which issues bonds for construction.

Unless the Commonwealth amends the Constitution and changes its policy with regard to the financial support of private higher education, the high quality of many private institutions in the Commonwealth may erode. The state might then lose some of the income from many out-of-state students now attracted to Massachusetts and might also be burdened with greatly increased costs to expand the public sector of higher education to provide for Massachusetts students who might otherwise be served by the private institutions.

D. With respect to planning, coordinating, and budgeting:

The Academy found that the Commonwealth has made inadequate provisions for data collection and analysis, planning, and budgeting which make it difficult for the state to manage its higher education enterprise effectively.

In addition, the Commonwealth has not developed adequate mechanisms for coordination among the segments of public higher education or between the public and private sectors.

These deficiencies are the result in part of the General

Court's failure to appropriate sufficient funds to support the work of a central planning staff. The result: decisions have been made on an ad hoc basis depending on the pressures of the moment, and overall statewide policy with respect to the future direction and expansion of higher education has been unclear.

E. With respect to cooperation and innovation:

The Academy found that steps toward cooperation are being taken at many colleges and universities in Massachusetts. There are a number of consortia in the state, many bilateral agreements among institutions, and new approaches being made among New England public institutions and between Massachusetts public and private institutions.

With respect to innovation, the private colleges and universities have a long record of contributions to new ideas. In the public sector, the University of Massachusetts is nationally recognized for its experimental programs, and the state is working on developing an "open university" to provide access to higher education for those who cannot attend regular classroom activities.

But the Academy found that these programs have proceeded up to now on an individual institution basis. There is a need now for the state to begin to support experimentation and cooperation more systematically, so as to foster the growth and diffusion of more successful activities.

F. With respect to financial support:

The Academy found that in order to meet the needs described above Massachusetts will have to spend more money in the future for higher education. To offset some of the greater costs, the state can carefully reorder higher education priorities and cut back on less essential activities. It can also cut back on present and projected appropriations for capital expenditures, since there is enough higher education space now (with a few possible exceptions) to serve the needs of the Commonwealth for some time.

The state can also increase tuition in the public institutions, which is at present $250 for full-time resident undergraduates in most public institutions and is scheduled to increase to $300 in fall 1973. This figure is lower than the national average of tuition in public institutions.

Nevertheless appropriations for higher education from the General Fund will have to be increased. Higher education, both public and private, is one of the state's principal resources. It needs to be nurtured appropriately and financed adequately. If higher education is allowed to deteriorate, the state could well face serious and irreversible social and economic consequences.

* * *

In arriving at its findings for the six main areas of the study (which are described in greater detail in the remainder of this report),

the Academy observed that initiatives of many kinds are now being taken to make higher education more effective and more responsive to the needs of Massachusetts and its people. These initiatives come from many sources: the Governor, the Secretary of Educational Affairs, the Board of Higher Education, the Association of Independent Colleges and Universities, and the many colleges and universities in the Commonwealth, both public and private. In fact, Massachusetts is once again providing leadership for the advancement of education through the constructive innovations which are being introduced.

Despite these commendable initiatives, the adaptation of higher education to the needs and conditions of contemporary life in Massachusetts has only just begun.

For the most part, in Massachusetts as elsewhere in the country, higher education still proceeds along accustomed paths. The new initiatives and innovations testify to an awakening responsiveness to the challenges of the 1970s; but for many reasons the impact is severely limited. Some initiatives are proposals which may or may not lead to constructive action; some are faddish in nature rather than carefully designed programs for improvement of learning or institutional functioning; and others, while well conceived, have not yet been tested sufficiently to prove their worth.

Moreover, some of the more promising ideas fall by the wayside because of the lack of suitable provisions for design, development,

evaluation, and dissemination. And in addition the working out of better solutions to higher education problems often involves costs which exceed institutional resources.

During the study the Academy observed that in Massachusetts:

- only the Governor and the General Court, through executive leadership and legislative action, can provide the resources essential to a broadscale attack on the problems that now confront higher education;

- only the Governor and the General Court, through improved definition of agency responsibilities and powers, can set the stage for effective performance of the functions of evaluation, planning, coordination, and budgeting; and

- only the Governor and the General Court can institute action which will clear away the constitutional and statutory barriers to closer public/private and inter-institutional cooperation.

Today the public agencies and institutions concerned with higher education in Massachusetts are feeling their way -- in some cases boldly, in others timidly -- toward greater effectiveness. If these initiatives are to be encouraged and further changes expedited, the

next moves are up to the Governor and the General Court. As a guide for them and through them to the people of the Commonwealth the Academy makes six major recommendations, accompanied by 31 sub-recommendations. These, along with a discussion of the bases for the recommendations and the policy options that are available, are set forth in Chapter III of this report.

III. RECOMMENDATIONS AND OPTIONS

A. Access to Higher Education and Equalization of Educational Opportunity

Major Recommendation

The Commonwealth should take immediate measures to increase access to higher education by providing substantial increases in scholarships and other forms of student aid; and by initiating and leading efforts to reduce academic barriers which discourage admission or impede the success of poor persons, minority group members, women, and persons who are beyond the usual age of college attendance.

Sub-recommendations

1. Appropriations for scholarships should be increased rapidly and substantially toward a target of $40 million available for grants in the academic year 1975-76; thereafter increases should be made until a level is reached which in combination with other forms of student aid would eliminate cost as a barrier to higher education for Massachusetts residents.

2. Eligibility requirements and the limits on scholarship grants should be liberalized along with the increased appropriations.

3. Scholarship grants should be accompanied by guaranteed loans and remunerated employment -- in carefully worked out proportions -- where necessary and appropriate to supplement the student's own financial resources.

4. Scholarship and other student aid programs should be extended after careful study to include older adults and part-time students whose costs cannot be defrayed by either themselves or their employers.

5. The budget for the administration of student aid programs should be increased to between two and three percent of the appropriation for scholarships in order to cover computer services and the salaries of an augmented staff, which should include persons assigned the special responsibility for encouraging applications from minority and other groups whose participation in higher education is disproportionately low.

6. The General Court should support the efforts of the Governor's Task Force to establish an "open university" as a means of providing greater access to higher education for women, older adults, persons with special education needs, the handicapped, and those whose working arrangements prevent them from attending educational programs conducted on campus.

7. The state should establish under the statewide board of higher education an interim commission charged with responsibility for (a) determining progress in improving access of minorities and women to higher education in the public and private colleges and universities in Massachusetts; (b) reviewing, monitoring, and reporting on affirmative action policies and practices in all higher education institutions in the state; and (c) initiating and reporting on talent searches, out-reach programs, efforts to arouse expectations of college attendance, and other measures to increase the participation of blacks, other minorities and women in graduate and professional programs as well as in undergraduate education. (Note: The activities of the proposed commission would be in addition to those carried on by Federal government agencies.)

Options Considered and Bases for Recommendations

Before arriving at the specific sub-recommendations for the improvement of access to higher education, the Academy weighed a number of alternatives, of which some examples are given below:

With regard to the amount of state appropriations for scholarships. The viable options lie somewhere between zero and $60 million or some higher figure which may be necessary to remove cost as a deterrent to higher education for any Massachusetts resident. In

arriving at a justifiable amount for a particular year, consideration has to be given to two competing factors; first, the number of students in need of assistance and the amounts of assistance required to equalize opportunity for higher education; and, second, the availability of public revenues and the ability of Massachusetts taxpayers to bear a larger burden.

The information beginning on page 66 indicates that Massachusetts is not yet close to providing equal access to higher education for all of its citizens; and estimates suggest that the gap may be widening between the amount of money made available and the amount required to meet the financial needs of Massachusetts students.

Statements of leaders in higher education in Massachusetts and of state officials alike indicate that the closing of this gap should be one of the state's top-level priorities. A prolonged delay in closing the gap would mean that thousands of Massachusetts residents might be deprived of opportunities for higher education that might not come again.

The present appropriation of $8 million for scholarships provides grants to 13,300 students at an average support level of $600. An

appropriation of $30 million would enable assistance to be granted to 30,000 students at an average of $1,000 per grant, or to 20,000 at an average of $1,500 per grant. An appropriation of $40 million would provide 40,000 grants at an average of $1,000, 26,667 at an average of $1,500, or 20,000 at an average of $2,000.

An increased appropriation would also allow a flexibility which is lacking in the present system of awards, where the maximum is for complete tuition in state public institutions and for a fraction of tuition in private institutions.

There is also no doubt that the target of $40 million in appropriations for scholarships in fiscal year 1975-76 will be difficult to achieve; but the Academy believes that:

1. The goal of equal access to higher education should be a top priority in Massachusetts for the near future.
2. The increased funding for student aid necessary to achieve this goal should be the largest single cause of increased appropriations for the next few years.
3. Offsets against the large increases in appropriations for student aid could be achieved through more effective

management, the fuller use of the resources of both the private and public colleges and universities (which would permit a reduction in capital outlay), and additional revenue receipts from tuition.

These matters are discussed further in Recommendation F, which is addressed more directly to the issue of meeting the need for financial support for higher education.

With regard to bases for awards. The options considered included the following:

1. Using the present method of restricting aid to students whose families cannot provide more than a specified amount of support, such as: (a) the present cutoff point of $300, (b) a cutoff at $1,000, or (c) some other figure.

2. Extending eligibility to students from families whose income (as attested by income tax returns) falls below some specified level such as $8,000, $10,000, or $12,000.

3. Calculating for each student the full cost of higher education at the institution of his or her choice on a year-by-year basis and subtracting any or all of the

following:

(a) family contributions as determined by formula;

(b) available support from federal funds;

(c) a proportion of costs to be covered by guaranteed loans; and

(d) a proportion of costs to be covered through assured part-time work.

The Academy prefers Option 3 because it embraces the concept that every young person and older adult is entitled to pursue his or her personal, social, and career goals through higher education at public expense to whatever extent may be necessary to supplement personal resources. It provides the opportunity for great flexibility in awards as well as meeting the criterion of fiscal equity.

Among the possible variations are the following:

- The calculation of costs could vary from closely figured basic costs (when appropriations are inadequate, as at present in Massachusetts) to the inclusion of all reasonable living costs or even an allowance, in extreme cases, for earnings foregone.

- The proportion of total costs to be covered by loans could be increased with the level of education and the prospects for earnings.
- Both students and the institutions attended could assume responsibility for working out arrangements for the defraying of a portion of the cost through part-time employment.

In the early years of undergraduate work, students could bear a minor fraction of the cost through part-time employment provided that the work could be scheduled so as not to interfere with academic progress. In the latter part of undergraduate study, and in the graduate and professional years, from 20 to 40 percent of the costs might be covered by loans to be repaid from future earnings. Care has to be taken not to overburden the student with debt, and particular caution has to be exercised not to let unwillingness to borrow become a barrier to higher education for students from minority and low-income groups.

With regard to support for part-time and continuing education (sub-recommendation A-4). The information and analysis with respect to this sub-recommendation will be provided by the study of part-time and continuing education now being carried on by University Consultants, Inc. for the Massachusetts Advisory Council on Education to be published in September 1973.

With regard to the increase in appropriations for the administration of student aid programs (sub-recommendation A-5). Dr. Joseph Boyd, the Academy's consultant, pointed out that the present budget for administration of student aid is so low that it is difficult to check as carefully as would be desirable into eligibility of students and their attendance in college or to publicize student aid efforts among poverty and minority groups. The recommended addition to the staff would make it possible to provide special counseling to children of parents who are non-English speaking, black, or engaged in unskilled occupations in order to enable them to take full advantage of the various forms of aid available.

With regard to removing academic and social barriers (sub-recommendations A-6 and A-7). The Academy favors making the permanent state agencies for coordination, planning, and administration ultimately responsible for: (1) gathering, analyzing, and reporting relevant information; and (2) taking appropriate action to make all forms of higher education fully available to members of groups who are not adequately represented. However, for the immediate future, a new commission specifically charged with these responsibilities could provide a badly needed spur to action. The commission should be set up for a specified term such as three years, until its functions can be performed adequately by the permanent agencies.

One important strategy for opening the full opportunities of American life to women and to minority groups who have suffered from economic and social discrimination is to increase the representation of such groups in the professions and other highly regarded occupations. Graduate and professional studies are a prime means to this end. Therefore, it is urgent that ways be found to expedite entrance and to facilitate success in these programs for blacks, those whose native language is not English, for women generally, and for those whose parents are in occupations which are poorly represented in higher education.

As more precise information is obtained through the work of the proposed interim commission, it will be possible to develop ways of helping students devise better strategies for removing motivational and other barriers to access for members of minority groups and others whose expectation for higher education is low. Meanwhile considerable progress could be made through encouraging and supporting institutional programs and cooperative projects. Evaluation of these projects could provide information essential for future changes in state policy.

The Academy attaches great importance to vigorous actions by the appropriate state agencies to carry out the intent of the recommendations in this section of the report.

In addition, there are the suggestions in Recommendation E for encouraging experimentation with nontraditional approaches to higher education and for increasing public/private and interinstitutional collaboration. These recommendations have important implications for making higher education both more available and more appropriate for those whose needs are not served adequately by existing patterns and practices.

B. Public Higher Education

Major Recommendation

The Commonwealth should continue to strengthen its system of public higher education by increasing appropriations as called for by demonstrated needs for improved quality and for new services in areas not well served by either public or private institutions; and should also establish an orderly system of program review to reduce or abolish low priority activities and to conserve resources for high priority needs.

Sub-recommendations

1. The state should continue to provide necessary appropriations to enable public colleges and universities to improve the quality of their existing programs, to add new programs when the evidence of need is sufficient to justify a strong recommendation from the statewide board of higher education,* and to improve access to higher education and equalization of opportunity (including offering scholarships where appropriate as indicated in Recommendation A).

*Pending completion of a study commissioned by the Board of Higher Education on alternative future enrollment patterns, the Academy has made no recommendation on the number of students to be accommodated by public higher education during the five to ten years ahead.

2. The Governor should direct the statewide coordinating board of higher education* to scrutinize with the utmost care proposals for new degree programs and authorize them only as justified by demonstrated needs which are not met by existing programs; and authorize new graduate and professional programs only when they clearly do not parallel or duplicate existing programs in private or other public institutions that could meet the demand.

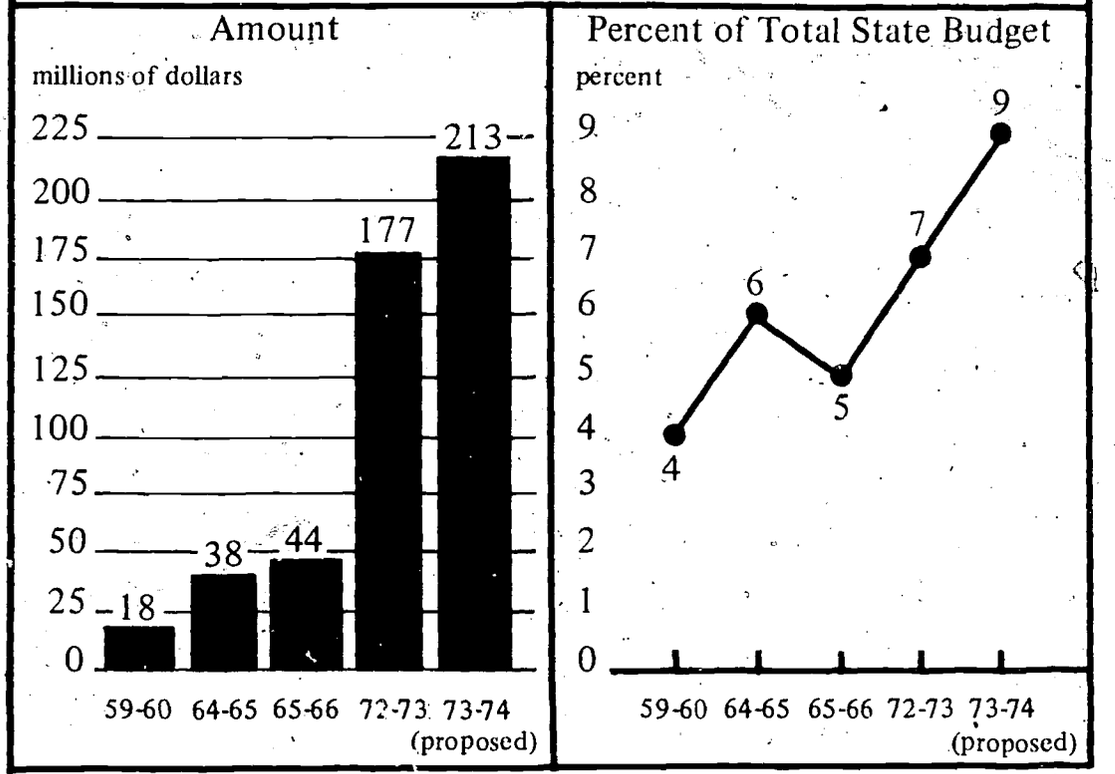
3. The Governor and the General Court should direct the several types of public colleges and universities (as they now are joined in segments or as they might be arranged in the future) to maintain a greater and more clearly understandable differentiation of role and mission than at present.

4. No additional capital construction should be authorized for the next five years except as urgently needed to serve geographic areas where the total physical facilities are grossly inadequate or where needs cannot be met satisfactorily through use of improved technologies or more effective use of existing facilities, including those that may be available in private colleges and universities.

5. The statewide coordinating board of higher education (as it now exists, or as it may be composed in the future) should be the agency

*This report assumes that the Commonwealth will expect the responsibilities mentioned in this section to be handled either by the existing Board of Higher Education or by the Board of Post-secondary Education proposed by the Governor, or by some other board or commission agreed to by the Governor and the General Court.

GROWING STATE APPROPRIATIONS FOR HIGHER EDUCATION IN MASSACHUSETTS



PER STUDENT APPROPRIATION IN MASSACHUSETTS LOW COMPARED WITH OTHER STATES

State and Rank		
New York	(2)	$2,718
Illinois	(3)	2,457
New Jersey	(5)	1,978
Pennsylvania	(7)	1,930
Wisconsin	(10)	1,758
Connecticut	(13)	1,717
California	(19)	1,567
Michigan	(23)	1,500
Ohio	(27)	1,403
U.S. Average		1,625
Massachusetts	(34)	1,337

to review the evidence of needs (both operating and capital) submitted by the public institutions and to relate these needs to the state's high priority goals.

6. The Governor and the General Court should recognize that further increases in state appropriations will be required to support the developing thrust of the public colleges and universities (see Recommendation F) even after all possible economies are realized through more effective management and the better use of resources, including those available at private colleges and universities.

Options Considered and Bases for Recommendations

Massachusetts public higher education is moving out of an era characterized by heavy emphasis on expansion of institutions, facilities, programs, and services, into an era of differentiated demands requiring more finely tuned adjustments. The rate of increase in the number of students is slackening somewhat; but the demands for changes in curricula, modes of instruction, and degree requirements are being articulated more clearly now than in the past -- though perhaps not so violently. New allies are joining the proponents of more radical measures of change in order to free higher education from what are regarded as arbitrary constraints on the place and time of learning and the awarding of academic credit.

In addressing themselves to new student needs and state priorities, Massachusetts policy makers need to consider carefully all viable

alternatives in order to decide to what extent pressing demands might be met by each of the following strategies:

1. Use of advanced technologies of communication and instruction to enable students to pursue their studies in homes, places of work, and other off-campus locations. This strategy potentially offers the double advantage of making education more accessible to students of all ages and in all kinds of occupations, and at the same time reducing space demands and, therefore, the necessity for construction of buildings. The highly developed technologies of computers, television, cassettes, and multi-media packages could be utilized much more fully and effectively if systematic and careful efforts were made to prepare programs for development of skills and other capabilities, including career development.

2. Better utilization of existing facilities, including available facilities in private colleges and universities. Among the alternatives are shortened degree programs, better space utilization through scheduling activities on a twelve-month and extended-day basis, and

imaginative adaptation of class size to instructional methodologies and facilities. Other possibilities lie in arrangements for joint use of facilities by two or more public and/or private colleges and universities; cooperation with industrial and community organizations to make use of facilities outside the formal education enterprise; contractual arrangements with private institutions for programs and services; and arrangements for the operation of programs and services through consortia of public and private institutions. (Arrangements for use of facilities in private institutions could become effective only upon completion of the process of amending the Constitution and enacting legislation permitting the purchase of services and the making of other forms of contracts with private colleges and universities.)

3. Satisfaction of new demands by continuing expansion of the programs and facilities of public institutions. After possibilities of meeting urgent demands through strategies 1 and 2 have been thoroughly explored, there will still be

some needs which can best be met through new or expanded career programs in the community colleges or state colleges or through additional graduate and professional programs in the public universities. During the past ten years most needs have been met through expansion of public programs and facilities, the building of new campuses, the employment of additional faculty members, and the provision of opportunities for a rapidly increasing number of students, many of whom might otherwise have been deprived of the opportunity for higher education. Now, further expansion of public higher education facilities has to be weighed against alternative ways of meeting needs.

Considerations of cost and effectiveness could tip the scales toward one or another of the strategies described above. Philosophical considerations also enter into the choices. For example, the first strategy would be particularly attractive to those who believe that as a result of new technologies, new life patterns, and changing values, traditional forms of higher education are becoming obsolete.

Clearly, a careful exploration has to be made of the nature of the emerging higher education demands in order to avoid too great a dependence on projections based on past experience.

Regardless of whether or not traditional patterns and modes are to continue as the norms in higher education, a strong case can be made for fuller use of existing facilities in both public and private institutions before additional capital expenditures are made.

The important point is that the public colleges and universities must remain vigorous and responsive; but in order to do so they do not have to provide every type of program that may be required by residents of Massachusetts. In some cases the needs may be met quite effectively, and with less expense, by utilizing the resources of private institutions in Massachusetts. A good example is legal education, for which ample facilities exist in private universities in the Boston area. In other cases, such as veterinary medicine, for example, a consortium of New England universities (or contracts with universities outside of New England) might serve the required purpose.

It might also be noted here that much more could be done than is being done in public higher education to differentiate more sharply the role and mission of the various types of colleges and universities. In recent years there has tended to be a blurring at the edges in defining

the educational function to be provided by each institution. There are overlaps among the activities of members of the various segments, and a tendency to compete for additional students rather than to cooperate.

Through fuller utilization of existing resources and careful exploration of alternatives to expansion of programs and facilities, increased state appropriations could be applied with great effect to strengthening public higher education at vital points in Massachusetts. Also, additional support will be required to enable the public institutions to increase access to higher education for minority group members, those from low-income families, and women.

The recommendations and sub-recommendations in this section recognize the importance of continuing to strengthen the public system of higher education, but with increased appropriations made only after a careful scrutiny of needs and priorities. The statewide coordinating board (as it now exists, or as it may be composed in the future) is the logical agency for reviewing the evidence of needs submitted by the various public institutions and relating these needs to the state's high priority goals. A staff of analysts and planners, as recommended on page 36, is also essential to adequate performance of this function. In their absence, the task will have to be handled by close collaboration between the Board of Higher Education and the Office of the Secretary of Educational Affairs.

C. Private Higher Education

Major Recommendation

The Governor and the General Court should move as swiftly as possible to protect and to make more fully available to Massachusetts citizens the unparalleled resources of the many excellent private colleges and universities in the state by amending the Constitution and enacting legislation permitting contractual arrangements with private institutions; and by taking other steps to contribute more fully to state goals and objectives.

Sub-recommendations

1. The state should increase its appropriations for scholarships and liberalize grants as indicated in Recommendation A as one means of aiding private higher education and making it more accessible to all Massachusetts citizens.

2. The General Court and the people of the Commonwealth should continue taking the steps necessary to remove constitutional barriers to state aid for private higher education so that by 1975 the state will be able to contract with private institutions to provide specific programs

for state residents.

3. The state should give serious consideration to providing "cost of education" grants to the private institutions for each Massachusetts student or scholarship recipient enrolled.

4. The state should study the possibility of protecting private colleges and universities from the imposition of local taxes by developing a program of payments to local communities throughout the state to cover the cost of the services they provide to tax-exempt colleges and universities.

Options Considered and Bases for Recommendations

The options for state aid to private institutions range all the way from a state takeover (which of course destroys the private character of the institutions involved and simply expands the public sector), to arrangements whereby support is given the student under conditions that impose no serious constraints upon private autonomy. On the basis of the experience in other states, the Academy believes the most viable options to be:

1. state aid to Massachusetts students through scholarships and grants;
2. partial "cost of education" grants to the private institutions on the basis of enrollment of (or degrees granted to) all Massachusetts students, or to the recipients of aid;
3. state contracts with private institutions for specific programs needed for state residents;
4. state support of consortia among public and private institutions (described in recommendation E);
5. state payments to communities for municipal services provided to private colleges and universities.

The Academy believes that Massachusetts will benefit enormously by appropriate use of the above options inasmuch as each will serve the best interests of the private institutions and at the same time contribute to realization of the state's own high priorities.

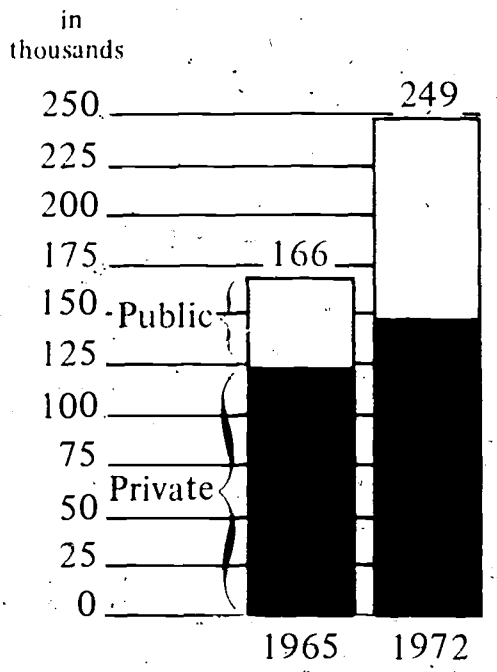
Aid accompanying the student has several advantages over other forms of assistance. It serves to widen student choices while enabling private colleges and universities to compete more successfully for student enrollments; and it poses no threat to institutional independence.

By itself, student aid will not solve the financial dilemma now confronting private higher education. But if aid is sufficiently generous, it could go a long way toward easing the budgetary crisis for private institutions particularly if accompanied by cost-of-education grants of, say, 25 percent of the average cost of instruction of students at public institutions.

If the proposed constitutional amendment to remove the present prohibition on payments to private colleges and universities is adopted, the General Court will be able to authorize the making of arrangements to protect the state's interests and assure proper accountability without encroaching unduly on the independence of private institutions. The basic criteria to be observed are that: (1) the program of services to be purchased will meet a high priority need which cannot be met adequately by existing resources in public institutions; (2) the institution with which the contract is to be made has the capability for adequate performance of the contract; and (3) the provisions for evaluation and accountability are adequate without being oppressive.

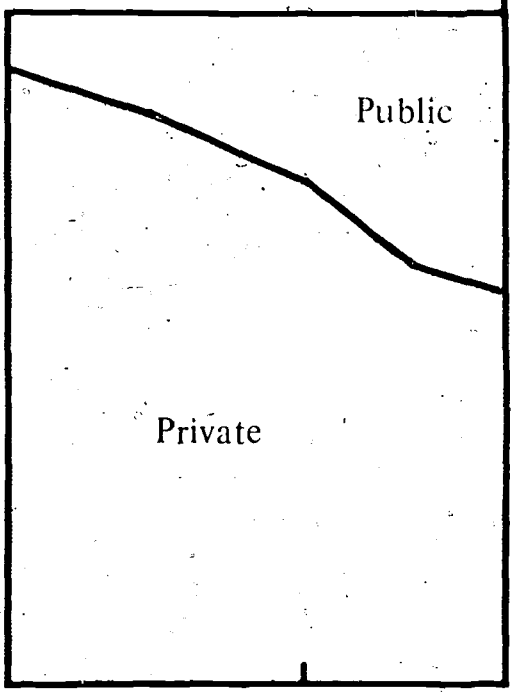
MASSACHUSETTS ENROLLMENT PICTURE

More Students in Private than in Public Higher Education

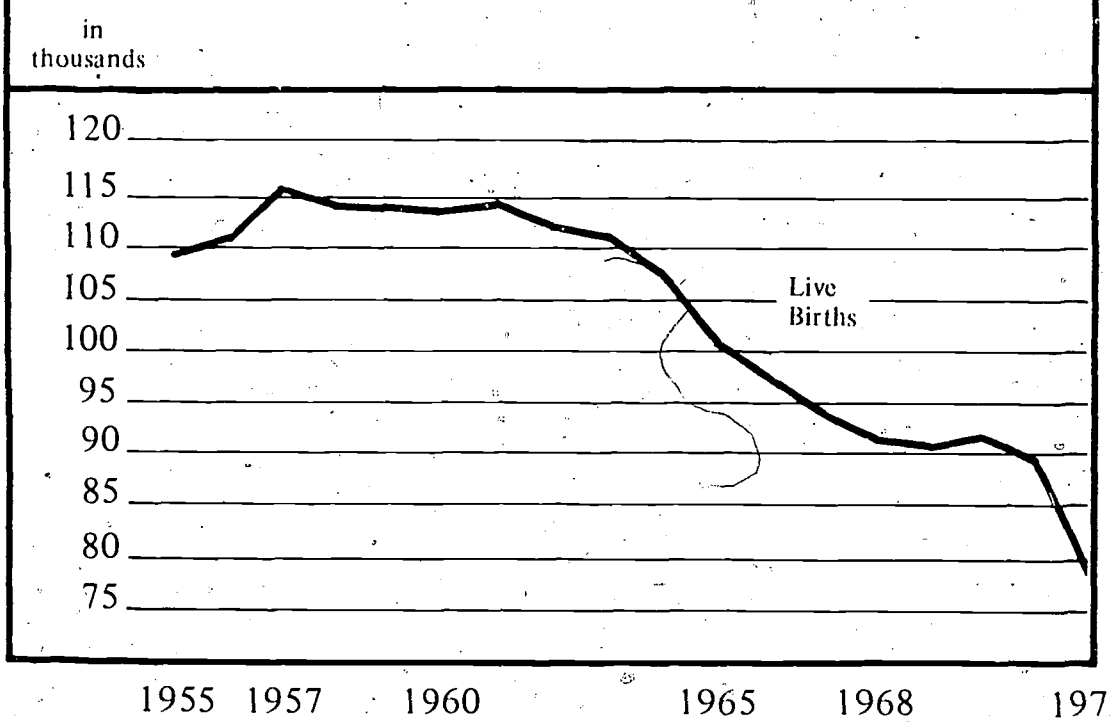


Full-time equivalent, fall term

But the Private Percentage of Total is Declining



LOWER BIRTHS IN THE 1960s WILL AFFECT COLLEGE ENROLLMENTS IN THE 1980s



State payments to local governments to cover services which they provide to tax-exempt colleges and universities would redress what many believe to be an inequitable situation. Communities with many college students, such as Cambridge and Boston, provide police and fire protection and many other municipal services to educational institutions and their students without being able to tax the property of non-profit institutions. On the other hand, private institutions cannot afford to provide payments in lieu of taxes for the entire cost of municipal services.

Since higher education provides many substantial statewide benefits (such as the employment of faculty and staff, the purchasing of supplies and equipment, the payment by employees of state taxes, the bringing of student purchasing power to the state, etc.), the Commonwealth could well accept the financial responsibility of relieving the cities and towns of the specific burden of providing municipal services to college students and to institutions of higher education.

D. Planning, Coordinating, and Budgeting

Major Recommendation

The Commonwealth should take immediate action to establish adequate mechanisms for continuous data analysis, planning, coordinating, budgeting, and communication of information to policy makers in the state government and in the institutions of higher education.

Sub-recommendations

1. The General Court should authorize and appropriate sufficient funds to a statewide coordinating board of higher education* to support the activities of a planning director and a staff of analysts and specialists in the continuing assessment of needs and operations in higher education.

2. The statewide coordinating board and its planning staff should be responsible for linking as closely as possible the functions of planning, coordinating, and budgeting for higher education in the Commonwealth.

*This report assumes that the Commonwealth will assign the responsibility for planning and related functions either to the existing Board of Higher Education or to the Board of Post-secondary Education proposed by the Governor, or to some other board agreed to by the Governor and the General Court.

3. The budget should be an instrument for the statewide coordinating board and the Secretary of Educational Affairs for implementing state plans and policies for higher education; and should be made most effective in this respect by standardizing the calculation of costs and outputs and by taking other steps which will facilitate the comparative analysis of programs and identify the interrelationship between capital and operating costs.

4. The statewide coordinating board of higher education should undertake through its budgetary review activities to recommend approval or disapproval of state support of programs at public institutions, of programs and services to be provided at state expense by private colleges and universities, and of cooperative programs between public and private institutions.

5. The state should replace line-item budgeting by a single lump sum instructional subsidy to each state-supported college and university in order to allow greater flexibility of operation and at the same time establish a sounder basis for accountability.

Options Considered and Bases for Recommendations

The variations in mechanisms for planning, coordinating, and budgeting are too numerous to permit adequate treatment of all the options; however, several questions must be answered as a prelude to establishing the powers and responsibilities of the agency or agencies charged with these functions. Some of the key questions with regard to planning and examples of alternative answers are:

1. Should the scope be:
   - broad or narrow;
   - statewide and comprehensive to cover all aspects of higher education institutions, both public and private;
   - restricted to public institutions only; or
   - restricted to specified types of programs and operations?

2. Should data collection and analysis and the evaluation of alternatives be:

- a continuing updating of information required as bases for sound decisions by the government and the several boards and institutions;
- occasional studies directed toward particular problems; or
- a study of definite duration to prepare either a master plan or a more limited plan for a specified period?

3. Should the planning staff be located:
   - under the statewide board of higher education;
   - in the Office of the Secretary of Educational Affairs; or
   - in segmental or regional board offices?

4. How much and what kinds of authority should be assigned to the planning staff:
   - functional authority only (that is, authority to collect and analyze data and report findings)?
   - power to influence the actions of institutions by participating in the budget review process and in the other activities of the statewide coordinating board?

5. How much and what kinds of authority should be assigned to the statewide coordinating board:

   - advisory powers only? budget? planning?
   - authority to approve or disapprove programs for state support?
   - discretionary authority with regard to contracts and grants?

In Massachusetts, there would be enormous advantages in making planning statewide and as comprehensive as possible. This would require the gathering and analysis of information from private as well as public institutions; and giving attention also to every aspect of higher education which has consequences for the state's high priority needs and objectives. The case is equally clear for a continuous planning process rather than a series of intermittent studies.

The Academy refrains from expressing a definite opinion about the location of the planning staff because of the consideration now being given to reorganizing the structure for higher education. It is of the utmost importance, however, that the planning staff in Massachusetts operate under conditions which assure:

- sufficient independence and functional authority to permit collection and analysis of all relevant data and the full communication of findings to higher education decision makers and to the general public;
- support by a strong statewide coordinating board or commission which is regarded as representing the public interest; and
- adequate funding to permit development of a corps of highly qualified analysts, the use of necessary computer services for data analysis, and the establishment of effective channels both for data gathering and for communication of findings.

In Massachusetts, as elsewhere in the nation, these conditions would place the planning for higher education outside of the executive office of the Governor. Planning has to be a cooperative venture, spearheaded and coordinated by a group that has considerable authority and autonomy, and involving, as indicated on page 129, all of the parties at interest including the executive office. It is not, however, the function of the executive office to run or control the higher education planning process, but it is the Governor's prerogative to have the final say on the total amount of the higher education budget to be recommended to the General Court.

There are obviously many approaches to coordination in higher education. In 1971 the Carnegie Commission on Higher Education, in its

report on The Capitol and the Campus, observed that the mechanisms employed by states range along a continuum from "voluntary coordination among sovereign units to subordination of all units to a single governing board."

At the same time, Dr. Robert O. Berdahl of the State University of New York at Buffalo, observed (in his book, Statewide Coordination of Higher Education, published by the American Council on Education) that there are advantages and disadvantages to every approach to state coordination in higher education that has been used to date. He found no definite preference between a statewide coordinating board and a single governing board, but cited two advantages of the coordinating board as follows:

- in contrast to single governing boards, coordinating boards allow existing institutional boards to continue; and
- in contrast to purely voluntary systems, the coordinating boards usually recruit independent staffs that can provide information leading to reexamination of the status quo.

With regard to implementation of planning, Dr. Berdahl noted that the case is mixed. The advantage of strong governing boards in "ease of implementation" is counterbalanced by a relatively poor record in quality of planning. He observed, as others have done, that governing boards may be "so operations-oriented because of their governing responsibilities that they fail to grasp the centrality of long-range planning."

The Carnegie Commission has taken a firmer stand by asserting that the single governing board with its great concern for administrative functions "is usually not well suited for planning functions." It opposed investing coordinating agencies with administrative authority, but recommended to such agencies certain program review responsibilities and authority consistent with their educational planning functions.

Other observers claim that the quality of performance of statewide coordinating boards of higher education depends more on the levels at which they are funded and the ability of their staff members than on the authority which they possess.

Another option for higher education planning was included in the Education Amendments of 1972 passed by the U.S. Congress in May 1972. Section 1202 of that Act provided for the establishment of a commission on post-secondary education in every state which would have the responsibility for the planning and administration of a number of federal grant programs in higher education. The Act required that the commissions be "broadly and equitably representative of the general public and private, non-profit and proprietary institutions of higher education." The federal government has not yet moved to implement this provision of law, but there is no doubt that sometime soon improved planning and coordinating arrangements will be needed in higher education to meet federal requirements.

The Academy believes that the linkage among planning, coordinating, and budgeting should be as close as possible, and can be achieved and made effective by charging the statewide coordinating board with the responsibility for discharging all of these functions. Dr. Lyman Glenny, Director of the Center for Research and Development in Higher Education at the University of California at Berkeley, endorses this position on the basis of his experience in Illinois and a knowledge of the activities of other states. He has concluded that a statewide coordinating board can accomplish a great deal if it is granted adequate powers in planning, budget review, program review, and enough funds to recruit well-qualified staff.

On the basis of planning guidelines, the statewide coordinating board in Massachusetts could, for example, recommend budget cuts for institutions or segments according to the degree to which the proposed expenditures contribute to established statewide goals and priorities, as indicated on page 128. The possession of budget review powers would also enable the board to gain the cooperation necessary to its planning and program review activities. However, it cannot be emphasized too strongly that the success of the planning, coordinating, and budgeting activities proposed for Massachusetts will rest heavily on the degree of confidence which government officials, the

institutions, and the general public have in the statewide coordinating board. The bases for confidence will be found in the composition, integrity, and capability of the board, on the one hand, and on the ability and effectiveness of its planning staff, on the other.

Simplification and standardization of budget preparation are essential if the budget is to become an instrument for the effectuation of policy. The planning staff should be involved in defining the terms and categories to be used and the bases for cost calculations. Agreements would have to be worked out through the public/private forum and/or other groups to assure adoption by both the private and the public institutions. The process will call for negotiations as well as skillful staff work; but decisions should be expedited by the urgent need for the laying of a sound foundation for the more effective use of resources in higher education in Massachusetts -- including the resources of the private colleges and universities.

Some disadvantages of line-item budgeting are discussed on page 113. The alternative recommended in this report is a lump sum instructional subsidy which has the advantage of allowing greater flexibility in institutional management. This change would give a larger responsibility to institutions for the wise use of appropria-

tions and would provide thereby a better basis for accountability. A subsequent innovation might be program budgeting but only after there has been a careful adaptation of categories and procedures to the requirements of higher education in Massachusetts.

Economy is not the primary purpose of improved mechanisms and processes for planning and budgeting, although some economies doubtless can be realized. The chief gains to be anticipated are the better use of resources and a greater effectiveness in achieving high priority goals.

In addition, a sound basis will be laid for a greater and more effective accountability by institutions receiving state funds (including, in the future, any private institutions receiving direct appropriations from or entering into contract with the Commonwealth). The view taken here is that once an appropriation has been made to a college or university, the institution should be able to exercise a substantial leeway in its spending of authorized funds. The institution should be directly accountable to the state for deviations from plans previously submitted, however, and should recognize that if deviations are beyond acceptable limits sanctions might be applied during the consideration of the next year's budget.

E. Incentives for Cooperation and Innovation

Major Recommendation

The General Court should authorize the statewide coordinating board for higher education to make grants from specially appropriated funds to encourage interinstitutional and public/private collaboration and to promote systematic experimentation with nontraditional approaches to higher education for students of all ages.

Sub-recommendations

1. Beginning in the fiscal year 1974-75, the statewide coordinating board for higher education should be given discretionary authority, with an accompanying annual appropriation of no less than $1 million, to make grants for the support of experimental and innovative projects for periods up to three years.

2. The statewide coordinating board should be authorized to use these funds also (a) to make planning grants of $5,000 to $10,000 to encourage the development of consortia and other forms of interinstitutional and public/private collaboration; and

(b) to negotiate contracts with consortia of public and private institutions for the performance of specified services.

3. Grants should also be awarded (with appropriate advice and review) for projects designed to remove educational deficiencies and to try out nontraditional programs and modes of instruction -- including off-campus studies, programs in part-time and continuing education, and other efforts to respond to emerging individual and social needs.

4. The state should consider assuming the capital and management costs of computer facilities, communications media, and other expensive facilities to be made available on a shared basis to public and private institutions.

5. The activities of the Governor's Task Force for an "open university" should be supported as a means of pooling public/private efforts in offering alternatives to traditional on-campus study for youth and adults.

Options Considered and Bases for Recommendations

Higher education is changing in important ways -- more slowly and less fundamentally than its radical critics desire, and yet sufficiently to arouse fears of loss of quality on the part of others. Pressure from groups now poorly served by higher education, augmented by national and state studies which pinpoint inadequacies and inequities, doubtless will increase the tempo of change. New technologies of communication and instruction provide powerful new instrumentalities for change; and the advancement of knowledge offers improved bases for the content and organization of curricula. Yet innovations must be soundly designed and carefully evaluated to achieve the desired result.

A great deal of innovation is now going on in both public and private institutions of Massachusetts; as a matter of fact, some of the imaginative alternatives to traditional practices are receiving national attention. The Academy feels that the state should encourage and support careful experimentation and systematic development of new concepts and technologies; and also that great care must be taken to

adapt the structure and operations of colleges and universities to alternatives which will loosen arbitrary constraints on the who, the what, the how, the where, and the when of higher education.

These changes cannot be mandated but must be worked out in Massachusetts colleges and universities by students, faculties, administrators, and interested citizens.

An initial appropriation of $1 million would permit a few modest grants to expedite constructive innovation. It would be sufficient to enable criteria to be established and procedures worked out for judging proposals. In subsequent years the appropriation could be increased to the extent justified by the quality of proposals submitted and the need for supplements to institutional resources.

Potential recipients of grants should include colleges and universities, research and development centers and institutes, faculty groups in both public and private institutions, consortia of higher education institutions, and other agencies with demonstrable capacity for research and innovation in higher education. All grants should contain explicit provisions for evaluation, reporting, and dissemination of findings.

Similarly, grants could be used to expedite cooperation in development of programs and services as suggested in Sub-recommendation E-2.

A good case exists for the state to assume capital and administrative costs for some basic services which can be made available on more or less equal terms to public and private institutions. Computer and television facilities, library collections and facilities, and health services could be shared with great savings to the institutional users and to students. Carefully worked out arrangements for division of the costs might result in savings both to the state and to the institutions using the services.

An option to the sub-recommendations in this section would be to:

- make line-item appropriations to consortia rather than through a coordinating board; or
- add small amounts to institutional budgets to be used for experimental projects.

The Academy favors grants made through a statewide board because of the great potential for additions to quality education obtainable from a selective series of small grants by the Commonwealth. Also, such a board is more likely to make adequate provisions for evaluation and for the distribution of information on successful experiments.

Another option with respect to the sub-recommendations in this section is to make no appropriation at all and to do nothing. This is not good enough for higher education in Massachusetts. For its future well-being the Commonwealth cannot afford to pass up supporting what could turn out to be extremely worthwhile opportunities.

F. Meeting the Need for Financial Support

Major Recommendation

The Governor and the General Court should take immediate steps to increase appropriations which are essential to the effective operation of the state's system of higher education, both public and private; and should seek an equitable division of the costs between tax revenues and charges to students in proportion to their ability to pay.

Sub-recommendations

1. Massachusetts should increase appropriations each year for the next five years at least to attain its goals in higher education; a major share of the increased appropriations should be derived from tax revenues, federal revenue sharing, and other sources aside

2. After the fiscal year 1973-74 and following substantial increases in student aid (in accordance with sub-recommendation A-1), tuition at public institutions should be raised gradually over a period of years at a rate of $100 to $150 a year until a level of approximately 40 percent of costs is reached.

3. The statewide coordinating board of higher education should establish guidelines for the imposition of a uniform scale of tuition charges at public institutions throughout the state; and should examine carefully the advantages of establishing as many as three levels of tuition at these institutions, with the lowest charge for the first two years of college work, a slightly higher charge for the next two years, and a third level for graduate and professional work.

4. The additional tuition receipts should be applied, along with other appropriations, toward making higher education a constantly more effective means of meeting the needs of Massachusetts citizens.

Options Considered and Bases for Recommendations

Massachusetts is faced with the necessity of increasing its support for higher education in order to build on the present strength in both the public and private sectors and to enable all the colleges and

universities to become constantly more responsive to the needs of individuals in the state and to society as a whole.

High priority needs which require additional funding are covered in the recommendations on access and in the other sections of this chapter. Adoption of these recommendations will require substantially increased appropriations for higher education in Massachusetts. Increased appropriations are so critical to attainment of the state's goals and objectives in higher education that ways must be found to finance them.

The state has numerous alternatives with regard to the financing of higher education for both the near- and the long-term future. The alternatives lie between the extremes of:

- holding appropriations for higher education to the limits established by appropriations for the fiscal year 1973-74; and
- meeting the requests for additional appropriations as developed by the public institutions.

  (For the fiscal year 1973-74 these requests amounted to an increase of $90 million over the budget for the previous year, including the cost of increased enrollments; the Governor's budget requested increases of about $35 million.)

Neither of these extremes is tenable. The evidence examined indicates that holding appropriations at or near the current level would deny access to higher education to thousands of Massachusetts young people and would result in a progressive deterioration of both public and private higher education. Complying with all appropriations requests without a sufficiently rigorous process of budget review would result in decisions made more or less in the dark because of the absence of systematic data analysis and planning.

Less extreme options include the following:

- to increase appropriations only by the amounts required to cover the cost of growth in enrollments;
- to increase appropriations each year by a stated percentage over the previous year (in addition to covering the cost of expanded enrollments); or
- to adopt the Academy's recommendations as set forth in the various sections of this report.

Although exact data are not available for a precise calculation of the amount required for all of the Academy's recommendations, reasonable approximations of the major costs are as follows:

Increased State Expenditures in Massachusetts By the Fiscal Year 1975-76
Based on the Academy's Recommendations*
In Constant 1973 Dollars
Increases in Enrollment Excluded

Item	Range in Amount		
	Low	High	
	(In millions of dollars)		
Increase in student aid	$30.5	$30.5	1/
Increased costs of administration of scholarships, loan programs, and work-study programs	1.0	1.5	2/
Additional appropriations to improve programs and services in public institutions, less savings realized from cutbacks in low priority activities	10.0	15.0	3/
Contracts for programs and services with private institutions	3.0	8.0	4/
Cost of education grants to private institutions	2.0	4.0	5/
Payments to local communities for services to tax-exempt colleges and universities	1.0	2.0	6/
Improvements of statewide planning functions	.5	1.0	7/
Support of consortia and other cooperative, innovative, and experimental projects	1.0	3.0	8/
Partial support of basic services such as computers, libraries, and media	2.0	5.0	9/
Curriculum programming and other costs associated with the development of an "open university"	2.0	5.0	10/
Total	$53.0	$75.0	

*Note that (1) the increases are calculated on the basis of the proposed 1973-74 budget; (2) appropriations required by increases in enrollment are excluded; and (3) the effects of rises in prices between 1973 and 1975 are excluded.

Additional footnotes are on the next page.

Footnotes to Table

1/ Allows for an increase in appropriations for scholarships from $9.5 million in 1973-74 to $40 million in 1975-76.

2/ Includes the increased cost for administration of a $40 million scholarship program plus additional sums for administration of loans and work-study programs.

3/ Made on the basis of expansion of career and occupationally oriented programs, libraries, and computer facilities, as well as some increases in planning staff, and then reduced by the savings anticipated from budgetary controls and consequent savings in some current operations.

4/ Assumes that the time involved in amending the Constitution and obtaining subsequent legislation to permit contracting with private institutions will permit only a small number of contracts to be negotiated by the fiscal year 1975-76. Larger amounts will be required in subsequent years.

5/ First year only. For illustration a cost of education grant of $100 per student for 20,000 students would amount to $2 million; a $200 cost of education grant would amount to $4 million.

6/ First year only. Information on the amount that might be involved thereafter may come from the Economic Impact study being conducted for the large universities in the Boston area.

7/ For the anticipated cost of computer services and the employment of some eight or more persons skilled in data collection, analysis and planning.

8/ First year only. Beyond this, policies will have to be worked out in detail and some experience gained on the effects of small planning and developmental grants and the cost of support services.

9/ First year only. The range suggested is modest. An estimate of cost for subsequent years will depend upon the development of policy guidelines.

10/ First year only. Assumes Massachusetts will develop its own "open university" on a state basis rather than joining other states on a regional or national basis. Total development cost may run from $20 million to $30 million, based on the experience of the British Open University. These costs can be spread over two to five years.

As indicated in the footnotes to the table, the figures do not include inflation or additional appropriations required for increases in enrollment in the public colleges and universities. In view of the study on alternative future enrollment patterns commissioned in early 1973 by the Board of Higher Education, the Academy did not make estimates on the number of new students to be expected in public higher education by the year 1975-76.

If Massachusetts were to increase appropriations for higher education by $50 million to $75 million, it would still rank low in public expenditures for higher education compared to other states. In 1972 Massachusetts, at $27 per capita, ranked 49th in the nation in per capita expenditures for higher education (the national average was $41), and it also ranked low in higher education expenditures as a percentage of the total state budget.

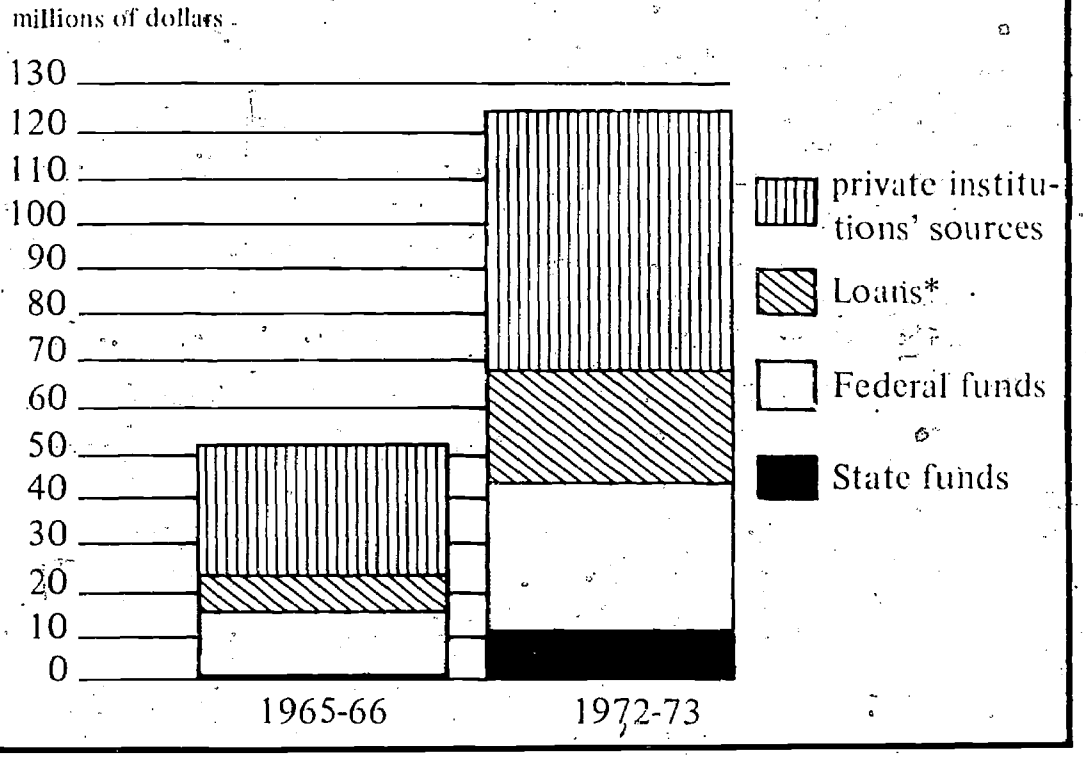
There are two offsets to the proposed increase in expenditures which would prevent a proportionate increase in the burden on the taxpayer. They are:

(1) Tuition increases.

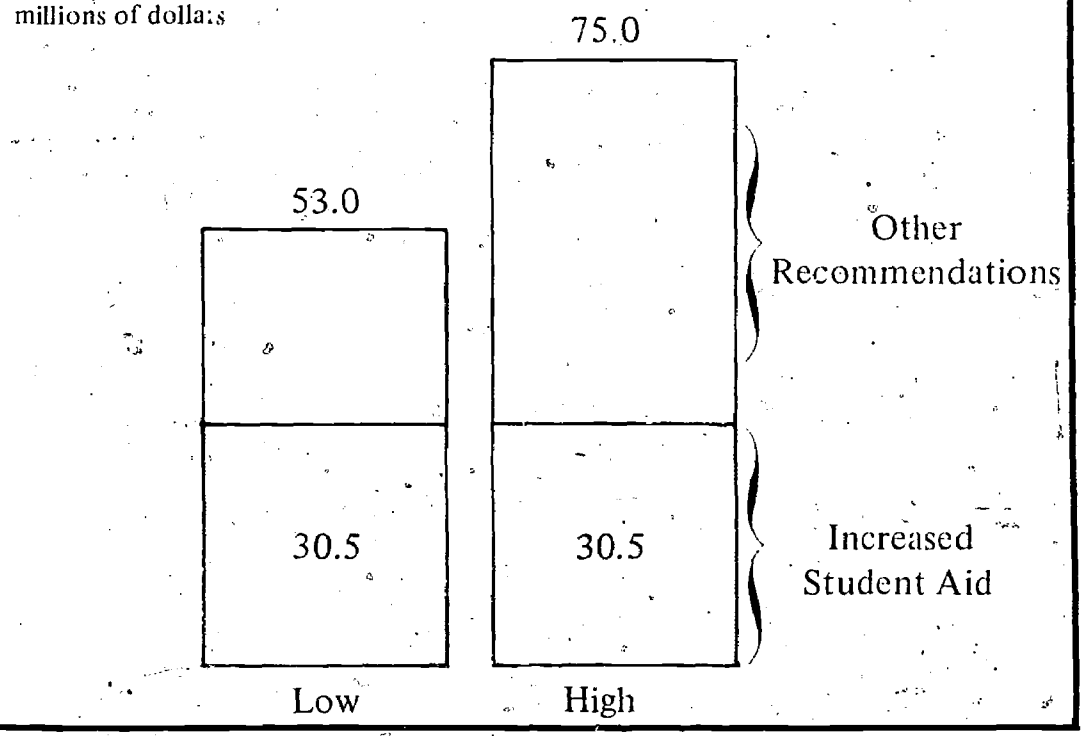
If the tuition were increased at the rate of $100 a year for the fiscal years 1974-75 and 1975-76, after the scholarship program had been expanded substantially, the increased tuition receipts would amount to $18 million.* If the rate of increase were $150 a year the additional tuition receipts

*Based on 90,000 full-time students in public higher education.

THE COMMONWEALTH PROVIDES ONLY A SMALL SHARE OF STUDENT AID



ACADEMY'S PROPOSALS EMPHASIZE ADDITIONAL STUDENT AID



*By the Higher Education Assistance Corporation

would be $27 million. The burden of the increased expenditures would, therefore, be divided between the taxpayers and those students who have the ability to defray a larger share of the cost of their own education.

(2) Reductions in capital expenditures.

A 75 percent cutback of the combined total of $325 million* in appropriations which have not been spent and in projects which have been authorized but for which funds have not yet been appropriated would result in a reduction of proposed costs of approximately $245 million. Pro-rated over five years, the reduction in proposed cost would amount to $49 million annually.**

Massachusetts could also prevent higher education operating expenditures from skyrocketing by better long-range planning, more effective management, and fuller use of resources in both the private and public sectors (which would also assist in the proposed reduction in capital outlay).

*Consists of (a) $65 million of construction for which appropriations have been made but building activity has not started and (b) $260 million of new projects which have been authorized by the General Court but for which money has not yet been appropriated.

**It is true, of course, that construction in Massachusetts is paid for by borrowing, and is not an immediate burden to the taxpayer. Nevertheless, the funds have to be repaid with interest by the taxpayers over a period of time, and as repayments are made they constitute a charge to the budget.

However, when all the steps suggested have been taken, needs of great importance and urgency will still remain. These can be neglected only at great social and economic detriment to the state and irreparable loss to its citizens.

The precise distribution of the costs of higher education between the student and his parents and the state and its taxpayers is a matter of judgment. There is no absolutely "right" figure for all purposes, for all institutions, or for all times.

In a resolution adopted February 23, 1973, the Massachusetts Board of Higher Education noted that:

> The recently announced federal budget for fiscal 1974 portends a deepened financial crisis for both public and private institutions of higher education in Massachusetts particularly in the area of student financial aid. This exacerbates a long standing problem with regard to adequate financial aid and has important implications for tuition policy.

The Board then went on to say:

> In moving toward a policy position consistent with the dual goals of equity and efficiency, the Board of Higher Education recommends that:
>
> > The Secretary of Education seek sufficient funding to eliminate financial barriers to education generated by the total costs to students of attending college in both public and private institutions of higher education.
> >
> > That the funds for this financial aid program be derived from the General Fund, and specifically that tuition revenues not be viewed as a source for these funds.

The Board concluded by saying:

> When the Secretary has designed the fund and obtained the appropriation sufficient to its purposes and made available such funds to the Board of Higher Education for distribution, the Board of Higher Education recommends that the segmental boards employ their power to set tuition and bring the level of tuition in each segment to a point that is in the range of 30 to 40% of the appropriated cost of instruction.

The Academy considered various ways of linking tuition and student aid. None of these was found to be free of difficulties. The Academy chose to recommend prompt action to increase student aid along the lines set forth in Recommendation A and also to recommend that tuition at public institutions be raised gradually thereafter until a level of approximately 40 percent of cost is reached.

In weighing decisions regarding tuition levels at Massachusetts public colleges and universities, the state should focus primary attention on:

- the probable effects on access to, and utilization of, opportunities for higher education by young people and older adults from minority groups, low-income families,

and other groups for whom access in actual fact is far from open;

- the impact on the ability of private colleges and universities to compete for students and thus to remain as viable options for Massachusetts students; and
- the total costs of higher education to Massachusetts taxpayers, and the ability and willingness of taxpayers to bear the costs of an excellent system of public higher education.

It is impossible to forecast precisely the effects of different tuition levels at the public colleges and universities on the proportion of Massachusetts students enrolling in private institutions. It is possible, however, that over the next several years the present low tuition policy might attract to public institutions many students who would otherwise attend private institutions, with a resulting cost to the state annually of no less than $2,000 per student. Moreover, if some private colleges closed because of drops in enrollment, the transfer to public institutions would be accelerated further, mounting even more the cost to Massachusetts taxpayers.

Increases in tuition would obviously raise the cost of attending public colleges and universities, and a higher proportion of student aid funds should, therefore, be used for support of students in those institutions. Accordingly, the present law which allots 10 to 25 percent of scholarship funds to students in public institutions needs to be reconsidered. As student aid increases, freedom of choice for students comes closer to reality; and the need diminishes for the arbitrary allocation of student aid funds between public and private institutions.

Regardless of the decision made on levels of tuition, the General Court will need to look to other sources of revenue to keep the Commonwealth's system of public higher education vigorous and responsive (see Recommendation B). Additional sources of revenue will likewise be required for the purchase of urgently needed programs from private institutions and for other measures to assure continuance and enhancement of the great benefits flowing from the many excellent independent colleges and universities in the state (see Recommendation C).

IV. FURTHER DISCUSSION AND COMMENTS

The recommendations in Chapter III were arrived at by the study team and the officers of the Academy after:

- interviews with 500 representatives of higher education in the Commonwealth, including executive officials of colleges and universities, representatives of faculty and students, and members of government agencies with higher education responsibilities;
- a sampling of public opinion on higher education policy matters through a questionnaire sent to 750 business people, members of organizations interested in higher education, representatives of the taxpayers, the League of Women Voters, etc.;
- the study and analysis of available data and documents submitted to the study team by the higher education agencies in the Commonwealth and the executives of the public higher education segments;
- the study and analysis of many books, documents and reports on higher education published by U.S. Government agencies, the Carnegie Commission on Higher Education,

the American Council on Education, and other key educational organizations and agencies;

- the assembly, tabulation, and analysis of statistical data on enrollment, number of faculty, operating budgets, and assets submitted by each of the public higher education segments and 43 of the private colleges and universities which enroll 90 percent of the students in private higher education;
- meetings with an Advisory Committee appointed by the Massachusetts Advisory Council on Education, consisting of 11 representative, knowledgeable laymen and 11 professional persons in higher education in the Commonwealth; and
- working with four out-of-state consultants with national reputations and a number of in-state consultants who examined special higher education problems in the Commonwealth and prepared papers for members of the study team and the Advisory Committee.

Chapter V, starting on page 136, presents a summary of the statistical facts and figures gathered during the study.

Appendix A presents a tabulation of the new statistical data assembled by the study team. Appendix B sets forth the national and state assumptions for the future used for the study.

This chapter presents some of the background information, analyses made, and conclusions drawn during the course of the study for each of the policy areas examined.

A. Access to Higher Education and Equalization of Educational Opportunity

Today everyone agrees that higher education ought to be made available to all residents of the state without restriction because of economic status, sex, race, minority group membership, or other extraneous factors. Yet, serious impediments to equal access exist in Massachusetts because of:

1. Cost Barriers. Thousands of young people and older adults in Massachusetts are denied access to higher education because the costs exceed their financial resources; and the total amount of funds allocated for scholarships and loans from both public and private sources is far short of the amount that would permit all who wish to enroll to do so without regard to ability to pay.

2. Other Barriers. Participation in higher education by minority group members, those of low socio-economic status,

and women is seriously deterred because of deficiencies in early education (resulting in failure to develop requisite cognitive abilities), biases in tests and in admission criteria and procedures, lack of programs adapted to particular needs, etc.

Cost Barriers

The cost barrier operates most powerfully against prospective students from low-income families and cannot be removed by low tuition charges alone. During the academic year 1972-73, the average charges for tuition, fees, room, and board in Massachusetts were reported to be as follows:

Private institutions:	tuition and fees	$2,366
	room and board	1,393
	Total	$3,759
Public institutions:	tuition and fees	$ 382
	room and board	1,120
	Total	$1,502

While tuition and fees in Massachusetts public institutions are lower than the national average, some students still find them to be a serious burden. The cost of room and board at public institutions also discourages many low-income students. In addition, students from poverty backgrounds are more greatly affected than other persons

by those earnings which are "foregone" during enrollment in college; that is, the income they would have received if they had been working members of the labor force.

The present state scholarship program places ceilings on grants to students of $900 for tuition at private institutions, up to $250 for tuition at public institutions in Massachusetts, and $600 for tuition at public institutions outside Massachusetts. Obviously, these grants do not go far toward covering the minimum basic costs of even the relatively small number of successful scholarship applicants. The number of recipients is limited by eligibility requirements and by the amount of appropriations for scholarships.

With regard to cost barriers, Governor Francis W. Sargent said in an address in October 1972:

> For too long, higher education has been the preserve of the well-to-do. I agree with President Nixon that "No qualified student who wants to attend college should be barred by lack of money," and I pledge this state to be second to none in its efforts to carry out that promise.

That this objective is by no means fully realized under present policies is shown by the following comparisons:

- In 1969, according to a report of the Massachusetts Board of Higher Education, only 57 percent of low-income graduating high school seniors in the Boston area compared to 78 percent of high income seniors went on to higher education. (The Academy believes the situation is about the same in 1973.)
- In 1968, according to a Carnegie Commission report, only 25 percent of the black population in Massachusetts -- as contrasted with 47 percent nation-wide -- was within commuting distance of a college with non-selective admissions requirements and an annual tuition of less than $400. (Massachusetts figures will improve markedly with the opening of the Bunker Hill and Roxbury Community Colleges in the academic year 1973-74.)
- In 1970, the Census Bureau showed that in working class cities like Chelsea or Somerville no more than 35 to 45 percent of the residents aged 18-21 were attending school or college, compared to 71 percent in a suburban city like Newton. (The Academy believes that the situation in 1973 is about the same.)

In commenting on the cost barriers which limit access to higher education opportunity in Massachusetts, Dr. Joseph Boyd, the Academy's consultant, noted that:

- Even at public institutions (where the tuition is relatively low), the overall cost to students for tuition, fees, transportation, and minimum living expenses has placed higher education beyond the reach of many potential enrollees.
- The state scholarship program, because of low funding, limits assistance to those students whose parents are so impecunious that they can provide no more than $300 a year toward the student's expenses. Generally, these were families with incomes of less than $8,000 a year.
- For families with incomes within the $8,000 to $15,000 bracket, the burden is particularly heavy because they are completely untouched by the state scholarship program. Nearly one-half of the families in the state are in this income bracket.

- In the academic year 1972-73, scholarship grants were made to no more than 13,300 students, out of a total of 38,000 applicants; and the number of applicants was known to have been reduced substantially by the knowledge throughout the state of the severe restrictions in the scholarship program.

- In 1966, according to a report on student aid in Massachusetts (prepared by Graham Taylor and Robert Kates for the Board of Higher Education), a gap of $26 million existed between the amount available and the amount needed to meet the financial needs of Massachusetts students. Later, in 1971, Mr. Taylor estimated that the gap had grown to no less than $53 million (based on his estimates of total college expenses per student less parental contribution, student employment, and the amount of financial aid available).

Other Barriers.

Cost is not the only reason for lack of access to higher education in Massachusetts. Other barriers include:

- Educational deficiencies, resulting from poor early schooling or other deprivations. These deficiencies are found frequently among students from low-income families and others growing up in areas providing low-quality elementary and secondary schooling, meager cultural resources, and little intellectual stimulation (which in Massachusetts, as in other states, is characteristic of populous metropolitan slum areas where minority groups tend to be concentrated).

- Lack of appropriate programs. Many individuals, including able and creative persons, who wish to develop along lines different from those favored by academic traditions, find few programs adapted to their requirements. Although imaginative responses to these needs are beginning to appear in a few departments and schools of both private and public institutions, cost, location, admissions policies, and other factors frequently put these opportunities beyond the reach of many persons.

- Cultural biases and other forms of discrimination. Cultural inhibitions and the biases of counselors and admissions officers tend to discourage women and minorities from preparing for many professional

and technical occupations and to deflect them into less prestigious or less remunerative occupations.

- Motivational Barriers. Some young people -- perhaps an increasing number -- are unable to relate college programs to desired occupations and life styles; and the result may be decisions not to seek admission, or to enter and then drop out.

In commenting on the financial and other barriers to access of minorities to higher education, Dr. Willard R. Johnson, the Academy's consultant, noted that minorities constituted 6.0 percent of the enrollments in Massachusetts private institutions, but only 4.6 percent of the total enrollments in public institutions, and only 3.5 percent of total enrollments in the state colleges and the community colleges. The University of Massachusetts at Boston is near the top of the scale with 12.4 percent minority students, according to Dr. Johnson, but Lowell Technological Institute is low with only 1.6 percent minority students.

The colleges and universities of Massachusetts, both public and private, are attempting to compensate for inadequate secondary school preparation of many minority and low-income status students by developing and promoting Upward Bound programs and pre-freshman programs to help remove educational deficiencies. Tutorial services to help overcome academic deficiencies and high school equivalency programs are provided for thousands of students a year. Upward Bound programs are

operating successfully at Northeastern University and the University of Massachusetts, thus enabling a substantial number of the minority students reached to go on to college.

The Roxbury Community College is scheduled to start in the academic year 1973-74, with an initial enrollment of 500 students, 98 percent of whom will probably be black and Spanish-speaking. This college will feature a specially-designed curriculum focused on teaching basic skills.

The various special arrangements and supportive services in the state constitute a promising beginning of a program to help remove educational deficiencies, but only a limited number of students are enrolled. Dr. Johnson's report commented on the situation as follows:

- Programs such as those of Upward Bound and the Roxbury Medical Technical Institute, which reach out to local high schools and communities, have motivated minority youth to go on to higher education, but still enroll only a small number of persons.

- Roxbury Community College should provide a significant new means of access to higher education, but it should not be the only major access point for minorities to community colleges in the Boston area.

- Special supportive services for minorities in higher education institutions, such as the Committee for Collegiate Education of Black Students at the University of Massachusetts and the Afro Institute at Northeastern University, still serve only a small number of students.
- Employment and personnel policies of higher education institutions in the Commonwealth have not yet attracted, retained, or upgraded a large number of disadvantaged persons.

The extent to which opportunities for women are restricted in Massachusetts higher education was noted by the Task Force on Education of the Governor's Commission on the Status of Women, in 1972, when it said:

> The Task Force on Education has found that girls and women are not given equal educational opportunities with boys and men in Massachusetts schools, colleges and universities, both public and private, as students, faculty, and administrators.

Some of the salient points made in the report were as follows:

- Only one-third of the students in all Massachusetts universities are women; yet they constitute two-thirds of the enrollment in the state colleges.

- Only about 26 percent of full-time graduate students in Massachusetts are women.

- Of the first professional degrees conferred by Massachusetts institutions in 1969-70, women received only five percent in law, eight percent in medicine, and eight percent in architecture.

- There are more than four times as many places for men students as for women in the regional vocational schools; and 40 percent more places for men students in the terminal occupational courses in Massachusetts community colleges.

The report observed that:

> Girls and women do not receive an equal education in terms of dollars spent, courses provided, or higher educational opportunities offered; women faculty and administrators are concentrated at the lowest ranks, at salaries below male counterparts.

The Task Force observed further that cultural forces and the biases of educational counselors and administrators operate to exclude women from many high-level occupations and to steer them toward less remunerative jobs. Examples cited include the following:

- Women are enrolled in secretarial programs while men are enrolled in administrative and management programs.
- Women are enrolled in health-technician programs, men in data processing.
- Women are channeled by vocational training into clerical and low-paid service work, men into more remunerative activities.

The Task Force report recommended that discrimination in admission on account of sex be forbidden at all institutions, public and private; and that the Massachusetts Commission Against Discrimination be funded to permit enforcement of anti-discrimination legislation.

B. Public Higher Education

Massachusetts after a late start now has an extensive system of public higher education which offers students choices among a considerable diversity of institutions and programs. The greater part of this system has developed since 1960, and the development is by no means completed. The period of exuberant expansion is, however, being replaced by a period calling for carefully worked out changes with an emphasis on quality.

Background and Current Status

The public sector of higher education consists of five "segments," two municipal colleges, and 26 public vocational schools which offer post-secondary education. The segments, each with a lay board appointed by the Governor, are:

- the University of Massachusetts, established as a college in Amherst in 1863 under the Morrill Land Grant Act, and named a university in 1947;
- The 11 state colleges, all of them founded before 1900, nine of them originally normal schools;

- the 15 regional community colleges, the first of which was established in 1960, and two of which will open during the 1973-74 academic year;
- Lowell Technological Institute, opened in 1897 to teach textile technology, and which since 1949 has added degree programs in a range of technical fields; and
- Southeastern Massachusetts University, which came into existence through consolidation in 1964 of the Bradford Durfee College of Technology and the New Bedford Institute of Technology, both of which were established in 1895.

The two municipal colleges are part of the local educational systems of the cities of Quincy and Newton. The 26 vocational schools which offer post-secondary education are administered by the State Board of Education.

Although Massachusetts had been in the forefront in the establishment of normal schools for teachers and acted promptly to take advantage of federal support for a land-grant college, it was one of the last states to develop a comprehensive system of public higher education. New impetus came in 1958 when the Legislature established the Board of Regional Community Colleges to determine and fill the need for educa-

tion at the community college level. Then, with the adoption of the Willis-Harrington Act in 1965, the public institutions entered a new era, and the growth since that time has been rapid.

Offices and boards concerned with the overall direction and coordination of higher education include:

- the Executive Office of Educational Affairs, whose function is to coordinate all state educational agencies, to recommend changes in their organization and structure, and to review their budgets; and
- the Board of Higher Education, whose function is to plan expansion of public higher education, review budget requests, authorize new functions and programs, and administer the state scholarship programs.

The Governor has proposed a reorganization of the present structure to include a Board of Post-secondary Education and a number of regional boards. The Academy's report takes no position on the composition, character, or function of the statewide board.* However, various functions will have to be exercised and this report assumes that the Commonwealth will continue the present arrangements (via the Board of

*In accordance with the limitations on the Academy's assignment provided for by the contract with the Massachusetts Advisory Council on Education.

Higher Education) or make new arrangements (along the lines proposed by the Governor, or some other arrangement agreed to between the Governor and the General Court).

The public institutions in Massachusetts are currently providing higher education to a total of 135,500 students, over 94 percent of whom are Massachusetts residents. These students are distributed as follows:

Enrollment in Massachusetts Public Institutions
of Higher Education
Fall 1972

Segment or Institution	Number of Students*
Community colleges	42,134
State colleges	47,842
University of Massachusetts	30,699
Lowell Technological Institute	5,864
Southeastern Massachusetts University	5,375
Quincy and Newton Junior Colleges (municipal)	3,276
Blue Hills Regional Technical Institute	313
Total	135,503**

* These figures are for total head count, including all full-time and part-time students. However, only about 83,000 of these students were fully funded by the state. Students in part-time and continuing education pay higher tuitions for programs which must be self-supporting.

** 3,700 additional students are doing post-secondary work at public vocational schools which do not offer a degree.

Because of rapid expansion in recent years, about 59 percent of the Massachusetts residents attending college in Massachusetts are now enrolled in public institutions, compared with 40 percent eight years ago. Public higher education in the Commonwealth has made other dramatic gains in the past few years:

- Since 1965, total enrollment has increased by more than 152 percent.
- Seven additional community colleges have been authorized.
- The University of Massachusetts has started a medical school in Worcester; will open a new campus at Columbia Point in Boston during the academic year 1973-74; has increased the range and quality of its offerings, particularly in graduate and professional programs at Amherst; and its reputation has been enhanced accordingly.
- The state colleges, which were previously concerned almost exclusively with teacher education, are becoming more diversified.
- Lowell Technological Institute and Southeastern Massachusetts University are continuing to strengthen their programs, particularly in science, engineering, and business administration.

- Many of the community colleges are strengthening their ties to the communities served and are continuing to expand their occupational programs.

- The University of Massachusetts and other institutions are assiduously exploring nontraditional approaches to higher education.

- A task force is engaged in developing the plans for the establishment of an "open university" for the Commonwealth.

Financial support of higher education has also increased substantially, from $44 million in fiscal year 1966 to a proposed $213 million in fiscal year 1974. Despite this growth, in 1972 Massachusetts still ranked 49th among the states in per capita public expenditure on higher education and in 1970 it ranked 48th in the percentage of state expenditures devoted to higher education. The principal reason for these low expenditures is that Massachusetts continues to rely heavily on the private sector for the education of many of its citizens.

In terms of state expenditures per full-time equivalent student enrolled in public higher education, Massachusetts ranked 34th in the nation in 1970 at an estimated $1,337 per student, compared to the national average of $1,625.

Capital Construction and Space Utilization

Between 1968 and 1973 the public colleges and universities in Massachusetts increased the size of their total plant by more than 61 percent, from about 13 million square feet to about 22 million square feet. Appropriations for construction from 1966 to 1973 included $679 million from the general capital budget, $52 million in special appropriations, and $104 million in bonds issued by building authorities for dormitories and other revenue producing buildings, for a total of $835 million. Because of a statewide freeze on capital appropriations, no new public construction funds were appropriated in the fiscal year 1973.

The amount appropriated since 1965 is in excess of all of the capital expenditures made by the state for higher education from the beginning of public higher education in the Commonwealth until 1965, and represents the culmination of tremendous efforts to expand public facilities subsequent to the Willis-Harrington study and the establishment of the various segments in higher education.

The public higher education expansion was accompanied by a $400 million increase of facilities at private colleges and universities between 1965 and 1972, raising the total private investment in facilities to approximately $1.3 billion.

The big increase in the amount of space ready for use in Massachusetts at both the public and private institutions of higher education followed by a few years the large growth in undergraduate full-time enrollment in the Commonwealth. As the enrollment curve began to rise a decade ago, academic space shortages existed everywhere. The community college system was yet to be built. There was no University of Massachusetts campus in Boston. The Amherst campus and the facilities of the state colleges and the private colleges and universities were inadequate to meet the needs of the times. Building programs, therefore, had to be started quickly at many places to accommodate growing enrollments and new programs.

Although gaps in available facilities may still exist and some buildings being used for academic purposes are substandard or obsolete, there is no doubt that Massachusetts' public higher education plant is able to handle today's student body with a reasonable degree of comfort. From a series of campus visits, the Academy study team concluded that with the opening in the academic year 1973-74 of the new campus of the University of Massachusetts at Boston and of new community college campuses in Boston, Greenfield, and Holyoke, the public higher education system will have largely caught up with current space needs and probably those that are in prospect for a number of years to come.

There may be a few exceptions. For example, some geographic areas may experience a rapid population growth; some newly developed programs may require highly specialized facilities; and some new teaching techniques may be developed which will require the rearrangement, renovation, or even rebuilding, of existing classrooms.

The Academy estimates* that in the fall of 1972 the classrooms at public colleges and universities were in use for academic purposes no more than 32 hours per week (on the basis of a five-day week from early morning to late evening); and that, when they were used, they were filled on the average to no more than 57 percent of capacity. There is no doubt that a higher utilization is possible and should be required before additional construction is authorized.

With respect to housing: over 96 percent of the housing units were filled at Massachusetts public colleges and universities during the early part of the 1972-73 academic year. This percentage seems to have been higher than in many states where news reports indicate that many vacancies exist in student housing, partly as a result of a change in student attitudes about living on campus. A report by the Association of Colleges and Universities Housing Officers based on a survey of 278 institutions with 2.8 million students showed that dormitory occupancy had decreased steadily every year since 1969. In addition, the bed space available

*Based on the assumption that where only fall 1970 figures were available, they were representative in fall 1972.

had decreased at many institutions because they were increasingly converting dormitories to other uses. For example, at the State University of New York at Buffalo, one of the residence halls was converted into housing for the elderly. The University of Oklahoma leveled one dormitory and used the property for a training center. Other colleges and universities closed empty dormitories; some used them for visitors. New York University could not fill its dormitories at a 25 to 50 percent discount; and when the University finally offered the rooms rent free, a substantial number remained empty.

As a result of their study for the Massachusetts Advisory Council on Education, University Consultants, Inc. of Cambridge expect that a substantial part of the enrollment growth in the future will involve students who will go to college part-time, enroll in extension activities, or enter nontraditional educational programs. Students in these categories use a lower proportion of space and housing than those in full-time formal programs.

If construction in progress is included in projected space available, there is a real possibility then that by 1980 there will be a surplus capacity in Massachusetts in the academic plants of public colleges and universities. This problem may be exacerbated by an expected decrease in higher education enrollment in the 1980s brought about by the lowered birth rates of recent years. The number of births in Massachusetts dropped from 115,000 in 1961 to 79,000 in 1972, and the

children born in those years will be the college students of the 1980s.

A surplus capacity already exists at some private colleges and universities in the Commonwealth as a result of their having built with a continuously growing full-time enrollment pattern in mind. In the spring of 1973, preliminary data assembled by the Association of Independent Colleges and Universities in Massachusetts showed space available in private institutions for 15,000 more students than were enrolled. This was the first time that such a large number of vacancies had been reported.

Until now no state has been able to work out statewide plans for utilizing for public purposes the plants, equipment, and other resources of private colleges and universities. However, the present squeeze on state resources and institutional budgets will certainly prompt exploration of the possibilities. Cooperation between public and private institutions in Massachusetts could make unnecessary for many years any large new expenditures for constructing buildings and otherwise expanding the capacity of public institutions. Appropriate arrangements for the public use of excess space and other resources of private colleges and universities over the next five to ten years could also help these institutions balance their budgets and make significant operating economies.

Curbing Overexpansion

All productive systems tend to expand; but unlimited expansion

results in dispersion of resources and reduction of effectiveness. The Massachusetts public higher education system has reached a stage where selective use of resources is necessary to advance high priority objectives. This must not be construed as an argument for the reduction or leveling off of expenditures. Instead, judicious pruning and increased financial support are both essential to enable the public institutions to meet present and future demands.

During the next few years the state institutions will have to make hard decisions on cutting back in areas where they are over-expanded as well as in areas where they are duplicating each other's efforts and those of the private institutions. The Academy staff received numerous reports and statements about areas in which unnecessary expansion or duplication has occurred or been proposed. Among the areas mentioned as examples were teacher education, legal education, marine science, para-medical professions, and engineering technology.

The staff was not able to investigate all of these areas; but the following data concerning the supply and demand for teachers suggest a considerable lag in the response of some public colleges in Massachusetts to prospective changes in the composition of the work force:

- The total enrollment in the public elementary and secondary schools in Massachusetts is expected to drop slightly* between 1972 and 1980. The number of teachers is expected to increase slightly* as a result of changes in student-teacher ratios.

- On the basis of these projections and an estimated annual turnover of eight percent, Massachusetts will need to recruit only about 5,000 new elementary and secondary school teachers a year from now until 1980.

- In 1972, the colleges and universities in the Commonwealth awarded bachelors' and masters' degrees in education to at least 6,500 Massachusetts residents.** A similar number of teaching degrees are expected to be awarded to residents in 1973 and 1974.

- In 1972 the Massachusetts state colleges, the traditional suppliers of teachers in the Commonwealth, graduated 4,100 students who had either majored or minored in education. Only 2,300 of these persons were actually teaching the following fall.

*According to projections by the Massachusetts Department of Education.

**In addition, teaching degrees were awarded to 3,800 nonresidents, some of whom expect to remain in the state.

- The central office of the state college system recommended in 1972 that the state colleges cut back on teacher education and change their character to "multi-purpose, career-oriented institutions." However, by the spring of 1973 not a single college had proposed a cutback in teacher education for the following year. Some had instead proposed a further expansion.

The danger of overexpansion, because of institutional ambition or failure to take account of existing or proposed programs in other public or private institutions, can be dealt with through statewide planning and budgeting processes. The Board of Higher Education is becoming increasingly sensitive to the need to curb overexpansion, as is illustrated, for example, by its efforts to develop a policy for marine science programs. The Board told its Collegiate Authority Committee in January 1973 that:

- Whittier Vocational Technical Institute and Massasoit Community College had submitted plans for marine science programs.

- Southeastern Massachusetts University and the University of Massachusetts planned to develop further their present marine science programs.
- Massachusetts Maritime Academy had proposed to the state colleges a summer program in marine science similar to the one offered at Woods Hole.

The Board then recommended referring institutions interested in offering marine science programs to nearby centers of marine science research and training. Whittier, for example, the Board said, has expressed a particular interest in an estuarial program and could be referred to the Jackson Research Laboratory. Massasoit could look toward Woods Hole, Massachusetts Maritime Academy or Southeastern Massachusetts University.

Agenda for the Future

Massachusetts is not yet at the point where it can be content to level off expenditures for public higher education. In past years, many Massachusetts residents, considered qualified for enrollment in the state colleges and universities, were turned away because of limitations imposed by legislative appropriations.

In 1972, for example, the public institutions rejected because

of the lack of available funding the following number of applicants* who were otherwise qualified:

University of Massachusetts, 8,000 students;
State colleges, 6,900 students; and
Community colleges, 4,100 students.

Even the most conservative estimates indicate that for a number of years the demand will continue for places in public institutions. However, the high priorities for the future will not be in the expansion of faculties and physical facilities. Instead, the emphasis can be expected to focus on:

- the continued improvement in the quality and relevance of instruction;
- the meeting of the needs of new types of students;
- the adaptation of educational programs to occupational and other changes in society;
- the development of alternatives to traditional types of education, including "open universities" and other off-campus arrangements; and
- expanding access to higher education (as described in the previous section of this chapter).

*The numbers reported probably include some duplicate applications.

Public institutions are expected to serve students from all income levels, and to make special efforts to meet the needs of residents of Massachusetts who have been barred from higher education by poverty or social discrimination. Among the changes needed are more programs adapted to the career expectations and other aspirations of minority groups, women, and others who are not well served by traditional programs. Also essential is a greater differentiation of the roles and missions of the several types of public institutions of higher education in the Commonwealth. This differentiation should take into account the particular strengths and distinguishing characteristics of the individual institutions and would provide students with more clear-cut options. In this connection it is important that:

- the community colleges continue to emphasize career development and continuing education;
- the special role of the community college in mobilizing community resources for educational and cultural purposes be kept at the forefront;

- the state colleges continue to develop a flexibility to enable them to be useful institutions and to provide career programs other than teacher training; and
- the University of Massachusetts continue to provide quality education, especially for minority and low-income students, based on a mixture of student interests and state economic and social needs, but without duplicating functions which are already being adequately performed by other public or private institutions. (An excellent approach to planning the University's future is in the Report of the President's Committee on the Future University of Massachusetts, published in December 1971.)

C. Private Higher Education

Higher education in Massachusetts includes a number of private colleges and universities regarded as representing the highest educational quality in the country, no matter how the term "quality" is defined. Because of their number, diversity, and distinctive contributions, the private institutions comprise one of the state's most important enterprises, one which produces numerous benefits to the Commonwealth by:

- employing a large number of highly qualified persons;
- bringing into the state the purchasing power of students attracted from other states and countries;
- developing professional, managerial, and technological manpower, some of which remains in the state permanently; and
- creating a wide spectrum of industrial spinoffs from the research conducted at these institutions.

New Problems for Private Institutions

Although private colleges and universities in Massachusetts enroll a higher proportion of post-secondary students than in any other state, private enrollment, as a percentage of the statewide total, has been declining for at least 15 years. Starting in the fall of 1972, the absolute number of private higher education students in Massachusetts also began to decline, a trend expected to continue for the next few years because of:

- the relatively high tuition at the private institutions together with prospects for sharp increases in the future;
- the expansion of public institutions in Massachusetts;

- the expansion of public and private institutions in other states and their capacity to enroll more students who might otherwise have enrolled in Massachusetts private institutions; and
- the reduction in the rate of increase in the number of people in the 18- to 24-year old age group and the reduction in the rate of increase in the proportion going to college.

These new trends are occurring at a time of a significant rise in costs due to inflation. As a result, nearly all private colleges and universities in Massachusetts as elsewhere in the country are being forced to face budget crunches.

In 1970 the Select Committee for the Study of Financial Problems of Private Institutions of Higher Education in the Commonwealth reported to the Governor that costs were rising faster than income at colleges and universities, that it was becoming increasingly difficult to meet operating costs, and that the amount of debt and deferred maintenance was rising.

For the academic year 1972-73, the private institutions reported a combined deficit of about $2 million in response to a special Academy questionnaire, compared with a surplus of $16 million in 1965-66. Because the institutions reporting made a variety of assumptions for the future, it was impossible for the Academy staff to project a year-by-year total deficit for the next few years. There is no doubt, however, that if enrollment continues to decline and costs rise, the private institutions can be expected to be facing substantial deficits for some time.

A complicating factor is that private colleges and universities in the Boston area are threatened by the imposition of property taxes by local communities. Until now, these private institutions, in accordance with federal statutes and practices in other states, have been exempted from the property tax and the income tax. But a number of local communities have argued that they provide police, fire, health, and other services to students without receiving adequate compensation, and they have been putting pressures on the private institutions for payments in lieu of taxes.

An additional complicating factor for the private junior colleges is that their graduates may be placed at a disadvantage by the policy of the Massachusetts state colleges of giving priority to transfer students from the public community colleges. In a resolution adopted in November 1972, the American Association of Community and Junior Colleges urged the reversal of this policy in Massachusetts.

The Choices for Private Higher Education

Private colleges and universities can meet the future financial situation only by:

- eliminating programs, reducing the number of faculty in existing programs, and reducing the range and scope of services offered students; or
- obtaining additional funds from present or new sources.

Cutbacks in educational programs at private institutions in Massachusetts are already beginning to occur. Recently reported examples are those at:

- Harvard University's School of Public Health. Because of reductions in federal support, the School was forced

to postpone the opening of a new $12 million classroom and teaching laboratory from February 1973 to September 1973. By then it is hoped that the funds needed to open the new facility will become available.

- Boston University. In early 1973 plans were announced to cut 110 positions from various schools within the University, to phase out programs in the School of Engineering, and to drop the School of Education's adult education program. Plans also call for higher tuition and a freeze on faculty and staff salaries.

- Tufts University. The University Steering Committee's January 1973 plan included a proposal to combine the faculties of three colleges with accompanying administrative streamlining.

- Brandeis University. In early 1973 plans were announced to phase out the Master of Fine Arts Film Program.

Federal government support of scientific research, health education, library expansion, and construction in general has in recent years represented a major source of financial assistance to many private institutions. Because of a change in national priorities, federal programs assisting higher education institutions may have passed the peak. Whatever the decisions of the Congress on the future

funding of specific programs (and these might take a year or two to work out), reasonable prospects are that the total amounts of federal funds available to private colleges and universities in Massachusetts (as elsewhere in the country) will be smaller during the next few years than in the past.*

Private institutions in Massachusetts receive no direct aid from the state. An amendment to the state constitution in 1917 prohibits any direct aid, assistance, or grants to private institutions of higher education in the state, or even contracting with such institutions for the rendering of specific services.

In 1972, after the first reading of the bill, the General Court voted to amend the Constitution to permit direct state aid to private institutions of higher education. If the General Court acts in similar fashion in 1973, the amendment would be on the ballot for the voters to consider in fall 1974. Amending the Constitution by itself would not, however, provide any direct financial assistance; provision of this assistance would then depend upon the passage of further legislation and funding.

At present, private colleges and universities receive two forms of indirect aid from the state (in addition to the exemption from the property and income tax). They are:

*A similar problem faces the public universities in Massachusetts and, if the federal cutbacks are severe, the state may find it necessary to fill the gap.

(1) In 1957, the General Court incorporated into law a provision that 10 to 25 percent of the total appropriation for general scholarships could be used for the assistance of students attending public institutions of higher education. The remaining 75 to 90 percent of the annual appropriation for scholarships -- a proposed $9.5 million in the fiscal year 1973-74 -- is available to assist students attending private colleges and universities. While the proposed appropriation is $9.1 million more than the $400,000 available in 1965, the scholarship awards per student are still so small and limited to students with such low family incomes that the institutions themselves have to provide substantial additional financial help to every student aided by the state.

(2) In 1969, the General Court established the Health and Education Facilities Authority, a public corporation, to issue tax exempt bonds to finance the construction of hospital facilities and of classrooms and other educationally related buildings on the campuses of private colleges and universities.

By 1972 the Authority had financed capital expenditures on 22 new buildings at four out of about 65 colleges and universities that might be eligible.

In commenting on the need to prevent reduction in services at private colleges and universities and in the quality of the academic programs offered, Dr. Frederick Terman, the Academy's consultant, observed that the private institutions will probably have to seek substantial assistance from the Commonwealth in the years ahead. In his report* to the Academy, Dr. Terman said:

> If present trends continue over the next few years in Massachusetts a number of small private colleges, especially two-year colleges and the weaker liberal arts schools, can be expected to be forced to close. In addition, certain of the larger institutions, especially those with a limited endowment income, may find themselves in a struggle for survival resulting from a squeeze between declining enrollments and continued fixed expenditures. Many other institutions will be able to stay alive only by reducing the quality of their instruction. Therefore, the time to consider alternative courses of action is now, rather than when a moment of crisis is reached.

Dr. Terman went on to note that the deterioration of private education in Massachusetts would have serious consequences to the Commonwealth. Unless the state alters its policies on assistance to private education, it might be faced by:

*Dr. Terman's paper, which includes descriptions of numerous options with regard to public support of private higher education, is being published separately by the Massachusetts Advisory Council under the title, "Aid to Private Higher Education in Massachusetts: How? Why?"

Loss of income from thousands of out-of-state students now attracted to Massachusetts by the quality of the private colleges and universities.

These students bring funds into the state by patronizing local retailers, banks, restaurants, and other businesses. In 1972 the estimated net in-migration of students to Massachusetts (the difference between the number of Massachusetts residents attending higher education out of state and the number of out-of-state residents attending colleges and universities in Massachusetts) was 37,000. If these students annually spent an average of $5,000 each, the net gain to the Massachusetts economy was about $185 million a year.

Greatly increased costs to expand the public sector of higher education in order to provide for Massachusetts students formerly served by the private institutions.

If all the 54,000 Massachusetts residents studying full time in Massachusetts private

institutions had to be educated by the state; then, on the basis of the present state appropriation for the public institutions, the additional cost to the state would be in excess of $100 million a year.

Irreparable loss of the diversity and creativity which have marked life in Massachusetts since Colonial times.

Massachusetts private colleges and universities have been substantial contributors to the Commonwealth's social, cultural, and economic development over the years. The state's role as a major intellectual, cultural, and scientific center of the nation will be greatly diminished if the high quality of the private colleges and universities is reduced.

D. Planning, Coordinating and Budgeting

Current Status

Although a number of initiatives are now being undertaken, the Commonwealth has inadequate provisions for data collection and analysis, planning, and budgeting, which make it difficult for the state to manage its higher education enterprise effectively. In addition, the Commonwealth has not yet developed adequate mechanisms for coordination among the segments of public higher education or between the public and private sectors.

These deficiencies are the result in part of the General Court's failure to appropriate sufficient funds to support the work of a central planning staff. The result: decisions have been made on an *ad hoc* basis depending on the pressures of the moment, and overall statewide policy with respect to the future direction and expansion of higher education has been unclear.

During the academic year 1972-73 the Board of Higher Education brought together for the first time some key information on the activities of all the colleges and universities in the Commonwealth, both public and private. This effort was supported by a combination of limited state and federal funds. Unless supplemented by additional money on a regular continuing basis the result will be only another *ad hoc* investigation.

Numerous studies have, of course, been made on higher education matters in the Commonwealth during the past ten years. The Willis-Harrington Study (1962-64) was followed by studies sponsored by the Board of Higher Education, the public higher education segments, the Massachusetts Advisory Council on Education, and the Governor's office. Many of these studies have been highly informative, and some have served well as guides to action. Such one-time studies, however excellent in themselves, cannot constitute an adequate substitute for the continuous development of information as a basis for policy formulation and implementation.

The consequences of a lack of clear definition of authority and shortage of funds for planning have been fragmentation of effort and deficiencies in information. The advancement of higher education objectives under present provisions tends, therefore, to be piecemeal and partial -- falling short of a comprehensive and systematic approach to the generation of sound bases for determining priorities, allocating resources, providing incentives for responsiveness to identified needs, or coordinating efforts to the desired ends. As a result, the General Court has been forced to make important decisions

on education policy through its annual appropriations and other legislation without adequate information on changing needs or the probable effects of these decisions.

Basic Requirements for Planning

Adequate mechanisms for data collection and analysis are the necessary foundation for higher education planning in Massachusetts. The information provided should:

1. enable budget makers and legislators in the Commonwealth to anticipate the requirements for capital investment and operating expenses and to identify changes needed in either institutional or student support;

2. make it possible for institutions to take into account the Commonwealth's needs and the programs of other institutions in the state as they clarify their own goals and objectives and establish policies for recruitment and admission of students, faculty appointments and personnel policies, changes in curriculum offerings, and public services of various kinds.

3. permit and encourage the pooling of resources -- between public and private and different types of institutions -- for the accomplishment of common purposes;

4. encourage each institution in the Commonwealth to take full advantage of particular institutional strengths and geographical and other factors, in order to develop special programs or unique services; and

5. enable interested citizens to perceive the full array of services and opportunities provided by the higher educational institutions and to locate duplication, deficiencies, or anticipated needs which require action.

Higher education planning in Massachusetts does not have to be directed toward the formulation of a master plan, a five-year plan, or other formal document; but statewide planning is an essential prelude to, and accompaniment of, sound policy decisions and effective coordination of the diverse institutions and agencies of higher education. It is important that there be (1) a continuing process of assessment of needs and operations, leading to revision of objectives and policies or reallocation of responsibilities and

resources; and (2) the communication of information essential to good decisions and productive action to all engaged in, affected by, or responsible for higher education in the Commonwealth.

The crucial question is how such a process can be inaugurated and maintained at a high level of functioning. The answer can be found only by a close consideration of the character of an agency for planning; its location in the structure of higher education; its relationship to agencies of budgeting and management; its sources of financial support; its degree of autonomy and authority; and its staffing pattern.

Coordination Through Planning and Budgeting

Planning in Massachusetts could become a primary instrument of coordination in many ways. For example:

- Involving representatives of both public and private institutions in the planning processes could further voluntary cooperation and lay the groundwork for acceptance of decisions regarding coordination.

- Communicating information to institutional decision makers could enable them to adapt the plans for their

institutions to statewide priorities and the plans of other institutions.

- Analyzing alternatives, making cost-benefit estimates, and providing other information could establish the bases necessary for budgetary reviews and decisions.

Budgeting could also be a powerful instrument of coordination -- positively, through incentives for cooperation, and, negatively, through withholding or reducing state funds where lack of cooperation may lead to ineffectiveness or poor utilization of resources. Budgeting for higher education, as for other public purposes, must, of course, recognize the overall budgetary responsibilities of the Governor and the General Court. However, there needs to be a safeguard against punitive or arbitrary use of budget power, and this could lie in the deliberations of a respected state coordinating board which makes decisions based on competent data analysis and planning.

Improving the Mechanics of Budgeting

Limiting the use of the budget, potentially a most effective management tool, to cost-cutting would be a great waste of management

effort. Instead, the higher education budget in Massachusetts should become a springboard for the creative spending of the funds the state allocates to higher education to achieve desired objectives. In effect, the budget should be a mechanism for implementing the state's higher education plan through:

1. withholding or reducing support for duplicate or low priority programs and services;

2. identifying possibilities of sharing facilities between overcrowded institutions and those with surplus space;

3. offering tangible incentives in the form of funds for cooperative activity;

4. supporting new ideas for combined action by providing funding for development and/or administrative overhead; and

5. encouraging effective management by sharing any savings realized with the institutions involved. (A "green carrot may have to go along with the budget "stick" in order to fire the enthusiasm of those whose participation in the management and planning process is essential.)

In Massachusetts, over-concentration on line-item budgeting and other operating details has tended to:

- emphasize the importance of the dollar audit;
- imply that it is essential to keep educational administrators "on their toes" in order to avoid waste of the taxpayers' money;
- interfere with the flexibility of institutions and campuses and the development of accountability of educational programs based on outcomes; and
- place the internal budget and operating policies of individual campuses too closely under the jurisdiction or influence of political officials.

Line-item budgeting has also tended to inhibit innovation and change as well as to perpetuate the tendency of some campuses to proliferate courses and programs and to compete for additional studerts rather than to cooperate with each other. As a result, the distinctions with regard to institutional functions have become blurred, with the state colleges competing for enrollment with the community colleges at the entering level, and with the

University of Massachusetts at the upper division and even at the graduate level.

Before the budget can be an effective instrument of planning policy and cooperative activity in the Commonwealth, simplification of the budget-making process will be required. Steps that might be taken include:

1. Standardizing the calculation of costs and outputs among comparable programs and among institutions by:
   a. identifying the key factors which influence the level of cost and quality;
   b. defining the terms and categories to be used by all institutions and the bases for cost calculations; and
   c. preparing instructions and guides for budgeting which will facilitate comparable cost comparisons and other types of data analysis.
2. Assigning to each educational program or service all of the costs involved, including estimates of the amortization required to cover the cost of the space and equipment used.

3. Comparing capital and operating costs in order to determine how each category affects the other.

4. Concentrating on the "output" of higher education and analyzing to the extent possible the "value added" by educational programs, or the cost benefits of alternative programs.

5. Providing a single lump sum appropriation to each state-supported college and university, to be considered as an "instructional subsidy."

6. Establishing adequate mechanisms for annual accountability.

E. Cooperation and Innovation

Effective achievement of the Commonwealth's goals for higher education requires two complementary developments: (1) greater responsiveness to changing needs, and (2) more effective use of resources.

One means of fostering increased responsiveness to needs is to provide support for experimental projects designed to develop improved alternatives to traditional curriculum patterns, modes of instruction, and place, time and credit-bound conventions in higher education.

Experimentation and innovation are now going forward in many private and public colleges and universities in Massachusetts, but the prevailing conditions are not ideal for the systematic development and evaluation of new concepts and programs, or for diffusion of the more productive alternatives which may be developed. Moreover, the failure to coordinate the efforts of the several institutions which are working along parallel lines -- or even of the several departments within a single institution -- often leads to wasteful duplication and lessens chances for successful solutions of the problems encountered.

Closer cooperation among institutions and between the public and private sectors of higher education undoubtedly would expedite the development, evaluation, and adoption of improved programs and practices. Such cooperation would also make major contributions to the more effective use of resources generally, and thus promote the achievement of all top priority objectives for higher education.

Consortia and Other Cooperative Efforts

The activities of a number of consortia in Massachusetts indicate that private and public institutions can work toward common objectives and meet student needs; for example:

- The Five Colleges Consortium in the Connecticut Valley, which links four private colleges and the University of Massachusetts at Amherst, provides the mechanism for cross-registration of over 3,500 students, and operates a common department of astronomy.

- The Worcester Consortium, which joins eight private and three public institutions, has a large-scale cross-registration system and operates a common library program -- providing 24-hour access to two million volumes from the libraries of the participating institutions.

- SACHEM (Southeastern Association for Cooperation in Higher Education in Massachusetts), which connects three private and five public institutions, has initiated joint faculty appointments and an extensive interinstitutional library cooperation program -- including a telephone hot-line and daily truck service between member institutions.

There are no formal consortia in or around Boston, although the presidents of the eight major universities in the city meet from time to time and are jointly sponsoring a study of the economic impact of

higher education in the area. Numerous bilateral and multilateral arrangements contribute to either improved services or economies, or both, including, for example, the following:

- Harvard University buys time from the Massachusetts Institute of Technology's computer.
- Simmons College, Boston College, Boston University and the Massachusetts Institute of Technology work together in a Black Studies program.
- Emmanuel College provides classroom space to Boston State College.
- Bentley College students study languages and fine arts at Regis College; Regis students take computer science courses at Bentley.
- Cross-registration agreements in a number of fields have been made between Newton College and Boston College, Emmanuel College and Simmons College, and other institutions.
- Massachusetts College of Pharmacy students go to Boston University Medical Center for clinical training; Boston University students come to the Massachusetts College of Pharmacy for biochemistry.
- Boston State College rents dormitory space at Wentworth Institute; Franklin Institute rents dormitory space at Grahm Junior College.

Other cooperative efforts in Massachusetts include the conference of executives of 25 public and private Massachusetts colleges and universities convened on February 15, 1973, by the Board of Higher Education. The conference agreed in principle to:

- An equal opportunity pool to share the task of educating the underprivileged and poorly prepared in public and private institutions, with money grants to go with the student to the school of his choice.
- A public-private decision-making forum to gather data, to establish "a common and standard cost reporting system" across the state, and to resolve conflict over new programs and new capital outlay before making commitments.
- An exploration of graduate professional, technical, or occupational education and the feasibility of contracting for services by which the state could make economical use of existing resources in private institutions.

The presidents of the six public land-grant universities of New England are also involved in a cooperative effort. In a declaration issued on November 20, 1972 at Durham, New Hampshire, they endorsed:

- joint planning of graduate school development;
- examination of the possibility of regionwide professional schools;
- exploration of the concept of an "open university" on a regional basis; and
- common efforts to improve extension and continuing education programs.

Additional steps toward more effective use of resources in the Commonwealth could be worked out through arrangements for the sharing of expensive capital facilities by several institutions, both public and private; by pooling of faculty and other resources for the development of new programs and for increased effectiveness in highly specialized areas; and by developing additional consortia on both geographical and functional lines.

The Academy emphasizes here, as elsewhere in this report, that the use of interinstitutional cooperation to achieve a more effective use of resources looks toward the better attainment of educational objectives. Modest appropriations for planning, development, evaluation, and overhead could enlarge opportunities for students, faculty, and the public at large.

Continuing Education

Part-time and other forms of continuing education are an important part of the educational scene in Massachusetts. In the fall of 1972 an estimated 105,000 part-time students constituted one-third of the higher education enrollment in the state.*

Until 1973, the range and extent of continuing education and part-time programs in Massachusetts had not been assessed. However, the study conducted by University Consultants, Inc. of Cambridge is

*Part-time students are defined in this report as those who had a three-quarters load or less, which is consistent with the practice of the U.S. Office of Education. The study being conducted by University Consultants, Inc. uses a definition of half-time or less and thus reports fewer part-time students.

nearing completion, with publication of its report scheduled for fall 1973. This study is expected to identify the segments of the state's population for which the present provisions for continuing or part-time education are inadequate; to show where innovation is possible, and to indicate areas where cooperation is feasible between public and private sectors and among the various public institutions.

Certainly there is a need on the part of the Governor and the General Court, as well as the boards and heads of the several institutions, both public and private, to establish a positive long-term policy for encouraging and supporting the development of new and more effective forms of continuing education.

Nontraditional Education

On the national scene, recent studies and reports (particularly those by the Carnegie Commission on Higher Education, the Commission on Nontraditional Study, and the Newman Committee on Higher Education) have been highlighting the importance of supplementing, or even replacing, traditional on-campus programs with nontraditional approaches of various kinds. These new approaches are advocated primarily to improve access and increase the effectiveness of instruction. In some cases, they are also seen as a means toward long-range economies. For example, the establishment of an "open university" in the Commonwealth

is expected to achieve all of these objectives and it will be the responsibility of the Governor's Task Force to figure out a way to make higher education more accessible to those not in residence on campus, to individualize learning through sophisticated communications technologies, and to carry on these activities at low levels of cost.

It should be noted, however, that the goal of low cost for high quality programs using nontraditional educational techniques has not been achieved anywhere in the country. Educational programs of substance and quality require substantial start-up and development expenditures. The amounts can be amortized over more than one year, but only if the programs are used for significant periods of time and for a large number of students.

Many of the innovations suggested around the country were pioneered by Massachusetts colleges and universities, which have a long record of contributions to theory and research and to development of innovative programs. Nevertheless, Massachusetts has not yet gone very far toward incorporating the newer concepts and technologies into the mainstream of higher education. Moreover, little has been done to facilitate entry and reentry of adults at times of their own choosing into programs imaginatively adapted to their needs.

The Commonwealth needs to consider carefully the kinds of support and other incentives which might produce:

- increased experimentation with forms of off-campus study and residence periods of varying length to meet personal and career objectives;

- opportunities for persons to enter or reenter higher education throughout their entire lives by enrolling in:

  (1) regular on-campus courses,

  (2) nighttime or weekend classes,

  (3) short-term programs, and

  (4) individualized programs of many types;

- careful experimentation with and evaluation of newer technologies of instruction; and

- scheduling of programs at times and places convenient to employed persons, housewives, and other persons beyond the regular college-going age.

A small amount of "venture capital" from the state could serve to bring into play resources which might otherwise remain inert or be expended to small effect.

Final Note on Innovation

There is no certified "best way" of expediting reform in education. In the past, the creation of new institutions of higher education has proved to be a powerful propellant for change, as shown, for example, by the impact of the land-grant colleges and the community colleges. However, the basic new concepts presented by those institutions were worked out and spread widely and quickly because substantial government funding was available.

Some advocates of educational reform believe that the next few years will be a period when only new institutions will be able to respond adequately to the diverse and complex higher education needs which are confronting the country. Social invention has not, however, created a widely acceptable institutional form capable of replacing all or a part of the traditional higher education pattern in this country. In Great Britain, on the other hand, the "open university," a new concept, has become the largest higher education institution in the nation, achieving this position with government support in just a few years. A similar institution could possibly be the social invention capable of being of great assistance to higher education in Massachusetts. To be successful, it would have to be given a great deal of support and substantial financing.

F. Financial Support

For a decade or more, the higher education cost per student has increased nationally at the rate of about three percent a year in constant dollars. This increase in cost, combined with growing enrollment, has meant that higher education has needed a steadily increasing fraction of the gross national product (or, within each state, of the gross state product). Dr. Howard Bowen, an Academy consultant, has observed that other public services -- such as health, welfare, elementary and secondary education, and general government -- have been subject to similar cost increases during the period.

In recent years, the inexorable upward cost trends of higher education in Massachusetts, as elsewhere in the country, have caused Americans generally to question the value of the services rendered by colleges and universities, especially as they extend to ever larger numbers of students. However, when higher education is defined (as it is in Massachusetts) to include a wide range of vocational programs,

work-study programs, education adapted to adults, and other varieties of education serving people of different interests and objectives, there can be no doubt that:

- Higher education is suitable and necessary to a large fraction of the total population.

- Many more people are capable of responding to higher education than anyone had earlier imagined.

- The citizenry has been demanding and can be expected to continue to demand increasing availability of higher education programs. In Massachusetts, as elsewhere in the country, it is politically as well as socially necessary to meet that demand.

- Vast amounts of education are needed to operate an advanced technological society, to grapple with the enormously complex social problems of our time, and to achieve the quality of citizenship needed to deal with these problems.

Further Expenditure Increases Required

Higher education in Massachusetts will require more funds in the future than in the past because of: the prospective increase until about 1980 in the number of potential students (as indicated in the chapter on facts and figures); the general rise in prices and costs due to the inflation of the times (as indicated in the appendix on assumptions); and the need to increase access to higher education, to improve public institutions, and to protect the quality of private institutions (as indicated earlier in this report).

These cost-increasing factors can be offset in Massachusetts in a number of ways including the following:

a. a reordering of educational priorities;

b. increasing the state appropriations or increasing tuition at public higher education institutions, or both;

c. eliminating from the capital budget for half a decade, at least, a number of construction projects for which appropriations have not been spent or for which authorization was made and money not appropriated.

These approaches can be made in the years ahead only because Massachusetts has made great progress in developing its system of public higher education since 1965. Although the task is by no means complete, quality has improved, and most of the operating units required have now been established. The physical plant (including construction nearly completed) is adequate for current needs; and space utilization is lower than in a number of other public colleges and universities in the nation.

Reordering of Educational Priorities

Today the reordering of educational priorities in Massachusetts has become inescapable; and without such reordering it will be difficult to defend future budgets for higher education in the Commonwealth. Reordering will require the Board of Higher Education and the Secretary of Educational Affairs to work with the segmental boards and representatives of both public and private institutions in order to identify:

- high-priority objectives which require increased appropriations;
- high and intermediate priorities which require little or no additional funding; and
- the possibilities for savings through cutbacks in low-priority items.

With this information in hand, the Governor and the General Court would be able to establish the future size of the budget for higher education on the basis of priority needs related to the Commonwealth's goals for higher education. Increased expenditures undoubtedly will be required in some areas; but reductions may be possible in others. The net effect on the state budget is likely to be a call, in the years ahead, for larger appropriations than at present, but smaller than would otherwise be required to advance substantially toward the state's highest priorities. The success of the process will require that:

- the determination of priority needs becomes the combined responsibility of all of the higher education authorities and officials in the state, ranging from the Governor and the General Court on the one hand, to the individual departments, schools, and colleges, both public and private, on the other;

- the key concepts in priority determination become "the best use of resources," and "how to increase access to higher education to all who are able and willing to profit therefrom"; and

- the untouchables of previous eras be reexamined for possible use during the period ahead, including such concepts as:

  increasing student-faculty ratios;

  increasing faculty loads;

  reducing administrative personnel;

  increasing space utilization;

  reducing to a low level or eliminating completely new construction for which appropriations have not been spent or for which authorization was made and money not appropriated; and

  determining how the new educational media or new educational patterns can be used to increase learning at lower costs.

Sources of Financing

In his report to the Academy, Dr. Howard Bowen pointed out that there are only four sources of funds available for higher education in Massachusetts. They are: (1) state appropriations derived primarily from taxes; (2) tuition and fees; (3) federal grants; and (4) private philanthropy (sometimes in the form of endowment income).

Looking ahead for the next several years, Dr. Bowen predicted that neither the amount of federal grants nor of private philanthropy can be expected to increase substantially. Tuition at private institutions in Massachusetts can be expected to increase in the future as it has in the past, and this will undoubtedly continue to price some institutions out of reach of a larger and larger portion of previously held markets. Tuition at public institutions in Massachusetts can also be expected to increase.

Dr. Bowen pointed out that there are two philosophies regarding tuition charges. In Massachusetts, as in other states, they are poles apart. The arguments for relatively low tuition at public institutions are that:

- Young men and women of all backgrounds will be encouraged to attend college.

- A kind of rough equity on balancing of costs will be achieved. The reasoning is that students meet the costs of board, room and incidentals (often with the help of parents) and bear the burden of the income foregone while attending college. The state then provides for the cost of instruction and the other expenses of higher education.

- Two types of benefits accrue from higher education: those to society, which justify the public expenditure, and those to the student, which compensate for his private, personal expenditures and income foregone.

The arguments in favor of higher tuition at public institutions are that:

- The benefits of higher education accrue mostly to the individual student and are, therefore, private in their nature.

- The alleged benefits to society cannot be proved and are largely theoretical.

- Many families who can afford to pay all or most of the cost of their children's education in college receive unwarranted subsidies as a result of a relatively low tuition.

In its most extreme form, the high tuition point of view argues that educational services should be "priced" to cover the full cost, and that low-income students should be assisted by large grants or long-term loans payable by the student from income earned after graduation. At the present time few institutions, public or private, charge full cost.

Regardless of the tuition philosophy adopted by the Commonwealth in the future, additional state funds for higher education will be required to maintain the quality of the educational programs offered, both public and private, and to provide greater access through scholarship funds to higher education opportunities. Possible sources of funds available to the Commonwealth include the following:

- a growth in general revenue as a result of statewide economic expansion;
- increases in the rates of existing taxes;
- the levying of new taxes, such as a graduated income tax;
- the imposing of new taxes earmarked for higher education;
- the allocation of part of federally-shared revenue to higher education; and
- the transfer of a part of the state's revenues which are now dedicated to other purposes.

Examining the desirability or feasibility of increasing any particular source of the Commonwealth's revenue was not a part of the Academy's assignment. The study team noted, however, that the sources of funds listed above have been and are being used to meet higher education costs in other states.

The question has to be raised, of course, as to whether the Commonwealth could support substantial additional costs for higher education in the decade ahead. The answer: There is no doubt that the Commonwealth could raise additional money for higher education if the people and their leaders choose to do so. Constitutional hurdles

could be surmounted if the people and their legislative leaders give a high enough priority to higher education. If necessary, taxes could be increased; money from federal revenue sharing, if and when it comes, could be devoted to higher education; funds could be shifted to higher education from expenditure areas of lower priority; tuition could be raised, etc.

The matter is, therefore, a choice among a number of possibilities and not the economic ability of the Commonwealth to meet costs it wishes to assume.

To the question, "At just what level should public tuitions be set?" The answer must be arrived at by considering, first, the effects of tuition levels and available student aid on access to and utilization of opportunities for higher education; and, second, the probable impact on the ability of private colleges and universities to compete for students and thus to remain as viable enrollment options for Massachusetts students. When the amount is finally set, tuition at public institutions should reflect an equitable division of the cost of an excellent system of higher education between Massachusetts taxpayers and the students.

V. FACTS AND FIGURES*

This chapter summarizes the facts and figures on higher education in Massachusetts assembled by the study staff with the assistance of key educational officials in the Commonwealth. The purpose is to answer briefly the following five questions:

A. What is the financial situation of the Commonwealth and how does higher education fit into the picture?

B. What is the financial situation of higher education institutions, both public and private, in the Commonwealth?

C. What is the enrollment situation in higher education in the Commonwealth?

D. What is the student aid situation in higher education in the Commonwealth?

E. What is the space and space utilization situation in higher education in the Commonwealth?

During the course of the study the Academy sent a questionnaire asking for data on their operations to the public and private colleges and universities of the state. A summary of the tabulations of the data submitted is in Appendix A.

*The tables in this section have been simplified wherever possible. All statistical notes and qualifications have been placed in the appendix.

A. What is the financial situation of the Commonwealth and how does higher education fit into the picture?

In looking at this question, the study team found: The total of income and production in the state (gross state product) has increased 158 percent since 1960. During this period the state has been expanding the services provided its citizens and has increased its appropriations for operating expenditures by approximately 467 percent. As a result, the state total for appropriations now amounts to a larger percentage of the gross state product than in the past, as shown in Table 1.

Table 1

Gross State Product in Massachusetts Compared With State Appropriations for Operating Expenditures Selected Years, 1960-1974

Fiscal Year	Gross State Product (in millions)	State Appropriations for Operating Expenditures*		State Appropriations as a Percentage of Gross State Product
		Total Amount (In millions)	Amount Per Capita	
1959-60	$15,400	$ 435	$ 84	2.8%
1965-66	22,200	894	165	4.0%
1972-73	36,400**	2,420	417**	6.6%**
1973-74	39,700**	2,465***	422**	6.2%**
Percentage increases: 1960 to 1974	158%	467%	402%	121%

* Bond funds and federal grants not included.
** Estimated.
*** Proposed in Governor's Budget Message, January 24, 1973.

The increase in the state budget has caused state tax revenues to increase substantially over the years, both in dollar amount and per capita, as shown in Table 2.

Table 2

State Tax Revenues in Massachusetts
Selected Years, 1960-1974

Fiscal Year	Amount	Amount Per Capita
1959-60	$ 491,000,000	$ 95
1965-66	773,000,000	134
1972-73	1,882,000,000	324
1973-74 (Estimated)	2,000,000,000	343

The increases in state expenditures and state tax revenues since 1960 have been following a trend experienced in other states throughout the country. Massachusetts now ranks above the national average in both per capita expenditures by the state and per capita tax revenues as follows:

State Expenditures Per Capita

In 1960, Massachusetts, at $93 per capita, ranked 39th in the nation (the average was $100).

In 1971, Massachusetts, at $360 per capita, ranked 14th in the nation (the average was $273).

State Tax Revenues Per Capita

In 1960, Massachusetts, at $95 per capita, ranked 30th in the nation (the average was $101).

In 1971, Massachusetts, at $262 per capita, ranked 19th in the nation (the average was $249).

Although the amount appropriated for higher education has been one of the smaller items in the Massachusetts state budget, it has grown substantially in recent years, as shown in Table 3.

Table 3

Total State Appropriations* for Operating Expenditures in Massachusetts Compared With Amount Appropriated for Higher Education Selected Years, 1960-1974

Fiscal Year	Appropriation	Appropriation for Higher Education	Appropriation for Higher Education as Percentage of Total
1959-60	$ 435,000,000	$ 18,000,000	4%
1964-65	599,000,000	38,000,000	6%
1965-66	894,000,000	44,000,000	5%
1966-67	778,000,000	58,000,000	7%
1972-73	2,420,000,000	177,000,000	7%
1973-74 (proposed)	2,465,000,000	213,000,000	9%

*Bond funds and federal grants not included.

In addition to the amounts for operating expenditures, the state appropriated some $679 million for construction on the campuses of higher education institutions between 1966 and 1973, about 72 percent of the general capital budget of the Commonwealth. The state also appropriated almost $52 million for construction which did not show up in the regular capital budget. The figures are shown in Table 4.

Table 4

State General Capital* Appropriations in Massachusetts Compared With Capital Budget for Higher Education 1966-1973

Fiscal Year	State General Capital Appropriations	Higher Education Capital Appropriations	Percentages of Appropriations for Higher Education
1965-66	$ 63,000,000	$ 40,000,000**	63%
1966-67	67,000,000	45,000,000	67%
1967-68	94,000,000	63,000,000	67%
1968-69	107,000,000	74,000,000	69%
1969-70	110,000,000	82,000,000***	75%
1970-71	295,000,000	253,000,000	86%
1971-72	206,000,000	121,000,000	59%
1972-73	0	0	0
Total	$ 943,000,000	$679,000,000	72%

*Does not include appropriations for highway construction, acquisition of recreational land, and a number of smaller items.

**Does not include Chapter 847-65 $1,750,000 for University of Massachusetts Medical School.

***Does not include Chapter 898-69 $50,000,000 for University of Massachusetts at Boston.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

In addition to the direct capital expenditures, the state also authorized a number of autonomous building authorities to construct dormitories and other revenue producing facilities at state institutions, and established the Massachusetts Health and Education Facilities Authority to finance construction at private institutions. Between 1966 and 1973 these authorities financed the construction of $104 million of public higher education facilities in the Commonwealth outside of the regular capital budget, and $30 million in construction at private institutions.

Although operating expenditures for higher education have increased as a percentage of the state budget over the years (as shown in Table 3), the aggregate amount per capita spent by the state is low compared with the remainder of the country. According to national tabulations of the figures:

> In the fiscal year 1962-63, Massachusetts, at $3 per capita for higher education, ranked 50th in the nation (the average was $10).
>
> In the fiscal year 1972-73, Massachusetts, at $27 per capita for higher education, ranked 49th in the nation (the average was $41).

The state budget for fiscal year 1974 is before the Legislature and no action had been taken on it at the time this report was prepared. However, the Governor found the budget situation tight and, in the process of balancing his budget, substantially cut the higher education requests proposed by the various segments. He also said that in his opinion no new taxes should be levied during the next two years. This now seems to be a generally accepted point of view in the Commonwealth. It should also be noted that in the fall 1972 general election the voters turned down a proposal for the levying of a graduated income tax. The prospects are, therefore, that when the appropriations for 1973-74 are finally made, the state's ranking in per capita expenditures for higher education will be about the same as in 1972.

Summary

During the past decade and a half public higher education in Massachusetts has been obtaining a somewhat larger share of an increasing state budget. Nevertheless, the state ranks low in per capita state appropriations for higher education compared to the rest of the country. With a tight budget outlook, this low ranking can be expected to continue for the next two years.

B. What is the financial situation of higher education institutions, both public and private, in the Commonwealth?

In looking at this question, the study team observed that the data had to be examined separately for the public institutions and the private institutions. In the process the study team found:

With respect to public institutions:

The appropriations for operating expenditure budgets for the public institutions of higher education have grown by a total of 357 percent since the fiscal year 1965-66. The figures, by segments, are shown in Table 5.

Table 5

Public Higher Education Appropriations
in Massachusetts by Segments
Fiscal Years 1966 and 1974

Segment	1965-66	1973-74 (proposed)	Increase	
			Amount	Percentage
University of Massachusetts	$22,600,000	$ 89,000,000	$ 66,400,000	294%
State Colleges	13,100,000	55,900,000	42,800,000	327%
Community Colleges	3,500,000	35,400,000	31,900,000	911%
Lowell Technological Institute	2,600,000	10,400,000	7,800,000	300%
Southeastern Massachusetts University	1,900,000	9,100,000	7,200,000	379%
Total - all segments	$43,700,000	$199,800,000	$156,100,000	357%

The cost for instruction for each segment included, of course, the amount needed to meet increases in the number of students as well as for the inflation in costs that occurred because of price rises. On a per student basis the total cost for instruction at the public institutions rose 46 percent between 1966 and 1973. The figures, by segments, are shown in Table 6.

Table 6

Expenditures for Instruction* Per Full-time Day Student in Public Higher Education in Massachusetts Fiscal Years 1966 and 1973

Segment	Amount Per Student		Increase	
	1965-66	1972-73	Amount	Percentage
University of Massachusetts	$1,158	$1,592	$434	37%
State Colleges	639	1,081	442	69%
Community Colleges	629	1,004	375	60%
Lowell Technological Institute	1,793	2,053	260	14%
Southeastern Massachusetts University	661	1,111	450	68%
Average for all Institutions	$ 867	$1,267	$400	46%

*Based on data reported to the Academy by the individual segments. Also includes amounts reported as departmental research.

The expenditure for instruction by each segment in constant dollars for each full-time student in public higher education changed approximately as follows:

Table 7

Constant Dollar Estimate* of Expenditures for Instruction Per Full-time Day Student in Public Higher Education in Massachusetts, by Segment Fiscal Years 1966 and 1973

Segment	Expenditure Per Student		Change	
	1965-66	1972-73 in constant 1965-66 dollars	Amount	Percentage
University of Massachusetts	$1,158	$1,167	$+ 9	+ 1%
State colleges	639	793	+154	+24%
Community colleges	629	736	+107	+17%
Lowell Technological Institute	1,793	1,505	-288	-16%
Southeastern Massachusetts University	661	815	+154	+23%
Average for all institutions	$ 867	$ 929	+ 62	+ 7%

*Based on data reported to the Academy by the individual segments. This comparison attempts to exclude the effects of the rise in prices during the period.

While they have grown substantially, the tax supported budgets of public institutions in Massachusetts are not as high per student as those of public institutions in a number of other large states. A comparison for 1971 is shown in Table 8.

Table 8

Tax Supported Budget Per Equivalent Full-time Student
In Public Higher Education in Massachusetts
And Other Large States
Fiscal Year 1970-71*

State	Tax Supported Budget Per Full-time Equivalent Student*	Rank
New York	$2,718	2
Illinois	2,457	3
New Jersey	1,978	5
Pennsylvania	1,930	7
Wisconsin	1,758	10
Connecticut	1,717	13
California	1,567	19
Michigan	1,500	23
Ohio	1,403	27
Massachusetts	1,337	34
U.S. Average	1,625	

* Tuition income has been subtracted from total appropriation in order to arrive at the calculations in this table. Data for subsequent years are not yet available, but when they are reported, Massachusetts' ranking is not expected to differ substantially.

In Massachusetts, income from tuition of full-time day students (equivalent to about 16 percent of appropriations) goes directly into the General Fund.* A comparison of this income and the appropriation by segments is shown in Table 9.

Table 9

Appropriations and Estimated Tuition From Full-time Day Students and Public Higher Education in Massachusetts Fiscal Year 1973

Segment	Appropriation	Tuition Income	
		Amount (estimate)	As a Percentage of Appropriation
University of Massachusetts	$74,200,000	$11,700,000	16%
State colleges	48,100,000	7,800,000	16%
Community colleges	28,000,000	5,400,000	19%
Lowell Technological Institute	9,200,000	1,100,000	12%
Southeastern Massachusetts University	6,600,000		15%
Total - all segments	$166,100,000	$27,100,000	16%

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

*In many states, the tuition income of public institutions is regarded as a part of the income of those institutions and is added to the amount of the appropriation made by the legislature.

The tuition and fees per student at state colleges and universities in Massachusetts are now and have for some time been lower than those reported by other states. Some recent figures for representative institutions are shown in Table 10.

Table 10

Tuition and Fees at Selected State Institutions For Full-time Undergraduate Resident Students Academic Year 1972-73

Institution or System	Amount
Pennsylvania State University	$855
State University of New York (upper division)	825
University of Michigan	696
University of Illinois, Urbana-Champaign	686
State University of New York (lower division)	675
University of Connecticut	655
Rutgers University (New Jersey)	655
Indiana University	650
University of California System	644
University of Massachusetts at Amherst	469
Massachusetts State Colleges	380
Southeastern Massachusetts University	370
Massachusetts Community Colleges	340
University of Massachusetts at Boston	308
Lowell Technological Institute	260
California State Universities (8 institutions average)	157
City University of New York	70

Note: The national average of tuition and fees for members of the National Association of State Universities and Land Grant Colleges was $518, and for members of the American Association of State Colleges and Universities it was $435.

With respect to private institutions:

Over the years the operating expenditure budgets for the private institutions in Massachusetts have been growing steadily, too. In response to a questionnaire sent by the Academy to private colleges and universities in the Commonwealth, 43 institutions (enrolling approximately 90 percent of the private higher education students in the state) reported that their expenditure budgets had grown by 68 percent between the fiscal years 1966 and 1973, as shown in Table 11.

Table 11

Operating Expenditures at Private Colleges and Universities in Massachusetts Fiscal Years 1966 and 1973

Institutions by Groups*	1965-1966	1972-1973	Increase	
			Amount	Percentage
	(In thousands of dollars)			
Group I (8 colleges)	$ 13,169	$ 21,888	$ 8,719	66%
Group II (4 colleges)	6,936	15,514	8,578	124%
Group III (13 colleges)	22,077	48,473	26,396	120%
Group IV (10 colleges)	59,220	106,844	47,624	80%
Group V (6 universities)	113,166	219,890	106,724	94%
Group VI (2 universities)	315,208	479,728	164,520	52%
Total - 43 institutions	$529,777	$892,337	$362,560	68%

* For list of institutions in each group see Appendix A.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

On a per student basis, expenditures for instruction by private institutions in Massachusetts grew approximately 63 percent between 1966 and 1973 as shown in Table 12.

Table 12

Expenditures for Instruction* Per Full-time Equivalent Student in Private Colleges and Universities in Massachusetts Fiscal Years 1966 and 1973

Institutions by Groups**	1965-66	1972-73	Increase	
			Amount	Percentage
Group I (8 colleges)	$ 639	$1,034	$ 395	62%
Group II (4 colleges)	446	887	441	99%
Group III (13 colleges)	513	835	322	63%
Group IV (10 colleges)	1,204	1,685	481	40%
Group V (6 universities)	723	1,216	493	68%
Group VI (2 universities)	2,081	3,678	1,597	77%
Average - 43 institutions	1,021	1,660	639	63%

*Includes amounts reported as departmental research.

**For list of institutions in each group see Appendix A.

The cost for instruction in constant dollars at private institutions increased 19 percent between 1966 and 1973 as shown in Table 13.

Table 13

Constant Dollar Estimated* Expenditures for Instruction Per Full-time Equivalent Student in Private Colleges and Universities in Massachusetts
Fiscal Years 1966 and 1973

Institutions by Groups**	Expenditures Per Student		Increase	
	1965-66	1972-73 in constant 1965-66 dollars	Amount	Percentage
Group I (8 colleges)	$ 639	$ 758	$119	19%
Group II (4 colleges)	446	650	204	46%
Group III (13 colleges)	513	612	99	19%
Group IV (10 colleges)	1,204	1,235	31	3%
Group V (6 universities)	723	891	168	23%
Group VI (2 universities)	2,081	2,696	615	30%
Average - 43 institutions	$1,021	$1,217	$196	19%

*This comparison of expenditures attempts to exclude the effects of the rise in prices during the period.

**For list of institutions in each group see Appendix A.

Except at Harvard University and the Massachusetts Institute of Technology (Group VI), which carry on large research activities for the

federal government, more than half of the expenditures of private institutions were financed by the tuition and fees charged to students, and the percentage has been growing in recent years. A comparison of sources of funds in 1965-66 and 1972-73 is in Table 14.

Table 14

Sources of Funds Received by Private Colleges and Universities in Massachusetts Fiscal Years 1966 and 1973

Institutions by Groups*	Amount		Percentage of Total	
	1965-66	1972-73	1965-66	1972-73
	(In thousands of dollars)			
Groups I to IV (35 colleges)				
Tuition and fees	$ 53,771	$106,450	50%	54%
Government	4,838	8,684	5%	4%
Endowment	11,882	19,274	11%	10%
Private gifts & grants	6,191	13,222	6%	7%
Auxiliary enterprises	26,176	39,105	24%	20%
Other	4,107	9,003	4%	5%
Total	$106,965	$195,738	100%	100%
Group V (6 universities)				
Tuition and fees	$ 62,586	$125,105	52%	58%
Government	17,388	26,540	14%	12%
Endowment	2,852	4,857	2%	2%
Private gifts & grants	6,906	12,335	6%	6%
Auxiliary enterprises	20,484	32,093	17%	15%
Other	9,628	15,103	8%	7%
Total	$119,844	$216,033	100%	100%
Group VI (2 universities)				
Tuition and fees	$ 35,286	$ 60,610	11%	13%
Government	194,611	262,136	61%	55%
Endowment	30,493	50,995	10%	11%
Private gifts & grants	22,050	28,432	7%	6%
Auxiliary enterprises	20,866	32,000	7%	7%
Other	16,106	43,961	5%	9%
Total	$319,412	$478,134	100%	100%

*For list of institutions in each group, see Appendix A.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

In the fiscal year 1973, charges for tuition, fees, room and board at the private colleges and universities in Massachusetts were about 50 percent higher than the charges in fiscal year 1966, as shown in Table 15.

Table 15

Typical Charges to Undergraduates for Tuition, Fees, Room And Board at Private Colleges and Universities in Massachusetts Fiscal Years 1966 and 1973

Institutions by Groups*	1965-66	1972-73	Increase	
			Amount	Percentage
Group I (8 colleges)	$2,436	$3,375	$ 939	39%
Group II (4 colleges)	2,259	3,567	1,308	58%
Group III (13 colleges)	1,996	2,807	811	41%
Group IV (10 colleges)	2,729	4,021	1,292	47%
Group V (6 universities)	2,453	3,627	1,174	48%
Group VI (2 universities)	2,870	4,674	1,804	63%
Average for all institutions	2,520	3,770	1,250	50%

*For list of institutions in each group see Appendix A.

In the fiscal year 1973, the private colleges and universities in the state as a whole virtually balanced their operating budgets.** In the fiscal years 1974, 1975, 1976 and thereafter, they expect to face some substantial deficit problems.

**The estimates in the table on page 186 show a deficit of $2 million for 1972-73, equivalent to one-quarter of one percent of total operating expenditures.

From the projections submitted to the Academy, the study team found it was impossible to arrive at an overall total of the amount of deficit expected year-by-year for the decade ahead. The various private institutions in the state used a number of different bases in making their projections. The projections could not, therefore, be added together.

In 1969, however, the private colleges and universities worked closely with a study group, appointed by a committee chaired by William Saltonstall, in order to develop a consistent basis for the projections used in the committee's report to the Governor. The estimate for 64 private colleges and universities in the state was that on the basis of "business as usual" they expected to incur aggregate deficits of about $50 million a year by 1975-76 and $140 million a year by 1980-81.

These deficit estimates were so high that they showed, then as now, that it was going to be impossible for private institutions to make "business as usual" their operating assumption for the future. Most institutions in the state have, in fact, already started to change their plans and are meeting the changing enrollment and cost situation by cutbacks in programs and personnel.

Summary

The financial structure at institutions of higher education, both public and private, is tight everywhere in the state. The growth of the Sixties has left a legacy of unresolved problems, all of which seem to cost money.

C. What is the enrollment situation in higher education in the Commonwealth?

In examining this question the study team found:

The total higher education enrollment (head count) in fall 1972 was 319,856 of which 42 percent was in public institutions and 58 percent was in private institutions. The total had increased substantially from the fall of 1965; and the percentage enrolled in public institutions had increased, too, as shown in the following table:

Table 16

Higher Education Enrollment in Massachusetts
Fall 1965 and Fall 1972

Type of Institution	Enrollment		Percentage of Total	
	1965	1972	1965	1972
Head Count				
Public colleges and universities				
2-year	9,210	44,811	4%	14%
4-year*	44,198	89,681	21%	28%
Subtotal	53,408	134,492	25%	42%
Private colleges and universities				
2-year	15,462	13,659	7%	4%
4-year*	142,381	171,706	67%	54%
Subtotal	157,843	185,364	75%	58%
Total	211,251	319,856	100%	100%
Full-time Equivalent				
Public institutions	42,000	101,000	25%	41%
Private institutions	124,000	148,000	75%	59%
Total	166,000	249,000	100%	100%

*Four-year refers to institutions offering at least a bachelor's degree and includes all institutions offering advanced and first professional degrees.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Between 1965 and 1972 the enrollment (head count) more than quadrupled at public community colleges (the first of which was opened in 1960); enrollment at the University of Massachusetts nearly tripled. Recently, however, the rate of growth began to slow down and between 1971 and 1972 enrollment at public institutions as a whole increased by only 6 percent.

Enrollment at private colleges and universities, as a whole, grew about 17 percent between 1965 and 1972, but the 2-year colleges actually experienced an enrollment decline.

Between 1971 and 1972 the total enrollment at private institutions decreased by 2 percent. This was the first net annual decline in the total enrollment in private higher education in the Commonwealth since the early 1950s.

The increase between 1965 and 1972 in the percentage of students enrolled in public institutions and the decline in the percentage enrolled at private institutions, shown in Table 16, continue a long-term trend that has taken place in Massachusetts as well as elsewhere in the country. The percentage of students enrolled in private institutions in Massachusetts is substantially higher than the national average, however, and in this respect Massachusetts is unique. The data are in the table that follows.

Table 17

Percentage of Higher Education Enrollments
in Public and Private Institutions
Selected Years, 1955-1972

Fall of Year	Massachusetts		U.S. as a Whole	
	Public	Private	Public	Private
1955	11%	89%	56%	44%
1960	16%	84%	59%	41%
1965	25%	75%	66%	34%
1970	38%	62%	73%	27%
1972	42%	58%	76%	24%

The total enrollment in fall 1972 consisted of 67 percent full-time students, and 33 percent part-time students. The distribution was not substantially different from the figures reported for the fall of 1965, as shown in the table which follows.

Table 18

Comparison of Full-time and Part-time* Student Enrollment in Colleges and Universities in Massachusetts Fall 1965 and Fall 1972

Category	Number (estimated)		Percentage of Total	
	1965	1972	1965	1972
Public institutions				
Full-time	37,000	85,000	69%	63%
Part-time	17,000	50,000	31%	37%
Subtotal	53,000	134,000	100%	100%
Private institutions				
Full-time	107,000	131,000	68%	71%
Part-time	51,000	55,000	32%	29%
Subtotal	158,000	185,000	100%	100%
All institutions				
Full-time	143,000	215,000	68%	67%
Part-time	68,000	105,000	32%	33%
Total Head Count	211,000	320,000	100%	100%

*Part-time students are defined in this report as those who had a three-quarters load or less, which is consistent with the practice of the U.S. Office of Education. The study being conducted by University Consultants, Inc. uses a definition of half-time or less and thus reports fewer part-time students.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Of the full-time students enrolled in higher education in Massachusetts in 1972, about 63 percent were from the state, with the remainder of 37 percent from other states and foreign countries. While the number of students from out of state was higher than in 1965, the percentage of the total was slightly lower, as shown in the following table.

Table 19

Geographic Distribution of Full-time Students Enrolled in Higher Education Institutions in Massachusetts Fall 1965 and Fall 1972

Type of Institution	Number (estimated)		Percentage of Total	
	1965	1972	1965	1972
Public institutions				
In-state	34,000	80,000	93%	94%
Out-of-state	3,000	5,000	7	6%
Subtotal	37,000	85,000	100%	100%
Private institutions				
In-state	48,000	54,000	45%	42%
Out-of-state	59,000	75,000	55%	58%
Subtotal	107,000	130,000	100%	100%
All institutions				
In-state	83,000	135,000	58%	63%
Out-of-state	61,000	79,000	42%	37%
Total	144,000	214,000	100%	100%

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

The public institutions of higher education reported 4,592 minority group members enrolled in Massachusetts, while the private institutions reported 9,785, as shown in Table 20.

Table 20

Minority Enrollment in Massachusetts
Institutions of Higher Education
Fall 1972*

Type of Institution	Number Enrolled				Total Minority Enrollment
	American Indian	Black	Oriental	Spanish-Surnamed	
Public					
University of Massachusetts at Amherst	80	1,085	214	205	1,584
University of Massachusetts at Boston	0	610	63	27	700
Lowell Technological Institute	4	43	25	19	91
Southeastern Massachusetts University	21	111	28	14	174
State Colleges (9 reporting)	83	748	94	308	1,233
Community Colleges (11 reporting)	107	547	105	225	984
Subtotal	295	3,144	529	798	4,766
Private					
4-year (48 institutions reporting)	149	6,648	1,255	1,073	9,125
2-year (19 institutions reporting)	16	410	117	117	660
Subtotal	165	7,058	1,372	1,190	9,785
Total	460	10,202	1,901	1,988	14,551

*As reported to U.S. Civil Rights Commission by institutions enrolling 81 percent of the higher education students in the Commonwealth.

In Massachusetts, according to the 1970 U.S. Census, 3.1 percent of the population was black, 1.1 percent were "persons of Spanish language," and 0.6 percent were Oriental, American Indian, etc. Minorities constituted 4.6 percent of the enrollment in public colleges and universities and 6.0 percent in private institutions in 1972 as shown in Table 21.

Table 21

Minorities as a Percentage of Total
Higher Education Enrollment in Massachusetts
Fall 1972*

Type of Institution	Percentage Enrolled				Total Minority Enrollment
	American Indian	Black	Oriental	Spanish-Surnamed	
Public					
University of Massachusetts at Amherst	0.3%	4.6%	0.9%	0.9%	6.7%
University of Massachusetts at Boston	0	10.8%	1.1%	0.5%	12.4%
Lowell Technological Institute	0.1%	0.8%	0.4%	0.3%	1.6%
Southeastern Massachusetts University	0.5%	2.9%	0.7%	0.4%	4.4%
State Colleges (9 reporting)	0.2%	2.0%	0.2%	0.8%	3.3%
Community Colleges (11 reporting)	0.4%	2.0%	0.3%	0.8%	3.6%
Average	0.3%	3.1%	0.5%	0.8%	4.6%
Private					
4-year (48 institutions reporting)	0.1%	4.4%	0.8%	0.7%	6.0%
2-year (19 institutions reporting)	0.2%	3.9%	1.1%	1.1%	6.3%
Average	0.1%	4.3%	0.8%	0.7%	6.0%
All Institutions - Average	0.2%	3.9%	0.7%	0.8%	5.5%

*As reported to U.S. Civil Rights Commission by institutions enrolling 81 percent of the higher education students in the Commonwealth.

In 1972 about 16 percent of the students in higher education in Massachusetts were enrolled in graduate and first professional* programs. The majority were in private institutions. In the professions of law, medicine, dentistry, etc. over 99 percent of the enrollment was in the private institutions. (The only public enrollment was at the new University of Massachusetts Medical School.) However, 91 medical students from Massachusetts (not counted in the Massachusetts totals) were enrolled in an exchange program at the University of Vermont administered by the New England Board of Higher Education.

A comparison of the total enrollments at the graduate and professional level in 1965 and 1972 as follows:

Table 22

Total Enrollments in Graduate and First Professional Programs in Massachusetts Fall 1965 and Fall 1972

Type of Institution	1965	1972	Percentage of Total 1965	Percentage of Total 1972
Public	3,000	10,114	8%	19%
Private	33,000	41,788	92%	81%
Total	36,000	51,902	100%	100%

*Programs which require at least two or more academic years of college work for entrance and a total of at least six years for a degree.

Regional Distribution of Enrollment

In 1972, 78 percent of all higher education enrollment in the Boston area was in private institutions. In other parts of the state, less than one-third of the enrollment was in private institutions, as shown in Table 23.

Table 23

Higher Education Enrollment in the Boston Area and Outside the Boston Area Fall 1972

Type of Institution	Boston Area	Outside Boston Area	Percentage of Total	
			Boston Area	Outside Boston Area
Public	40,209	94,179	22%	69%
Private	143,897	42,667	78%	31%
Total	184,106	136,846	100%	100%

Enrollment Outlook

On the basis of the trends in population and higher education enrollments between 1960 and 1972, the total enrollment in higher education in Massachusetts can be expected to increase until about 1980. Then there could be a decline in enrollment until 1990 as a result of the smaller college-age population. The downward trend will be influenced to a large extent by the lowered number of births in Massachusetts during the 1960s, which declined from 114,763 in 1961 to 79,169 in 1972, as shown in Table 24.

Table 24
Number of Live Births
in Massachusetts, 1955-1972

Year	Number of Births
1955	109,610
1956	111,407
1957	115,065
1958	114,563
1959	114,090
1960	114,018
1961	114,763
1962	112,342
1963	111,217
1964	107,970
1965	100,262
1966	97,513
1967	94,870
1968	91,761
1969	91,172
1970	92,382
1971	89,495*
1972	79,169*

*Preliminary data.

As indicated elsewhere in this report, a number of factors besides the declining birthrate may also affect the enrollment patterns during the 1970s and 1980s, including the following:

- decisions by the General Court on the overall financing of public higher education; and on the financial support, if any, of private higher education;
- the growth of enrollment at public institutions in the surrounding northeastern states, which may be sending fewer students to Massachusetts in the future than in the past;
- the growing interest of young people in career and occupational programs which do not require four years of college attendance; and
- the development of three-year bachelor's degree programs, "open university" programs, and other nontraditional forms of education.

Summary

The enrollment growth of the 1960s is giving way to a slowing down in the 1970s, and probably a net decline in the 1980s. Although Massachusetts is still unique in having a larger proportion of students enrolled in private institutions, the percentage in such institutions is declining, paralleling a long-term national trend.

D. What is the student aid situation in higher education in the Commonwealth?

In examining this question, the study team found that:

In the fiscal year 1972-73 the total amount of financial aid provided to students in Massachusetts higher education was in excess of $124 million, more than double the $51 million reported for fiscal 1965-66. A comparison is in Table 25 which follows.

Table 25

Sources of Student Aid in Massachusetts
Fiscal Years 1965-66 and 1972-73

Source	1965-66	1972-73	Increase	
			Amount	Percentage
	(in thousands of dollars)			
Resources of private institutions	$29,527	$57,216	$27,689	94%
Federal government:				
Educational Opportunity Grants	0	7,712	7,712	--
Social security educational benefits	231	1,762	1,531	663%
Work-study program	4,214	8,956	4,742	113%
National defense loans	8,638	10,948	2,310	27%
Higher Education Assistance Corporation:				
Loans	8,127	25,548	17,421	214%
State of Massachusetts:				
General Scholarship Program	400	8,000	7,600	1,900%
Other scholarships	165	503	338	205%
Appropriations to public institutions	438*	3,419*	2,981	681%
Total	$51,740	$124,064	$72,324	140%

*Includes share of matching funds required to enable public institutions to qualify for federal programs of assistance to college students; also an appropriation to the University of Massachusetts for unrestricted scholarship aid; 1972 also includes aid to disadvantaged students.

In addition to the kinds of assistance shown in Table 25 there were also:

- scholarships and fellowships provided directly to students by private foundations both in-state and out-of-state;
- state scholarships given directly to students by Pennsylvania and a number of other states which permit their residents to use scholarship funds out-of-state;
- tuition waivers provided by public institutions to veterans and others; and
- tuition waivers provided by private institutions to the children of members of their faculty and administrative staff.

Also, there is the low tuition policy of the public institutions in Massachusetts. This is designed to provide a subsidy to all students enrolled, a subsidy which is in excess, no doubt, of all of the other student aid funds provided in the state.

Indications are that the increases in student aid as well as the low tuition policy of the state colleges and universities have not been sufficient to meet the needs of all potential students in the Commonwealth. In 1966, there was a gap of $26 million between the funds available and the amount needed to meet the financial needs of Massachusetts students. Five years later the gap was estimated at no less than $53 million.*

*Estimates of the gap are based on calculations of total expenses involved in going to college less the amount of contribution expected from parents, earnings from student employment, and the financial aid available.

State Scholarship Programs

Most of the state scholarship funds are concentrated in the General Scholarship Program. There are, however, five other programs, as shown in Table 26.

Table 26

State of Massachusetts Scholarship Program
Fiscal Year 1972-73

Type of Program	Appropriation	Number of Candidates	Number of Awards	Stipend Levels
General Scholarship Program	$8,000,000	38,000	13,300	Private institutions: $900 Massachusetts public institutions: tuition up to $250 Non-Massachusetts public institutions: $600
Medical, dental, and nursing scholarships	350,000	1,546	690	Schools of Nursing: $300 Public Institutions: $600 Private Institutions: $700
Honor scholarships	128,000	*	640	Total tuition charge
Special education scholarships	15,000	*	31	Tuition up to a maximum award of $500
Scholarships for children of deceased members of fire and police departments	10,000	16	16	Tuition at public institutions
Scholarships for children of servicemen missing in action or prisoners of war in Southeast Asia	Enacted in 1972; no appropriation to date		no awards to date	

*Chosen from candidates for general scholarships.

The low funding of the General Scholarship Program in relation to student needs has limited assistance to those students whose parents were so impecunious that they could provide no more than $300 a year toward the student's expenses. Generally, these were families with incomes of less than $8,000 a year.

Twenty-three states provide $325 million programs of scholarship aid to students. A listing with a comparison also of the amount of student aid per capita is in Table 27.

Table 27

Appropriations for Student Aid in 23 States
Academic Year 1972-73

State	Total Appropriation	
	Amount	Amount Per Capita*
Vermont	$ 2,500,000	$5.63
Pennsylvania	60,500,000	5.13
Illinois	51,400,000	4.62
New York	80,100,000	4.40
New Jersey	25,700,000	3.58
Rhode Island	1,900,000	2.00
Indiana	8,800,000	1.70
Michigan	13,800,000	1.56
Iowa	4,200,000	1.50
Ohio	16,000,000	1.50
Massachusetts	8,000,000	1.41
California	27,800,000	1.39
Minnesota	4,700,000	1.24
Wisconsin	4,600,000	1.04
Maryland	3,300,000	.83
Connecticut	1,700,000	.56
Oregon	1,200,000	.56
Kansas	1,100,000	.51
Washington	1,700,000	.49
Tennessee	1,200,000	.31
Texas	3,000,000	.26
West Virginia	400,000	.24
Florida	900,000	.13
Average - 23 States		$2.17

*Based on 1970 population.

Between the academic years 1971-72 and 1972-73 student aid funds provided by the various states grew 18 percent. All of the states listed in Table 27 reported increases in the actual amount appropriated for student aid except Iowa (where the amount was $55,000 less than in the previous year) and Massachusetts, where there was no change.

The proposed budget for the Commonwealth for the fiscal year 1973-74 would increase the General Scholarship Program to $9.5 million.

Summary

Student aid in Massachusetts amounted to $124 million in the fiscal year 1972-73 plus the assistance provided by the low tuition policy of the state institutions. Nevertheless, the aid thus far provided and the amount proposed for the fiscal year 1973-74 is not great enough to make it possible for all who wish to go to college to be able to do so without regard to financial barriers.

E. What is the space and space utilization situation in higher education in the Commonwealth?

During the past decade the colleges and universities in Massachusetts, both public and private, made substantial capital expenditures. Considerable construction is still in progress.

The most recent summary on space by the Facilities Inventory Project of the Massachusetts Higher Education Facilities Commission showed that in the fall of 1971 all Massachusetts higher education had 72 million square feet of gross area, of which 47 million square feet were assignable.* Further details by types of institutions and uses of space are in Table 28 which follows.

*The remaining area was used for hallways, staircases, storage rooms, utility space, construction space, etc.

Table 28

Total Space in Massachusetts
Higher Education Institutions
Fall 1971

Item	Public Institutions		Private Institutions		Total
	Two-Year	Four-Year	Two-Year	Four-Year	
	(in thousands of square feet)				
Classroom area	245	798	180	2,136	3,360
Laboratory area	217	1,350	281	4,103	5,960
Library area	78	454	106	2,381	3,018
Office area	188	1,000	172	4,582	5,943
Other area	649	2,426	536	7,812	11,422
Total non-residential area	1,377	6,028	1,274	21,014	29,693
Residential area	9*	2,795	1,104	13,363	17,270
Total net assignable area	1,385	8,823	2,378	34,377	46,963
Unassigned area	775	5,151	1,252	17,980	25,157
Total gross area	2,161	13,974	3,630	52,357	72,122

*Includes only faculty housing and temporary space. As a matter of public policy, the community colleges provide no student housing.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

The gross figures are more easily understandable on a per student basis. Private institutions had more space per full-time equivalent student than the public institutions; and the least amount of space per student was in the public, two-year colleges, as shown in Table 29.

Table 29
Space in Massachusetts Higher Education Institutions
Per Full-time Equivalent Student*
Fall 1971

Item	Public Institutions		Private Institutions		Average
	Two-Year	Four-Year	Two-Year	Four-Year	
	(in thousands of square feet)				
Classroom area	9	12	21	16	14
Laboratory area	8	20	32	30	25
Library area	3	7	12	18	13
Office area	7	14	20	34	25
Other area	25	35	62	58	48
Total non-residential area	53	87	147	155	124
Residential area	0	41	127	98	72
Total net assignable area	53	128	274	253	196
Unassigned area	30	75	144	132	105
Total gross area	83	203	418	386	301

*Full-time equivalency is defined as full-time students plus one-third of all part-time students.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

A comparison of the amount of non-residential space per student in Massachusetts public higher education institutions in academic year 1971-72 with other public institutions and systems of higher education in the country is shown in Table 30.

Table 30

Non-residential Assignable Square Feet
Per Full-time Equivalent Student in Massachusetts
Public Institutions and Other Large Public Systems*
Of Higher Education

Institution	Area Per Student
	(in square feet)
University of Michigan	227
University of Illinois (Urbana)	181
University of California	170
University of Wisconsin (Madison)	165
Oregon State University	161
Southern Illinois University	158
University of Washington	145
State University of New York (Albany)	137
University of Massachusetts at Amherst	122
Southeastern Massachusetts University	97
Lowell Technological Institute	94
City University of New York (City College)	84
Massachusetts State Colleges	68
California Community Colleges	71
California State Colleges	64
University of Massachusetts at Boston	63
City University of New York (Brooklyn College)	61
Massachusetts Community Colleges	53

*Massachusetts data are for 1971. Data from other institutions are for 1969.

The Massachusetts figures in Table 30 are changing because of the large amount of construction still in progress. Estimates to 1973 available to the Academy study team are shown in Table 31.

Table 31

Total Space Expected to be Available
in Massachusetts Public Higher Education
Fall 1973

Segment	1971 Area	Area by 1973 (estimated)	Percentage Increase since 1971 (estimated)
	(in thousands of square feet)		
University of Massachusetts at Amherst	7,342	9,184	25%
State Colleges	4,669	5,579	19%
Community Colleges	2,161	3,013*	39%
Lowell Technological Institute	815	1,473	81%
Southeastern Massachusetts University	657	896	36%
University of Massachusetts at Boston	491	1,394	184%
Total	16,135	21,539	33%

*Two institutions did not report 1973 data.

In 1972 several community colleges moved from temporary quarters to new campuses. In the fiscal year 1973-74, Bunker Hill Community College, Greenfield Community College, Holyoke Community College, and the University of Massachusetts at Boston will inaugurate new campuses. Although the state colleges have not opened any new campuses in recent years, they have been making significant additions to their plants with new student unions, libraries, and residence halls.

According to the information available, as shown in Table 32, the public institutions used their space more intensively than the private institutions.

Table 32

Classroom Utilization in Colleges and Universities in Massachusetts
Fall 1972

Type of Institution	Average Number of Hours Per Week That Classrooms Were in Use*	Average Number of Hours Per Week That Student Stations Were in Use*
Public Institutions		
University of Massachusetts at Boston	35.7	24.2
Southeastern Massachusetts University	34.0	23.8
Community Colleges (9 reporting)	33.9	22.7
State Colleges** (11 reporting)	30.5	13.7
University of Massachusetts at Amherst**	29.1	16.0
Lowell Technological Institute**	25.0	14.0
Average for all public institutions	31.5	17.8
Private Institutions		
4-year**	23.5	11.8
2-year**	19.6	9.6
Average for all private institutions	23.2	11.8

*Based on a five-day week from early morning to late evening.

**Data are for 1970 and are assumed to be indicative of the situation in fall 1972.

There is always a question of how much space utilization is adequate. Table 33 compares utilization at public institutions in Massachusetts with those in a number of other states.

Table 33

Classroom Utilization Practices Among Public Higher Education Institutions in Selected States Compared with Massachusetts, 1970

Institution	Average Number of Hours Per Week That Classrooms Were in Use	Average Number of Hours Per Week That Student Stations Were in Use
California State Colleges	39.1	28.9
University of Minnesota	38.0	22.8
University of Oregon	37.4	23.2
Southern Illinois University	36.0	23.8
Oregon State University	34.6	22.5
California Community Colleges	32.8	23.9
University of Wisconsin	31.8	16.9
Massachusetts public institutions (average for 1972)	31.5	17.8
University of Illinois	30.1	16.6
University of Washington	29.5	17.7
University of California	29.3	17.3
University of Colorado	28.9	19.9
University of Michigan	28.7	14.6
University of Florida	28.1	14.9
Michigan State University	26.2	16.0

Summary

The total amount of gross area in Massachusetts higher education in 1971 was 72 million square feet, of which 47 million square feet were assignable. By 1973 the public institutions will have added at least 5 million square feet to the total gross area.

Appendix A

STATISTICS ON HIGHER EDUCATION IN MASSACHUSETTS

The tables that follow summarize the statistics assembled by the Academy on the operations of public and private colleges and universities in Massachusetts for the academic years 1965-66 and 1972-73. The data were prepared by each of the private institutions and by each of the segments of the public institutions, and submitted on forms prepared by the Academy. The forms used HEGIS definitions (U.S. Office of Education) and categories wherever possible. Data for medical and dental schools and their activities were specifically excluded from the figures.

The data submitted were prepared after two seminars with the financial officers of colleges and universities throughout the state. At these seminars, projections were also asked for and were subsequently submitted by most instituions. However, the Academy staff found that the basic assumptions underlying the projections differed substantially among institutions, and, therefore, the projections were not tabulated. Time did not permit reconsideration or reevaluation of the projections to place them on a more comparable basis.

Data were received from all of the public segments, and from 43 private accredited colleges and universities which enroll 90 percent of the total number of students at accredited institutions in the Commonwealth.

In a few instances, the colleges and universities reporting did not provide complete data and Academy estimates were made where necessary to permit the development of totals for the Commonwealth.

The private colleges and universities were classified into six groups as shown on page 199. These were the groups that McKinsey and Company established in 1970 for the study conducted for the Select Committee for the Study of Financial Problems of Private institutions of Higher Education in the Commonwealth of Massachusetts. The Academy believed that these classifications were useful and adopted them for the tabulations in this report.

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Table A

COMPOSITE INFORMATION ON ALL PUBLIC AND 43 PRIVATE COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	77,060	126,354
From other states	51,937	67,429
From foreign countries	4,424	6,096
Sub-total	133,421	199,879
Part-time	63,248	97,858
Total enrolled (head count)	196,669	297,737
Full-time equivalent enrollment	155,167	236,237
STUDENT COSTS		
Typical cost per year per full-time undergraduate student for tuition, fees, room and board		
Private institutions	$2,520	$3,770
Public institutions	$968	$1,502
FACULTY		
Number of teaching faculty (full-time equivalent)	10,876*	16,055*
Total salary of faculty (In thousands)	$122,511*	$258,238*
Total fringe benefits of faculty (In thousands)	$11,594*	$30,672*

(continued)

(Table A - continued)

COMPOSITE INFORMATION ON ALL PUBLIC AND 43 PRIVATE COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$285,619	$ 615,476
Student aid	29,523	62,895
Research	157,740	226,531
Major public service programs	64,524	79,835
Auxiliary enterprises	78,275	137,307
Total operating revenues	$615,681	$1,122,044
Classified by source		
Tuition and fees	$152,980	$ 297,290
Government (Federal, State and Local)	268,414	480,161
Endowment income	45,278	75,203
Private gifts and grants	35,579	55,906
Auxiliary enterprises	78,275	137,307
Other	35,155	76,176
Total operating revenues	$615,681	$1,122,044
OPERATING EXPENDITURES (In thousands)		
Education and general	$425,495	$ 820,052
Student aid	36,939	80,568
Public service programs	62,171	75,735
Auxiliary enterprises	75,244	136,932
Total operating expenditures	$599,849	$1,113,287
ASSETS (In thousands)		
Endowment		
Book value	$1,119,829	$1,497,783
Market value	$1,565,274	$2,212,605
Plant and equipment		
Book value	$982,944*	$1,873,808*

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

* Partially estimated

Table B

COMPOSITE INFORMATION ON THE PUBLIC COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	33,126	77,763
From other states	2,202	4,366
From foreign countries	408	839
Sub-total	35,736	82,968
Part-time	16,423	48,946
Total enrolled (head count)	52,159	131,914
Full-time equivalent enrollment	41,619	102,628
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$261	$ 382
Room and board	707	1,120
Total	$968	$1,502
FACULTY		
Number of teaching faculty (full-time equivalent)	2,268	5,250
Total salary of faculty (In thousands)	$21,655	$78,125
Total fringe benefits of faculty (In thousands)	$873	$3,694

(continued)

(Table B - continued)

COMPOSITE INFORMATION ON THE PUBLIC COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$52,724	$175,561
Student aid	1,833	9,712
Research	4,154	8,622
Major public service programs	0	4,135
Auxiliary enterprises	10,749	34,109
Total operating revenues	$69,460	$232,138
Classified by source		
Tuition and fees	$ 1,338*	$ 5,125*
Government (Federal, State and Local)	51,576	182,801
Endowment income	51	78
Private gifts and grants	432	1,916
Auxiliary enterprises	10,749	34,109
Other	5,313	8,110
Total operating revenues	$69,460	$232,138
OPERATING EXPENDITURES (In thousands)		
Education and general	$57,490	$173,614
Student aid	1,833	9,291
Public service programs	0	4,135
Auxiliary enterprises	10,750	33,909
Total operating expenditures	$70,072	$220,949
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	N.R.	N.R.
ASSETS (In thousands)		
Endowment		
Book value	$1,052	$1,846
Market value	1,166	$1,995
Plant and equipment		
Book value	$133,902	$597,446
DEBT (In thousands)		
Total outstanding debt	N.R.	N.R.

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

N.R. = Not Reported

* Reported by the University of Massachusetts only.

Table C

COMPOSITE INFORMATION ON 43 PRIVATE COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	43,934	48,591
From other states	49,735	63,063
From foreign countries	4,016	5,257
Sub-total	97,685	116,911
Part-time	46,825	48,912
Total enrolled (head count)	144,510	165,823
Full-time equivalent enrollment	113,548	133,609
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,467	$2,380
Room and board	1,053	1,390
Total	$2,520	$3,770
FACULTY		
Number of teaching faculty (full-time equivalent)	8,608*	10,805*
Total salary of faculty (In thousands)	$100,856*	$180,113*
Total fringe benefits of faculty (In thousands)	$10,721*	$26,978*

(continued)

(Table C - continued)

COMPOSITE INFORMATION ON 43 PRIVATE COLLEGES AND UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$232,895	$439,915
Student aid	27,690	53,183
Research	153,586	217,910
Major public service programs	64,524	75,700
Auxiliary enterprises	67,526	103,199
Total operating revenues	$546,222	$889,906
Classified by source		
Tuition and fees	$151,642	$292,165
Government (Federal, State and Local)	216,838	297,360
Endowment income	45,227	75,126
Private gifts and grants	35,146	53,990
Auxiliary enterprises	67,526	103,199
Other	29,842	68,066
Total operating revenues	$546,222	$889,906
OPERATING EXPENDITURES (In thousands)		
Education and general	$368,006	$646,438
Student aid	35,106	71,276
Public service programs	62,171	71,600
Auxiliary enterprises	64,494	103,023
Total operating expenditures	$529,777	$892,337
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$16,444	-$2,431
ASSETS (In thousands)		
Endowment		
Book value	$1,118,777	$1,495,937
Market value	$1,564,108	$2,210,611
Plant and equipment		
Book value	$849,042*	$1,276,363*
DEBT (In thousands)		
Total outstanding debt	$108,286	$224,215

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

* Partially estimated.

Table D

COMPOSITE INFORMATION ON EIGHT GROUP I COLLEGES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	3,223	2,634
From other states	3,734	3,455
From foreign countries	88	128
Sub-total	7,045	6,217
Part-time	211	408
Total enrolled (head count)	7,256	6,625
Full-time equivalent enrollment	7,122	6,362
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,256	$1,912
Room and board	1,180	1,463
Total	$2,436	$3,375
FACULTY		
Number of teaching faculty (full-time equivalent)	404	397
Total salary of faculty (In thousands)	$3,056	$3,991
Total fringe benefits of faculty (In thousands)	$323	$567

(continued)

(Table D - continued)

COMPOSITE INFORMATION ON EIGHT GROUP I COLLEGES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$ 9,993	$15,683
Student aid	88	960
Research	1,158	967
Major public service programs	0	0
Auxiliary enterprises	3,372	5,770
Total operating revenues	$14,612	$23,380
Classified by source		
Tuition and fees	$ 8,883	$13,799
Government (Federal, State and Local)	1,238	1,431
Endowment income	505	627
Private gifts and grants	77	552
Auxiliary enterprises	3,372	5,770
Other	537	1,201
Total operating revenues	$14,612	$23,380
OPERATING EXPENDITURES (In thousands)		
Education and general	$11,396	$16,605
Student aid	121	803
Public service programs	0	0
Auxiliary enterprises	1,653	4,479
Total operating expenditures	$13,169	$21,888
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$1,442	+$1,493
ASSETS (In thousands)		
Endowment		
Book value	$2,807	$12,274
Market value	$3,810	$15,623
Plant and equipment		
Book value	$26,136	$58,473
DEBT (In thousands)		
Total outstanding debt	$6,126	$17,314

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Table E

COMPOSITE INFORMATION ON FOUR GROUP II COLLEGES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	2,299	2,603
From other states	1,422	1,641
From foreign countries	88	109
Sub-total	3,809	4,353
Part-time	4,697	3,186
Total enrolled (head count)	8,506	7,539
Full-time equivalent enrollment	5,393	5,415
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,114	$2,224
Room and board	1,145	1,343
Total	$2,259	$3,567
FACULTY		
Number of teaching faculty (full-time equivalent)	257	252
Total salary of faculty (In thousands)	$1,771	$3,012
Total fringe benefits of faculty (In thousands)	$144	$401

(continued)

(Table E - continued)

COMPOSITE INFORMATION ON FOUR GROUP II COLLEGES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$6,149	$12,472
Student aid	152	343
Research	0	0
Major public service programs	0	0
Auxiliary enterprises	1,476	2,815
Total operating revenues	$7,777	$15,630
Classified by source		
Tuition and fees	$5,299	$11,047
Government (Federal, State and Local)	20	129
Endowment income	229	497
Private gifts and grants	175	861
Auxiliary enterprises	1,476	2,815
Other	578	281
Total operating revenues	$7,777	$15,630
OPERATING EXPENDITURES (In thousands)		
Education and general	$5,471	$11,596
Student aid	345	1,162
Public service programs	0	0
Auxiliary enterprises	1,120	2,756
Total operating expenditures	$6,936	$15,514
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$841	+$116
ASSETS (In thousands)		
Endowment		
Book value	$9,066	$9,398
Market value	$9,690	$9,386
Plant and equipment		
Book value	$12,817	$33,121
DEBT (In thousands)		
Total outstanding debt	$100	$13,190

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Table F

COMPOSITE INFORMATION ON THIRTEEN GROUP III COLLEGES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	8,703	10,279
From other states	3,461	4,797
From foreign countries	144	251
Sub-total	12,308	15,327
Part-time	5,730	8,203
Total enrolled (head count)	18,038	23,530
Full-time equivalent enrollment	14,353	18,223
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,038	$1,748
Room and board	958	1,059
Total	$1,996	$2,807
FACULTY		
Number of teaching faculty (full-time equivalent)	756	955
Total salary of faculty (In thousands)	$5,132	$11,017
Total fringe benefits of faculty (In thousands)	$372	$1,111

(continued)

(Table F - continued)

COMPOSITE INFORMATION ON THIRTEEN GROUP III COLLEGES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$17,040	$36,212
Student aid	670	2,647
Research	478	856
Major public service programs	25	0
Auxiliary enterprises	5,776	9,595
Total operating revenues	$23,989	$49,309
Classified by source		
Tuition and fees	$15,571	$33,017
Government (Federal, State and Local)	1,033	3,079
Endowment income	176	487
Private gifts and grants	858	1,702
Auxiliary enterprises	5,776	9,595
Other	575	1,429
Total operating revenues	$23,989	$49,309
OPERATING EXPENDITURES (In thousands)		
Education and general	$15,218	$34,264
Student aid	1,658	5,059
Public service programs	25	0
Auxiliary enterprises	5,177	9,150
Total operating expenditures	$22,077	$48,473
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$1,912	+$836
ASSETS (In thousands)		
Endowment		
Book value	$3,424	$11,591
Market value	$3,838	$12,907
Plant and equipment		
Book value	$66,832	$116,225
DEBT (In thousands)	$24,871	$46,769
Total outstanding debt		

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Table G

COMPOSITE INFORMATION ON TEN GROUP IV COLLEGES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	3,611	5,061
From other states	9,566	11,410
From foreign countries	366	552
Sub-total	13,543	17,023
Part-time	622	1,018
Total enrolled (head count)	14,165	18,041
Full-time equivalent enrollment	13,781	17,437
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,693	$2,763
Room and board	1,036	1,258
Total	$2,729	$4,021
FACULTY		
Number of teaching faculty (full-time equivalent)	1,198	1,452
Total salary of faculty (In thousands)	$13,731	$21,822
Total fringe benefits of faculty (In thousands)	$1,829	$3,708

(continued)

(Table G - Continued)

COMPOSITE INFORMATION ON TEN GROUP IV COLLEGES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$39,343	$ 76,173
Student aid	3,592	6,424
Research	2,100	3,897
Major public service programs	0	0
Auxiliary enterprises	15,552	20,925
Total operating revenues	$60,587	$107,419
Classified by source		
Tuition and fees	$24,018	$ 48,587
Government (Federal, State and Local)	2,547	4,045
Endowment income	10,972	17,663
Private gifts and grants	5,081	10,107
Auxiliary enterprises	15,552	20,925
Other	2,417	6,092
Total operating revenues	$60,587	$107,419
OPERATING EXPENDITURES (In thousands)		
Education and general	$39,343	$ 74,839
Student aid	4,670	10,383
Public service programs	0	0
Auxiliary enterprises	15,206	21,622
Total operating expenditures	$59,220	$106,844
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$1,367	+$575
ASSETS (In thousands)		
Endowment		
Book value	$249,574	$332,469
Market value	$332,923	$494,342
Plant and equipment		
Book value	$189,972	$304,857
DEBT (In thousands)		
Total outstanding debt	$13,155	$30,054

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Table H

COMPOSITE INFORMATION ON SIX GROUP V

UNIVERSITIES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	21,869	24,158
From other states	16,435	26,039
From foreign countries	960	1,450
Sub-total	39,264	51,647
Part-time	29,408	28,851
Total enrolled (head count)	68,672	80,498
Full-time equivalent enrollment	49,131	61,413
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,444	$2,257
Room and board	1,009	1,370
Total	$2,453	$3,627
FACULTY		
Number of teaching faculty (full-time equivalent)	2,582	3,318
Total salary of faculty (In thousands)	$25,537	$54,271
Total fringe benefits of faculty (In thousands)	$2,160	$7,611

(continued)

(Table H - continued)

COMPOSITE INFORMATION ON SIX GROUP V UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$ 73,422	$146,376
Student aid	5,670	13,598
Research	19,687	23,966
Major public service programs	581	0
Auxiliary enterprises	20,484	32,093
Total operating revenues	$119,844	$216,033
Classified by source		
Tuition and fees	$ 62,586	$125,105
Government (Federal, State and Local)	17,388	26,540
Endowment income	2,852	4,857
Private gifts and grants	6,906	12,335
Auxiliary enterprises	20,484	32,093
Other	9,628	15,103
Total operating revenues	$119,844	$216,033
OPERATING EXPENDITURES (In thousands)		
Education and general	$ 80,630	$162,405
Student aid	10,794	24,469
Public service programs	581	0
Auxiliary enterprises	21,162	33,016
Total operating expenditures	$113,166	$219,890
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$6,678	-$3,857
ASSETS (In thousands)		
Endowment		
Book value	$86,792	$127,541
Market value	$101,998	$148,454
Plant and equipment		
Book value	$253,284	$363,687
DEBT (In thousands)		
Total outstanding debt	$46,059	$84,547

Source: Reports by the institutions to the Academy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

Table I

COMPOSITE INFORMATION ON TWO GROUP VI

UNIVERSITIES IN MASSACHUSETTS

(For list of institutions see page 199.)

Item	1965-66	1972-73
ENROLLMENT		
Number of students enrolled in resident and extension programs for degree credit		
Full-time		
From Massachusetts	4,229	3,856
From other states	15,117	15,721
From foreign countries	2,370	2,767
Sub-total	21,716	22,344
Part-time	6,157	7,246
Total enrolled (head count)	27,873	29,590
Full-time equivalent enrollment	23,768	24,759
STUDENT COSTS		
Typical cost per year per full-time undergraduate student		
Tuition and fees	$1,740	$2,966
Room and board	1,130	1,708
Total	$2,870	$4,674
FACULTY		
Number of teaching faculty (full-time equivalent)	3,411*	4,431*
Total salary of faculty (In thousands)	$51,629*	$86,000*
Total fringe benefits of faculty (In thousands)	$5,893*	$13,580*

(continued)

(Table I - continued)

COMPOSITE INFORMATION ON TWO GROUP VI

UNIVERSITIES IN MASSACHUSETTS

Item	1965-66	1972-73
OPERATING REVENUES (In thousands)		
Classified by purpose		
Education and general	$ 86,948	$152,999
Student aid	17,517	29,211
Research	130,163	188,224
Major public service programs	63,918	75,700
Auxiliary enterprises	20,866	32,000
Total operating revenues	$319,412	$478,134
Classified by source		
Tuition and fees	$ 35,286	$ 60,610
Government (Federal, State and Local)	194,611	262,136
Endowment income	30,493	50,995
Private gifts and grants	22,050	28,432
Auxiliary enterprises	20,866	32,000
Other	16,106	43,961
Total operating revenues	$319,412	$478,134
OPERATING EXPENDITURES (In thousands)		
Education and general	$215,948	$346,728
Student aid	17,518	29,400
Public service programs	61,565	71,600
Auxiliary enterprises	20,177	32,000
Total operating expenditures	$315,208	$479,728
OPERATING SURPLUS OR DEFICIT (In thousands)		
Excess of revenues (+) or expenditures (-)	+$4,204	-$1,594
ASSETS (In thousands)		
Endowment		
Book value	$ 767,114	$1,002,664
Market value	$1,111,848	$1,529,899
Plant and equipment		
Book value	$300,000*	$400,000*
DEBT (In thousands)		
Total outstanding debt	$17,975	$32,340

Source: Reports by the institutions to the Aeademy for Educational Development, February 1973.

Note: Because of rounding, figures recorded as totals may not equal the sum of components.

* Partially estimated

Grouping of the Private Colleges and Universities in Massachusetts

Reporting Data to the Academy, February 1973

GROUP I (Two-Year Institutions):

Dean Junior College
Endicott Junior College
Grahm Junior College
Lasell Junior College
Leicester Junior College
Mount Ida Junior College
Pine Manor Junior College
Wentworth Institute

GROUP II (Specialized Colleges):

Babson College
Bentley College
New England Conservatory of Music
Nichols College

GROUP III (Nonspecialized Colleges - Lower Expenditures per Student):

American International College
Anna Maria College
College of Our Lady of the Elms
Curry College
Emmanuel College
Gordon College
Lesley College
Merrimack College
Regis College
Stonehill College
Suffolk University
Western New England College
Wheelock College

GROUP IV (Nonspecialized Colleges - Higher Expenditures per Student):

Amherst College
Assumption College
College of the Holy Cross
Hampshire College
Mount Holyoke College
Smith College
Wellesley College
Wheaton College
Williams College
Worcester Polytechnic Institute

GROUP V (Universities Except Harvard University and Massachusetts Institute of Technology):

Boston College
Boston University
Brandeis University
Clark University
Northeastern University
Tufts University

GROUP VI (Harvard University and Massachusetts Institute of Technology):

Harvard University
Massachusetts Institute of Technology

Note: These groupings of higher education institutions are the same as those used in 1970 by McKinsey & Co., Inc. for a study conducted by that firm for the Select Committee for the Study of Financial Problems of Private Institutions of Higher Education in the Commonwealth of Massachusetts.

Appendix B

SOCIAL, ECONOMIC, AND EDUCATIONAL ASSUMPTIONS

The assumptions on the social, economic, and educational trends over the next ten years in the world, the nation, and in Massachusetts which are expected to influence higher education in the Commonwealth are set forth below.

The data for these assumptions were assembled from recent government reports and policy statements and from the works of leading educators and economists, and then analyzed by the Academy staff.

The objective of the analysis was to develop a set of assumptions that would be considered acceptable in the spring of 1973 to a "reasonable" man and that would be relevant to the study of higher education in Massachusetts.

A. Assumptions on Worldwide Trends and Conditions

1. The world will remain at peace; neither a major war nor widespread disarmament will occur.

2. The total population in leading industrialized countries will continue to grow but at rates slower than in recent years.

3. The economies of the leading industrialized countries will continue to prosper, but their economic growth rates may be somewhat slower than during the past two decades.

4. Prices will continue to rise in leading industrialized countries; but, in general, individual governments and their monetary agencies will be able to control inflationary tendencies.

5. Service industries, including education, in industrialized countries will grow faster than manufacturing industries.

6. Technological change will continue on a worldwide basis and will require skilled and adaptable professional and technical workers.

7. The number of young people going on to post-secondary education in industrialized countries will continue to grow.

8. "Nontraditional" modes of education will grow throughout the world with greater emphasis given to "open universities" and the use of the new technologies. This growth will be spurred on by advances in learning theory, by students with new demands on the educational system, and by the prohibitive cost of building enough traditional schools, colleges, or universities to accommodate future enrollments.

B. Assumptions on Social and Economic Trends and Conditions in the United States

1. The number of people in the United States will continue to grow but at a slower rate than in previous years, with fertility rates remaining low. The total population will be no larger than 224 million persons in 1980 compared with 211 million in 1973, an increase of 6.5 percent compared with a 7.1 percent increase in the prior seven years.

2. Some 29 million persons will be in the main college-going age group (18- to 24-years old) in 1980, compared with 27 million in that age group in 1973, an increase of 8.9 percent.

3. The U.S. economy will continue to prosper and the gross national product will rise along the lines of the recent past. Increases in productivity will continue.

4. Inflation will continue, but at a rate of no more than four percent a year over prices at spring 1973 levels. Government activities will restrain the upward course of inflation but will not prevent it.

5. The number of people employed will continue to increase, but the growth in employment will be mainly in the category of personal services (in contrast to the production of manufactured goods and commodities). The trend for the United States to become a service industry economy will continue.

6. Government expenditures -- federal and state -- will grow faster than national production and income. The greatest growth in budgets will be in health, welfare, sanitation, and transportation. Education will not be among the top three or four priorities in government budget growth because of the increasingly competitive demands by other government services, and the decline in the proportion of children and youth in the population (those under 25

years, for example, will comprise 42 percent of the population in 1980 compared with 46 percent in 1970).

7. State and local governments will emerge as more powerful centers of public policy and fiscal control than they are now, partly due to the development of federal revenue sharing.

8. By 1980 the U.S. society will look much as it does today. In 1972, after a study of the prospects for the decade ahead, the President of the Hudson Institute, a New York research organization, said at a conference sponsored by the American Council on Education that "no new solutions to critical problems will be discovered. Somehow," he added, "we as a nation will muddle through."

C. Assumptions on Social and Economic Trends and Conditions in Massachusetts

1. The state will continue to grow, but less rapidly than the rest of the country. By 1980, the state's population will be 6.0 million persons, compared with 5.7 million in 1970, an increase of 6.0 percent. With the number of births continuing at low levels, compared with the past, this may well foretell future declines in the aggregate demand for teachers and educational facilities.

2. Until 1980, the prospects are that the economy of the Commonwealth will grow at a rate no greater than, or even slightly less than, the rate of growth for the U.S. economy as a whole. From 1960 to 1970 the Massachusetts economy, as measured by the gross state product, grew slightly less rapidly than that of the United States, as measured by the gross national product. Unemployment in Massachusetts in 1972 was 7.4 percent compared to 5.6 percent for the United States as a whole.

3. A better rate of economic growth in Massachusetts will be difficult to achieve during the years to 1980 because of:

   - the lack of indigenous sources of commercial or industrial fuel;
   - the high cost of electric power;
   - the lack of most raw materials (except pulpwood, limestone, granite, and slate);

- the distance from growing population centers in the rest of the United States;
- a difficult winter climate;
- a higher cost of living than in most other parts of the country; and
- the high cost of construction.

4. The expansion of economic growth in Massachusetts to 1980 will continue to be assisted by:
   - the existence of trained manpower in the state;
   - the existence of prestigious educational institutions as both producers and attractors of highly trained professional and technical people and their families;
   - the great concentration in the state of such industries as electronic components and accessories; hospitals; finance, insurance, and real estate concerns; business and professional services; and research and development organizations (although some of these industries are greatly influenced by shifting trends and federal policy, their prospects for long-term growth are good); and
   - Massachusetts' national reputation as a state with far more than its share of life's "amenities": lively urban centers, abundant cultural and educational opportunities, summer and winter recreation facilities, and a strong historical presence.

5. The greatest area of growth in the Massachusetts economy will continue to be in the non-manufacturing sector, mirroring the pattern of the United States and most other industrialized nations of the world. Employment in commodity-producing industries, which constituted 28.6 percent of Massachusetts' labor force in 1968, will decline to 24.9 percent of the total by 1980 -- while employment in the service industries will advance from 71.4 percent of all employment in 1968 to 75.1 percent by 1980.

6. The percentage of total personal income going toward state and local tax revenue will be higher than the 13 percent reported in 1971. A greater percentage of

taxes will come from statewide levies and a smaller portion from the local property tax.

> In 1971 a larger percentage of taxes in Massachusetts, 52 percent, came from the property tax than in the United States as a whole, where it was 40 percent. Massachusetts spent more money per capita on public welfare and on health and hospitals than did the United States as a whole, and less on education and highways. By 1980 these differences will tend to be smaller.

D. Assumptions on Trends and Conditions in U.S. Higher Education

1. Overall, education will become more of a lifelong activity and the United States more of a "learning society."

2. Nevertheless, higher education can be expected to slip from its "most favored" status among domestic priorities because of:

   - a relatively slow increase in the number of persons in the traditional 18- to 24-year old college-age group;
   - the increased competition for funds, public and private, by other pressing national concerns; and
   - a decline, especially among white middle class students, in the social value of a college degree, due in part to changing life styles and in part to the growing recognition that a college education does not by itself increase lifetime earnings.

3. The total number of persons enrolled in higher education* will continue upward until about 1980, reaching a level of probably 12 million persons, compared with about 9 million in the fall of 1972 (an increase of 33 percent). Thereafter, higher education enrollment can be expected to level off or dip slightly for a number of years until 1990.

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* As defined by the Office of Education at the present time; total number includes all full-time and part-time students as well as persons enrolled in adult education programs for credit at non-profit colleges and universities, but does not include enrollments at proprietary institutions.

4. The increase in total enrollment from 1973 to 1980 (including full-time and part-time students) will be about three times as great as the increase in the number of persons in the college-age brackets. Factors expected to expand enrollment faster than population growth during the period include:

   - an increasing number of disadvantaged students, particularly urban blacks and Spanish-speaking Americans, who will be seeking higher education;
   - an increasing number of married women seeking to resume their education after raising families;
   - an increasing number of persons employed full-time who will seek some kind of part-time higher education;
   - an increasing number of technical and vocational programs likely to be provided at the junior college level;
   - an increasing tendency to require more and more college work for many health professions; and
   - a greater trend toward automation and mechanization, and also higher minimum wages. Together these factors will continue to reduce the number of jobs available to untrained people and to encourage many young people to prolong their stay in college because of the lack of a better alternative.

5. The present enrollment distribution among institutions will shift substantially. Enrollment will grow in the two-year public community colleges and the four-year public colleges and universities* in or near large cities. A decline or leveling off in the enrollment in the public colleges and universities in rural areas and small towns is likely.

6. Total enrollment at private colleges and universities will decline because:

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* The term "four-year colleges and universities" is used to include all institutions providing bachelors', masters' and doctoral degrees.

- Some large private institutions will become publicly controlled. (In the 1960s the Universities of Buffalo, Houston, Kansas City, and Pittsburgh and Temple University ran out of funds and had to be taken over by their respective states.)

- A number of small institutions which are not large enough or situated in appropriate geographic locations for state takeover will close their doors. (At least fifty institutions listed a decade ago in the U.S. Office of Education directory as private institutions of higher education have since closed.)

7. State programs for the public support of private colleges and universities will continue to grow in type, number, and the amount involved, accenting the trend that has been developing for many years.

8. Some private institutions, such as those listed below, will continue to expand enrollment (or hold their own) during the 1970s:

   - prestige colleges and universities (such as those in the Ivy League);

   - special purpose institutions (such as the New School for Social Research in New York City, the College of Insurance in New York City, or those with extensive programs of graduate instruction);

   - institutions with special programs (such as those emphasizing work-study or adult education);

   - institutions which are extraordinarily aggressive in their campaigns to recruit students; and

   - institutions located in what the young people call "in" cities (such as Boston).

   These kinds of institutions represent only a fraction of the total private higher education enrollment. Their success is unlikely to offset the overall nationwide decline in the enrollment in private higher education.

9. Higher education expenditures, public and private, can be expected to increase faster than enrollment because:

   - Higher education is a labor-intensive industry whose productivity (however that may be defined)

is expected to change slowly, if at all, during the next few years. A similar situation exists in the health field, in the arts, and in government operations.

- The internal organization of higher education institutions frequently makes it difficult to adopt possible cost economies.

10. In order to reduce out-of-pocket budget costs many public institutions and government officials can be expected to explore the possibilities of:

    - enrolling a larger proportion of the students in low-cost community colleges;
    - establishing programs of off-campus study in "open universities" which will need only a fraction of the capital construction (or the renting of new space) required by traditional programs;
    - establishing three-year degree programs which will require a smaller number of classroom contact hours for a degree and a smaller volume of new capital expenditures;
    - awarding credit by examination and providing advanced standing for work already accomplished in programs not undertaken in regular college classrooms;
    - contracting with private institutions to provide educational programs at a lower cost than at state colleges and universities;
    - establishing student loan programs which are large enough to reduce the scholarship aid expenditures by institutions and which are financed from sources outside regular budgets; and
    - increasing student-faculty ratios enough to affect the level of instructional expenditures.

E. Assumptions on Trends and Conditions in Higher Education in Massachusetts

1. Most of the nationwide trends in higher education (as outlined above) will have their counterparts in Massachusetts.

2. The public, the General Court, and the Governor will continue to give priority to the provision of educational opportunity to the young people of Massachusetts, but not always as high a priority as in the past because of competing demands for public funds for welfare, conservation, the control of pollution, urban mass transit, etc.

3. Massachusetts will continue to have a larger proportion of its students enrolled in private institutions than any other state. The exact enrollment will depend heavily on:

   - the availability, from federal and other sources, of funds for graduate programs and the funding of graduate students;
   - the expansion of educational opportunities in other states which are now great exporters of students to Massachusetts (for example, New Jersey, New York, etc.); and
   - the attitude of the public in Massachusetts toward state assistance to students enrolled in private colleges and universities and toward providing direct state aid to private colleges and universities.

4. Massachusetts will continue to have a nationwide clientele at many of its colleges and universities because of the national and international reputations of its leading private institutions.

5. Budget pressures at both public and private institutions will result in efforts everywhere to allocate resources more rationally and to consolidate educational programs and activities. (This can be expected to be true at such well-financed universities as Harvard and the Massachusetts Institute of Technology, as well as at other institutions, because changes in the level and direction of federal funding of research and training affect the operation of all universities in the country.)

Appendix C

SOURCES OF DATA

In the course of the study the Academy analyzed over 500 documents, including reports of the U.S. Government, Massachusetts state agencies and institutions, national commissions and associations, and Massachusetts organizations concerned with or related to higher education in Massachusetts, as well as other relevant books, reports, documents, and periodicals.

The relevant data extracted from those documents are reported in Chapter V and Appendix A. This appendix summarizes the specific sources of the data, as follows:

Data in Chapter V, "Facts and Figures"

The Academy used 1965 as the base year because of the passage of the Willis-Harrington Act in that year. When data were not available, data for other years were used, and sometimes a longer historical series was necessary in order to show trends.

In some cases the Academy made estimates on the basis of incomplete data.

The following definitions were used:

Academic year:
9-month period from September to June

Fiscal year:
12-month period from July 1 to June 30

Four-year institutions:
Institutions offering at least a bachelor's degree

Private institutions:
All private, non-profit institutions offering a degree recognized by the state

Public institutions:
The five "segments" (University of Massachusetts, the state colleges, the community colleges, Lowell Technological Institute, and Southeastern Massachusetts University); the municipal junior colleges in Quincy

and Newton; and Blue Hills Regional Technical Institute (a vocational high school offering an associate's degree).

Where state appropriations are shown, only the five segments are listed.

Sources for data for Sections A, B, C, D, and E of Chapter V are as follows:

Section A. "What is the financial situation of the Commonwealth and how does higher education fit into the picture?"

Sources of data:

Appropriations of State Tax Funds for Operating Expenses of Higher Education, 1972-73, M. M. Chambers, National Association of State Universities and Land Grant Colleges, Normal, Illinois, 1972.

Current Population Reports, Population Estimates and Projections, Projections of the Population of the United States, by Age and Sex, 1972 to 2020, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., December 1972.

Executive Budget Recommendations of His Excellency, Francis W. Sargent, Governor, to The General Court of the Commonwealth of Massachusetts, Fiscal Year 1973 and Fiscal Year 1974, Boston (The Governor's Proposed Budget - House #1).

Governmental Finances, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., various years.

New England Economic Indicators, Federal Reserve Bank of Boston, March 1973.

State Budget Trends, 1965-73, Massachusetts Taxpayers Foundation, Boston, 1973.

U.S. Census of Population, 1960 and 1970, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

Commonwealth of Massachusetts Financial Reports for various years.

Unpublished projections of the Massachusetts Office of Planning and Program Coordination.

Unpublished data provided by the Massachusetts Taxpayers Foundation, Boston, Massachusetts.

Reports of the University of Massachusetts Building Authority and the Massachusetts Health and Education Facilities Authority.

Section B. "What is the financial situation of higher education institutions, both public and private, in the Commonwealth?"

Sources of data for public institutions:

The Chronicle of Higher Education, Washington, D.C.

Financing Post-secondary Education in California, Academy for Educational Development, Palo Alto, California, 1973.

New England Economic Indicators, Federal Reserve Bank of Boston, March 1973.

The Governor's proposed budgets for fiscal years 1973 and 1974 (House #1).

The Academy's special survey of public higher education, based on data supplied by the higher education segments.

Unpublished data from the public higher education segments.

Unpublished data from the Association of Independent Colleges and Universities of Massachusetts.

Sources of data for private institutions:

Financial Problems of Massachusetts Private Higher Education, Report of the Select Committee for the Study of Financial Problems of Private Institutions of Higher Education in the Commonwealth of Massachusetts, Boston, 1970.

New England Economic Indicators, Federal Reserve Bank of Boston, March 1973.

The Academy's special survey of private higher education, based on data supplied by 43 institutions enrolling 90 percent of students in Massachusetts private institutions.

Pre-publication release of the National Center for Educational Statistics.

Section C. "What is the enrollment situation in higher education in the Commonwealth?"

Sources of data:

Annual Report of Vital Statistics, Commonwealth of Massachusetts, Department of Public Health, Boston, no date.

Digest of Educational Statistics, 1970 and 1971, U.S. Office of Education, Washington, D.C., 1971 and 1972.

U.S. Census of Population, 1970, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

Publications of The Higher Education General Information Survey (HEGIS), U.S. Office of Education, Department of Health, Education, and Welfare, Washington, D.C.

Pre-publication release of the National Center for Educational Statistics, U.S. Office of Education, Washington, D.C.

Reports on enrollment by the New England Board of Higher Education, Wellesley, Massachusetts.

Unpublished data from the Massachusetts Department of Public Health, Boston, Massachusetts.

Unpublished data from the U.S. Commission on Civil Rights, Washington, D.C.

Section D. "What is the student aid situation in higher education in the Commonwealth?"

Sources of data:

"4th Annual Survey, 1972-73 Undergraduate Comprehensive State Scholarship/Grant Programs," National Association of State Scholarship Programs, Deerfield, Illinois, 1972.

New Horizons, Student Financial Aid in the Commonwealth of Massachusetts, A Report to the Massachusetts Board of Higher Education, Boston, 1967.

The Governor's proposed budget for fiscal year 1973 (House #1).

Annual reports and unpublished data on scholarship programs from the Massachusetts Board of Higher Education, Boston, Massachusetts.

Reports of the Association of Independent Colleges and Universities of Massachusetts, Boston, Massachusetts.

The Academy's special survey of Massachusetts higher education.

Unpublished data from the regional and national offices of the U.S. Department of Health, Education, and Welfare, Boston and Washington.

Unpublished data from the Massachusetts Higher Education Assistance Corporation, Boston, Massachusetts.

Section E. "What is the situation regarding space and space utilization?"

Sources of data:

Inventory and Utilization Study for Public Higher Education, Fall 1969, the California Coordinating Council for Higher Education, 1971.

Unpublished data provided by the public higher education segments.

Unpublished data from the Facilities Inventory Project of the Massachusetts Higher Education Facilities Commission, Boston, Massachusetts.

Data in Appendix B: "Social, Economic, and Educational Assumptions"

The Academy used 1980 as a target year for projections of data. In some cases, later years were used to show important longer-term changes.

Sources of data:

Current Population Reports, Population Estimates and Projections, Projections of the Population of the United States, by Age and Sex: 1972 to 2020, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., December 1972.

A Fact Book on Higher Education, Second Issue/1972, Population, Business Activity, Employment, The American Council on Education, Washington, D.C., 1972.

Governmental Finances, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., various years.

"Higher Education and Economic Development in New England," speech by Robert Eisenmenger, Federal Reserve Bank of Boston, 1969.

Massachusetts: A Quality of Life, Arthur D. Little, Inc., Cambridge, Massachusetts, no date.

Massachusetts School Enrollment Projections, 1973-1980, the Massachusetts Department of Education, Boston, 1973.

New England Economic Indicators, The Federal Reserve Bank of Boston, March 1973.

"Prospects for Mankind and/or a Year 2000 Ideology," The Hudson Institute, Croton-on-Hudson, New York, 1972.

State Budget Trends, 1965-73, The Massachusetts Taxpayers Foundation, Boston, 1973.

National economic and social projections made available to the Academy.

Carnegie Commission reports.

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