DOCUMENT RESUME

ED 072 721 HE 003 729

TITLE	The Open University. A Preliminary Report.
INSTITUTION	Massachusetts State Board of Higher Education, Boston.
PUB DATE	15 Sep 71
NOTE	63p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Educational Opportunities; *Experimental Colleges; *External Degree Programs; *Higher Education; *Open Education; Statewide Planning; *Universal Education

ABSTRACT

Because of rapidly increasing college enrollments and a matching increase in tuition and other costs to students, this document presents a proposal for an open university to be created in the state of Massachusetts as an alternative to traditional higher education in the state. This study examines 13 principal components of this new university: (1) an appropriate method for determining goals of the university; (2) the target population and mechanisms for enrollment of students in the university; (3) the various themes that provide an adequate basis for educational development of students in the university; (4) the most propitious topics or courses with which to begin, and the availability of existing courses or materials; (5) the guidelines for establishing when a student has completed a course with sufficient proficiency for credit, or has earned a degree; (6) a scheme for effective instruction and guidance of students; (7) the requirements for facilities and geographical distribution of working centers; (8) the most efficient use of educational technology. (9) the guidelines for evaluation and assessment of the university; (10) fluctuation factors, such as enrollment; (11) the costs likely to be incurred in the short-term and the long-term; (12) the organizations that should participate in preparation of initial courses; and (13) the development of a timetable with emphasis on September 1972 as a possible starting date. (Author/HS)

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Introduction

This preliminary Report proposes a new state University for Massachusetts. The Report begins with an explanation of the Commonwealth's need for a new form of higher education, and describes the scope of the study requested by the state Board of Higher Education. It then summarizes the salient characteristics of the proposed University. Finally, the Report discusses in greater detail several of the University's principal components.

We are indebted to similar programs which are either planned or are operational in England (the Open University), New York (Empire State College, the Regents' Degree program, Liberal Studies at Brockport College), Massachusetts (College III of UMass., Boston), Antioch (the University Without Walls consortium), Oklahoma (Liberal Arts at the University of Oklahoma), and elsewhere. We have learned much from these programs and, in many instances, have adapted their ideas for the University we propose for Massachusetts.

Together with the separate organizational and administrative recommendations drafted by Dr. James E. Allen, Jr.. the ideas in this preliminary Report constitute the broad framework for an alternate form of higher education in the Commonwealth. We realize that any initial exploration -- of a land mass or an idea -- is undoubtedly incomplete. We have tried to be as precise and thorough as possible. At the same time, we recognize that our recommendations will require further thought and development in order to be implemented effectively.

The Need for a New Form of Higher Education

Long a leader in both secondary and higher education, Massachusetts has now reached a critical juncture. The Commonwealth is confronted by many of the crises afflicting her sister states, and must find effective remedies in order to strengthen and preserve excellence in education.

At the college and university level, projected enrollment looms as an inescapable problem. Dr. Edward C. Moore, Chancellor of the Board of Higher Education, predicts that the total demand in the state for a college education will double by 1980 -- from 260,000 students to 524,000.[1] This increase in students will affect public institutions most severely. Today, the 29 public colleges and universities in Massachusetts provide higher education for 75,000 students. By 1980, these institutions expect over 215,000 students, triple their current enrollment.

The state has responded to this increasing enrollment in impressive fashion. New campuses planned for Boston and Worcester testify to the Commonwealth's foresight and commitment to an expanded system of higher education. But these facilities, and whatever other campuses the state can afford to build, will not alleviate all the problems.

One additional problem is who shall attend college in 1980. A recent report noted that "two-thirds of (UMass) Amherst students come from families earning more than $10,000, almost one-third from families earning more than $15,000. Five percent of (UMass) Boston students are black, fewer at Amherst."[2] Another report surveyed higher education in the Boston metropolitan area in 1969, and found "at least 4,000" high school seniors who would like

to attend college but who could not. Of this number, one-fourth had scored high enough on the SAT to gain admission to a variety of colleges but could not finance their tuition. By 1980, with tuition and other expenses approaching $8,000 at many private colleges and close to $5,000 at their public counterparts, there will be even greater numbers of students unable to pay the higher costs of higher education.[3] The report commented that "it will, of course, be the children, both black and white, from low income homes who will suffer most from this situation."[4]

It may also be their parents. In an age of rapid technological change, many adults find their former skills and training have become obsolete. Yet most adults are unable, at an advanced age, to acquire the training necessary for a new career. While this has often been true for semi-skilled workers, it is now increasingly true for adults with skills in such fields as engineering. Thus, in addition to providing higher education for a substantially greater number of students, the Commonwealth must also provide access to higher education to students from a broader socio-economic and age range.

A third problem is the nature of the college education which students will receive in 1980. The "Newman Report," product of a recent Federal task force on higher education, documented widespread dissatisfaction with the current style and uniformity of college programs. The report noted that nearly one-half of America's youth -- one million young people -- enter college each year, but that two-thirds of them leave at some point before graduating.[5] The Carnegie Commission report "Less Time, More Options" advocated a much greater variety of college options and programs, both to better serve an increasingly sophisticated, diverse group of students and to promote exploration in new, interdisciplinary areas of intellectual

inquiry.[6] While many colleges and universities have tried to establish relevant programs in such areas as black studies or urban studies, these attempts have been piecemeal. The traditional model of the college, with few exceptions, predominates.

Mindful of these three problems -- the size and enormous cost of projected enrollment in the state's colleges and universities by 1980, the need to offer higher education to students from a broader socio-economic and age range, and the importance of creating more diverse, flexible forms of higher education -- the Massachusetts Board of Higher Education commissioned this preliminary study of a new degree program for the Commonwealth.

Scope of the Study

The Study's specific charge was to examine the feasibility of an external degree program. However, the idea of an external degree has many interpretations; ranging from college proficiency examinations (which, when passed, earn a degree) to new, non-residential college programs. To guide this study, Chancellor Moore suggested that an external degree program be defined as one in which "over twenty-five percent of the work for the degree is not given in courses taught by an institution's own faculty."[7] At the same time, he urged the study to interpret its mandate broadly, to create a unique opportunity for innovation in higher education. Moore observed that:

> Academicians are fond of rationalizing their inability to restructure education by citing the restrictions placed upon them by existing academic departments, by disciplinary fragmentation, and by the heavy hand of academic senates. Here is an opportunity to develop a program that need be bound by none of these traditional restrictions on innovation. This program can be conceived and promoted as completely ab novo as any effort in higher education has ever been. I do not think we should even concern ourselves with whether the program could be accredited. Let us now develop as nearly perfect an academic program as we can conceive in the 1970's and then defend it before whatever courts there are.[8]

We have interpreted our mandate broadly. We strongly believe that the Commonwealth needs a new form of higher education, one which is unencumbered by loyalties to existing academic structures and which is recognized as an equal partner with other colleges and universities in the state. We therefore propose a new form of state University which, among its several innovative characteristics, will contain an external degree program.

With this belief in mind, our study has examined thirteen principal components of this new University:

1. An appropriate method for determining goals of the University.

2. The target population and mechanisms for enrollment of students in the University.

3. The various themes which provide an adequate basis for educational development of students in the University.

4. The most propitious topics or courses with which to begin, and the availability of existing courses or materials.

5. The guidelines for establishing when a student has completed a course with sufficient proficiency for credit, or has earned a degree.

6. A scheme for effective instruction and guidance of students.

7. The requirements for facilities and geographical distribution of working centers.

8. The most efficient use of educational technology.

9. The guidelines for evaluation and assessment of the University.

10. Fluctuation factors, such as enrollment.

11. The costs likely to be incurred in the short-term and the long-term.

12. The organizations, or groups of organizations, that should participate in preparation of initial courses.

13. The development of a timetable, with emphasis on September 1972 as a possible starting date.

In the remainder of this Report, we describe our ideas and preliminary conclusions under separate headings for each component. To place each component in its larger context, however, we first describe the major characteristics of the proposed University.

An Overview of the University

The proposed University should be a non-residential institution. When fully operational, it should offer undergraduate and graduate programs in a variety of fields. It should award degrees. In these respects, the University will resemble many other public and private institutions in the state.

However, this University should have four distinctive characteristics: (1) the design of its learning process for students, (2) its course delivery system, (3) its work experience component, and (4) its lower costs than at other public institutions. Aside from lower costs, none of these characteristics will be particularly new to Massachusetts; each exists, or will exist, in one form or another at many colleges in the state. What is new, we believe, is the University's combination of all these existing elements into a single, coordinated form of higher education.

Because these elements are combined, none can be explained without reference to the others. Thus, in reading the following summary of our recommendations for the University, please bear in mind that each component of the University is explained in greater detail later in this Report.

The University should recruit a diverse student body, ranging upwards in age from mid-teens. Many students might be people seeking their first college experience. Others might either be people whose previous college experience was interrupted for some reason, or people who seek additional education or degrees.

The University should focus more on what each student knows and can do when he leaves than on his previous training or

credentials when he enters. In keeping with this focus, enrollment criteria should be very flexible and each student should plan an individualized program. In this planning, the student would have the assistance of a mentor whose function is to provide advice and guidance to that student throughout his enrollment in the University. The student could enroll either part time or full-time, and could study at his own pace and location (home, library) by means of correspondence courses, TV, radio, tapes, films, packaged kits, and such other technological aids as computer-assisted instruction.

These courses should be designed by a team of people from both the academic and media professions for the University's major fields of inquiry and training. When it attains full operation, the University should offer courses and programs in a wide range of fields or general occupational categories. Many of these fields should be interdisciplinary, and all should be of concern and importance to improving life in our society. In its initial years, the University might focus on programs in the fields of social welfare, pre- and para-medical training, and pre- and para-legal training.

Each student in a course should receive periodic evaluation of his progress from a tutor assigned to review and comment upon his work. Often, the tutor might be a student who has already mastered the course. The tutor should offer academic help, teach seminars, and administer course examinations at a Regional Study Center and, if the student completes the examination satisfactorily, should help him select the next unit or course suitable for his program. Both tutor and mentor may help the student enroll in courses at other colleges and universities as well.

If a student enrolls in the University as a degree candidate, a major portion of his program should include work experience in jobs

related to his career interest. His mentor would have major responsibility for locating appropriate jobs, with the help of a large computer-assisted information system operated and updated by the University's central staff. While on the job, the student should receive instruction and supervision from another, more skilled employee who is affiliated with the University as a member of its adjunct faculty. We envision the University's drawing very heavily on the general resources of institutions in the Commonwealth to educate students.

During his enrollment in the University, each student should assemble a portfolio of his experiences and accomplishments in courses, work, and other experiences. If a degree candidate, the student should include in his portfolio evidence of having completed an independent project or having acquired some demonstrable skill. To receive the degree, the student and his mentor would present his portfolio to a Degree Committee comprised of people who have not been responsible for instructing or helping that student in courses or work experiences. Many members of this committee would come from other educational institutions, businesses, hospitals, and so forth. Presumably, the University must assemble several "standing" Degree Committees for each field based upon the projections of student requests for the degree.

The Degree Committee should determine whether the student has attained sufficient proficiency in his field for the degree. The committee would consider the results of the student's performance on his field examinations, the accomplishments assembled in his portfolio, and the testimony of the student and his mentor. A major goal of the University should be to help students with previously acquired education or training receive the University degree by enrolling for, and successfully completing, the evaluation procedure alone. This procedure is usually described as an "external degree." Thus, the

time required to earn the degree will vary for each student. Some might require a month, others several years.

To implement the recommendations in this preliminary Report, we suggest a "preparation year" (1971-1972) followed by a "pilot program" (1972-1976). During the preparation year, the first priority should be to develop tests and other procedures so that students may receive the external degree starting in late 1972 or early 1973. The second priority should be to develop course materials for students who wish to study at the University starting in 1973 or 1974.

This broad overview is not complete without explanation of five additional assumptions inherent in the University. First, the design of the University assumes that a major challenge confronting higher education is to broaden access to college training and degrees. This challenge will grow in future years as specialized knowledge becomes increasingly important for effective work. Thus, the University should provide training and degrees to people of all ages, backgrounds, and experience. Its concern should be with what the student knows and can do, rather than with where, when, or how he acquired this knowledge.

Second, the University's design emphasizes the learning process rather than teaching and basic research. Students can work by themselves, at their own pace. They can be tested whenever they feel prepared. They can interrupt their program for personal or vocational reasons, or even study in a part-time, leisurely fashion. And they can have "real world" jobs which constitute an important segment of their University education. In this respect, the University seeks not only to redefine a college's role in learning, but also the role of the larger society.

Third, the University's design attempts to make higher education more productive. To accomplish this, the University will utilize an integrated, multi-media approach whose costs per student should be considerably less than those for a new, residential university.

Fourth, the University does not seek to reform or eliminate the existing system of higher education. Its purpose is to add a new, desirable component, to create an alternate form of education for those students who currently have little choice. It must recognize and welcome similar programs currently being planned by many of the state's colleges and universities.

Finally, the University's long-term form and objectives will be very different from those in its first few years. Put another way, this University will expand and change tremendously over a period of many years. The planning and control of this growth constitute a major challenge. This challenge can be met only if the early problems of the University are handled with patience and understanding.

Before continuing with a more detailed discussion of several of the University's components, we want to make one of our beliefs absolutely clear. Many of our ideas and recommendations may seem impractical or impossible. But we are firmly convinced that each is possible. Furthermore, unless the Commonwealth can make each recommendation both possible and effective, then we question whether the University should even be created. It might well be worse to have a second-rate "degree mill" than no University at all.

At this point the Report now examines several components of the proposed University in greater detail.

Goals of the University

The University's specific goals should be determined by the University's faculty, staff, and students, with ultimate responsibility for accreditation remaining with the Massachusetts Board of Higher Education. We hope these goals will reflect several assumptions about the University which are apparent in this preliminary Report:

1. The University should express the belief that "...education consists of three important facets: systematic instruction, action, and reflection. The facets are not listed in order of importance, nor chronologically. All three should occur concurrently, at all stages of life."[9] Students will experience each facet, through formal courses, independent work, job experiences, and guided self-examination.

2. The University should restructure the traditional academic disciplines, organizing many of its programs around broad problem areas of concern to man in his present and future societies. Each problem area, or field, could draw upon several disciplines in an effort to provide students with a holistic examination of the field. Undoubtedly, some fields will remain largely within one discipline but we assume the majority should not.

3. The University should integrate a variety of media and other technological aids to enable students to study at their own pace and in their own location. Preparation of these multi-media programs will require integrative work by teams of academicians, teachers, technologists, media specialists, writers, and others.

4. The University must strive to become a route of preference for some students, rather than a route of last resort for all students. To do so, it must adhere to the highest possible academic standards while developing more relevant and flexible styles of learning.

5. The University should recruit a heterogeneous student population by means of a flexible enrollment policy. Students may enroll full-time or part-time, or may request evaluation for course credit or the degree on the strength of their existing knowledge.

6. The University must eventually enroll a sufficient number of students to help meet the anticipated demand for higher education in the state. Obviously, however, other institutions in the state are not absolved from their responsibility to meet anticipated demand, particularly since the University's share will be quite small during its initial years.

7. The University should enlist the participation of the society at large in its programs. Practicing workers, professionals, and others will teach students on the job or in Regional Study Centers, serve on degree committees, and help prepare programs.

To launch the University, we suggest a study of at least a year's length which would determine specific goals, program objectives, and program design. We describe this study in two sections of this Report: "Program Preparation" and "September, 1972, Start-Up."

Target Population and Criteria for Enrollment

Once it becomes fully operational, the University should utilize a flexible enrollment policy to obtain a heterogeneous student body. Hopefully, these students will bring to the University -- and to each other -- a broad range of backgrounds, experiences, interests, age, and previous education. Some students may be relatively young and anxious to take advantage of the opportunity to plan their own programs. Others might be young people who simply wish to attend college and who, for some reason, selected the University. Other students might be older, and desirous of further education for career advancement, for completion of earlier college study, or for its own interest. Still others might seek academic credit or degrees for courses offered by their employer or union, for skills learned on the job, or for knowledge previously acquired.

While "heterogeneous student body" is a commendable goal on paper, it is not easy to achieve in practice. Britain's Open University, for example, has discovered that unfortunately the majority of its students are not heterogeneous, and that students from the working class in particular are not well-represented. Apparently, workers did not learn of the Open University or, in several cases, did not feel confident they could enroll and benefit from it. The same danger exists for this Commonwealth's University: although the University may seek a diverse target population, nevertheless it may not either attract or hold students from those age, racial, social, and economic groups which currently are underrepresented in higher education. At this point we cannot offer a sure solution to the problem, except to note that this University ought to be considerably more attractive to potential students from these groups. Its lesser cost, great flexibility, non-residential character, self-paced study system, and recognition of previous

academic or work experience should stimulate requests for enrollment from people who might not apply to other colleges. Needless to say, the University's style, image, and visible convictions will also greatly influence the heterogeneity of its student body. Especially in its initial years, the University should make strenuous efforts to convey to all groups in the Commonwealth its belief in the importance of greater access to higher education.

The prerequisite for enrollment in the University should be "high school graduation or the equivalent," and the University should establish its own criteria for determining equivalency. But certainly the University should recognize that "equivalency" might be reached by many young people before they graduate from high school, and that these people can enroll in the University while still completing their last year or two of high school. "Equivalency" also should apply to people of any age whose high school education was interrupted for some reason but who seem to have other qualities or experiences necessary for successful study in the University.

Although the University should not exclude any group or category of potential students, there may well be self-exclusion by groups of students whose interests will not be served by enrollment in the University. For example, the University may not train specialists for basic research careers in science and medicine because the University's purpose is to serve different objectives. Thus, students with these interests would not enroll in the University for their advanced training, though they might well enroll for some of their preliminary studies.

In order to reach full operational status, the University must begin selectively. Accordingly, enrollment for study at

the University in its first few years could be limited by means of two criteria. First, the University's initial programs -- in the fields of social welfare, pre- and para-medicine, and pre- and para-law -- will not appeal to all prospective students. Second, the University should admit high school students or graduates only if they have both the maturity gained from at least two years of significant experience in the non-school world and some clear intellectual or career interest. We hope this second limitation during its initial years will enable the University to establish its belief in the importance of both academic and work experience.

The enrollment procedure, in keeping with the University's philosophy and style, should be personal and flexible. The University might ask an applicant to have a sponsor, an acquaintance who is reasonably familiar with the student and who can attest to his maturity, interests, and goals. The University's and sponsor's task would be to advise the prospective student as to whether he was sufficiently prepared for successful study and whether the University could adequately meet his interests. The applicant should be invited to visit the University's Regional Study Centers and to talk with staff and students. Both applicant and sponsor would complete a brief, personal history enrollment form, and could also submit whatever other documents they wish. But, given the University's goal of greatly expanding access to higher education, no test scores or other such credentials should be required. Of course, the applicant would have to specify whether he wishes to enroll part-time, full-time, or simply for the evaluation procedure to obtain the external degree.

The University might also consider linking enrollment for study at the University with application for work experience. Undoubtedly, some students will already hold jobs which can serve as the work component of their program. Others may

wish to defer their employment for a few months. But some students will want their work experience to be concurrent with their academic study, and will not have suitable jobs in hand. The University might develop procedures for helping these students enroll in the University and the participating work institution simultaneously.

A student should be able to enroll in the University on a full-time or part-time basis. He, or she, might enroll for study in a course or program of study, or might seek full credit for the course by enrolling only for its examination or other form of evaluation. The University should anticipate a sizeable number of students who enroll to obtain course credit, or a degree, for knowledge or skills already mastered. These students would have to enroll only for a short period of time, sufficient to take the examinations, compile a portfolio of accomplishments, and appear before the Degree Committee. This procedure is described more fully in the section of this Report: "Credit and Degrees."

Themes to Provide the Basis for Education and Development

At full operation, the University should provide students with education and training in a wide range of fields. Each field, or theme, should represent a general occupational category and should include a mix between learning in an academic setting (through "courses") and in an operational setting (through "work experience"). Both courses and work experience must encompass a spectrum of difficulty, thus providing students with a range of levels in which to become engaged in the theme.

The University should enlist numerous other institutions and people to support establishment of both academic courses and work experiences. For example, state and municipal leaders could be called upon to help arrange meaningful work opportunities in a variety of organizations. Professional associations and other institutions could be asked to establish "liaison committees" responsible for creation of work experience opportunities in their respective fields. Once work experiences are located, experienced practitioners in that setting should become members of the University's "adjunct faculty," responsible for job supervision and other on-site instruction of students.

In its initial stages of operation, the University must select a limited number of themes. These themes should include fields whose career opportunities in Massachusetts are rapidly expanding and which can provide varied careers at several levels for a heterogeneous group of adults. The themes should also incorporate fields likely to attract adults because they offer adequate salaries, social respectability, the likelihood of expanding importance in our society, and the opportunity to provide useful service.

We suggest three initial themes during the University's pilot program, each with numerous possible career choices:

Social Welfare

Day Care
Welfare Case Work
Labor Relations
Drug Addiction
State and Municipal Services

Pre- and Para-Law

Legal Aid
Police
Municipal and State Legislative Aides
Prisons

Pre- and Para-Medicine and Health

Nursing
Technicians
Physician's Aides
Medical Management

These initial fields are not the only possible ones; however, the University must exercise sound judgment in whatever initial fields it selects. We have omitted education, for example, because career opportunities are no longer expanding, because there are many existing education schools, and because related areas such as teacher certification are beyond the University's control. However, education might be a field for the University at some future date.

Massachusetts currently can provide a strong resource base -- in people and in public and private institutions -- for each of these three initial fields. Some of these people and institutions currently are involved in education or training, but many are not. The University's major challenge will be to make full and effective use of this resource base.

Detailed guidelines and program design for each field would have to be established with the help of leading professionals from the field. We describe this process further in two other sections of this Report: "Program Preparation" and "September, 1972, Start-Up."

Courses With Which to Begin the Pilot Program

In this section, we are not discussing the evaluation, or external degree, component of the University. Rather, we are concerned with the design of the pilot program for those students who wish to study at the University.

We recommend that a student in the University encounter two basic instructional components: courses and work. Each component should, of course, contain several different styles and subcomponents.

Courses should attempt to equip students with the intellectual foundations and skills necessary for work and for educated, productive lives. There is unquestioned need for systematic and planned instruction in many areas, as well as for a variety of learning styles and techniques. Courses should be largely self-paced, designed for the range of student abilities and interests, and conveyed via the most modern technology or media available. Some courses might be completely programmed and packaged. Others might resemble Empire State College's "Conference Course;" that is, an individual tutorial or investigation quite similar to advanced doctoral work. Still other courses might utilize seminars with groups of students and tutors at Regional Study Centers. However, seminars must not become so prevalent as to significantly alter the independent, self-paced character of the University.

In its initial years, the University should offer courses appropriate to the fields of social welfare, pre- and para-law, and pre- and para-medicine. It should also offer some courses in other disciplines, so that students can pursue interests not included in the three career fields. However, at this point we believe that the

University should stress its unique orientation towards career preparation, and not attempt to duplicate the entire liberal arts curriculum of a traditional college. Students who wish to concentrate in one of the liberal arts can attend more traditional colleges; however, the University might consider a form of cross-registration so that its students can take some liberal arts courses at other institutions as well as at the University. Those institutions would receive tuition rebates from the University.

Courses might be of three major types: Core courses, General courses, and Specialized courses. The exact focus of each type of course cannot be determined in this preliminary Report; that task will belong to the program development group and to practitioners from each field. However, we can suggest the following as illustrations:

Core Courses

a. Communication Skills (listening, reading, speaking, filming, viewing, writing, counseling)

b. Manipulative Skills (both quantitative manipulation and management/human relations)

c. Human Condition and the Legal Mind (sociology of contemporary America, social problems)

d. Structure of the Establishment (government and bureaucracy)

e. Cultural Relativity (contemporary anthropology, as well as each student's relationship to American subcultures)

f. Perception, Measurement, Behavior (the senses, nervous system, brain, psychology)

g. Physical Technology (technological literacy)

General Courses

a. (Courses in other disciplines)

b.

c.

Specialized Courses

a. (Knowledge essential for one field, such as Social Welfare)

b.

c.

Again, students may find that other institutions offer similar courses which they wish to enroll for.

Formal course requirements for the degree should be minimized. However, it is possible that a student might be asked to demonstrate a proficiency in his field which could only come from a combination of study and experience in core courses, specialized courses, general courses, and from work in a field setting.

The work component should constitute a major portion of the educational process in the University. This component should be "a context for learning in the midst of action; learning (should occur) not because it is planned but only as an inevitable by-product of genuine participation in problem- and task-oriented activities."[10] Put another way, the student should learn in a less planned or controlled fashion than in a course, from his participation in a work experience and his interaction with people on the job.

In the pilot phase from 1972-1976, a student should be expected to have gained some acquaintance with the world before he enters the University. He should demonstrate the maturity that comes from earning a wage, or from alternative kinds of non-school experience, such as military service, community service activities, or farm work.

Undoubtedly, most students attending the University will have full-time jobs or substantial part-time jobs while they pursue their studies. Initially, these jobs may be in fields not related to

their studies, but the University should endeavor to transfer such students to new jobs in their chosen field.

At a certain point in a person's course of study, roughly half-way to his first degree, the student's interest in his field should be considered no longer tentative. From that "mid-point" onward, we believe the University should insist on his working part-time or full-time on a job in his chosen field. If the University cannot find suitable jobs for its students in the open market, special opportunities (projects) may have to be created. Such projects would require physical space, staff, and budgets. The dangers of imperfect simulation of the working world are very great in such projects, and the energy required to launch them is tremendous. But we think it is better to face these dangers than to abandon the principle that every student in the University should learn from work as well as from study. Presumably, with the active help of civic leaders and liaison committees from professional associations or organizations, and with other incentives provided by the Commonwealth itself, the University will be able to maintain a large enough inventory of available work experiences. Within each field, the available jobs should incorporate a spectrum of difficulty, thereby being suited to a wide range of students.

The University's emphasis on learning from work as well as from study has four major aims. First, we believe that it is sound pedagogy and that it is necessary in many fields to make education more relevant and useful. Second, it should enable disadvantaged students, in particular, to more easily receive course credit for their employment and also to finance a college education. Third, it will give all graduates a degree which is based on solid work experience in a field as well as on academic accomplishments. Fourth, it should broaden society's role in higher education, by enlisting many institutions and organizations in an important, integral

part of the University's programs.

These praiseworthy aims will not necessarily be realized. Whether or not the work component does constitute an important learning experience will depend largely upon the University's mentors and adjunct faculty. These roles are discussed in the section of this Report: "Faculty and Guidance System for Students."

Credit and Degrees

The University should grant credit for both courses and work experiences, and should award two-year, four-year, and graduate degrees. It should do so in a manner which is consistent with its self-paced characteristics and its goal of expanding access to higher education. Thus, in specifying how the University should grant credits and degrees to students, it is important to bear in mind the wide range of potential students.

Hopefully, students will come from virtually all socio-economic and age groups. They will have different amounts of previous education and will enroll for different lengths of time. One student might spend full-time within the University for two years before acquiring sufficient education and training for the degree. Another student might enroll for one month, sufficient time for him to complete one course of particular interest to him. A third might require eight years to complete his program, but would only enroll for a single course at a time. A fourth might enroll only for the field examination and evaluation procedure and, if he passed, would receive the external degree. In short, each student's pace and program should differ, depending upon his interests, abilities, experience, and time.

To receive the undergraduate degree, each student should successfully complete two evaluation procedures. First, the student should attain a satisfactory level of performance on the field examination. These field examinations should be developed by a group which includes both professionals from the non-school world and senior faculty or consultants from other universities. This examination group, whose function is to establish criteria for examination design, should be so prestigious and broadly representative that the field examinations are accepted and respected by other institutions.

It may well be that portions of existing examinations (from the College Proficiency and Regents' Degree in New York or from Britain's Open University) can be adapted. In any case, the examination should evaluate a student's mastery of subject matter essential to his field; in some, multi-disciplinary fields a student might take portions of examinations from several disciplines if no single, appropriate examination were yet available.

The field examination should be based in part upon a "checklist" of prominent concepts in the field. This checklist should be published and distributed to all students, together with appropriate bibliographical references and sample exam questions. Perhaps one-third of the field examination could incorporate these essential concepts from the checklist. A second portion of the field examination might allow students to select from among several problems or questions, thereby allowing for individual interests and specialization. Finally, a third section of the examination should be "open." That is, students could be asked to write their own questions or, in some fashion, to demonstrate what they have learned. In some fields, this portion of the examination might occur on the job as a demonstration of specialized, essential skills.

We envision these field examinations as serving other Massachusetts colleges and universities as well. It certainly seems most logical to have a single series of examinations which each institution can select from, combine, and use as one basis for its evaluation of students' academic knowledge. If this occurs, then this University's responsibility for actually developing the field examinations should be lessened. If it does not, then writing the field examinations should be a major priority during the University's preparation year 1971-1972.

The second portion of the evaluation procedure required for the undergraduate degree should involve presentation of a student's portfolio to his Degree Committee. Each student should assemble a portfolio of materials related to his accomplishments and growth both in the University and in his previous experiences. The portfolio might record these accomplishments by means of a flexible formula which asks degree candidates to have a certain percentage of experience in work settings and in courses. This portfolio should be reviewed periodically with the student's mentor, and would be one basis for continuous evaluation of the student's performance.

The Degree Committee could be assembled from people nominated by the University and the professional world. It could be comprised of students and faculty from other institutions, and professionals or other practitioners from the non-school world. Presumably, this Committee would incorporate people whose interests and experience were largely in the student's field. The Commitee would review the student's portfolio, including the transcripts of courses taken at the University or elsewhere, the reports of his past accomplishments filed by members of the adjunct faculty or by other people, and some project or other demonstration of knowledge or skills which the student had prepared for his Degree Committee. The student should be accompanied by his mentor during this part of the evaluation procedure. The mentor should both help the student prepare his portfolio and also help him defend his preparedness before the Committee.

Thus, the degree should be awarded upon satisfactory completion of field examinations and the portfolio review by the Degree Committee. Some students, with considerable knowledge and experience already, might enroll only for the month or so necessary to pass the examination and present the portfolio. These students

would then receive what, in effect, would be an "external degree." That is, they would not have needed to enroll in the University for study or work experience because of knowledge and experience they had previously acquired. Presumably, the mentor is in the best position to help these students determine whether they are sufficiently prepared to try for the external degree.

Other students will need considerable study, through courses and work experiences. Here again, the mentor should help each student determine what combination of courses and work will both meet his interests and also suffice for the degree. Some students may wish to enroll full-time, others part-time. In each case, credit for a student's achievement in a course or work should be determined in a manner established by the instructor. We recommend that credit be awarded on a pass-fail or similar basis, and that a student be given limitless opportunity to attain credit. We also suggest that tutors become the group responsible for determining whether a student has passed a course. For example, a student could go to a Regional Study Center and request the examination or other evaluation for a course he has completed at home. A tutor, who in many cases should be another student who has already mastered the course, would administer and correct the examination and discuss the results with the student. The tutor would then guide the student either to another course or, if the examination was unsatisfactory, to a review of the course he had just completed. Similarly, students could request diagnostic tests to determine whether they should take a particular course. Again, tutors would administer these tests. By utilizing knowledgeable students as tutors in this fashion, the University can develop student-student learning as well as lessen its salary costs.

This evaluation procedure thus separates instructors from evaluators. In courses and work, the student should be helped

towards mastery of the material by his peers. But when he comes before his Degree Committee, he should meet an independent group whose only concerns are with what the student knows and what he has accomplished. This group's task is to determine whether the student is sufficiently prepared to earn a degree from the University.

Faculty and Guidance System for Students

Given its innovative and flexible nature, the University must establish an accessible mechanism to provide instruction and guidance for students in both their academic and work experiences. Each student will require assistance through the maze of available jobs and courses toward those which meet his interests. False starts are to be expected, and some students may need considerable help. The responsibility of providing effective instruction and guidance will be best fulfilled if "instruction" and "guidance" are divided into four distinct functions.

First, students will seek instruction and advice in their course work. This function should be executed by the University's teaching staff, which could consist of professors and tutors. Both professors and tutors could hold either full-time or part-time appointments, although there should be a significant number of full-time faculty. Professors and some skilled tutors would prepare or deliver course materials, utilizing a variety of media and the help of technology specialists, writers, and so forth. All tutors would administer diagnostic tests to aid students in course selection, and would evaluate and return the student's completed course work. Many tutors should be students who had previously mastered the course, and each tutor who works half-time might help thirty students in a course. There might be very little face-to-face contact between professors, tutors, and students except for those occasions when a student seeks direct help or evaluation in a course from a tutor at a Regional Study Center. We assume that some courses may also require seminars between tutors and groups of students at the Regional Study Centers, but this component must not become so influential as to change the non-residential and self-paced character of the University. Such seminars could, for example, be conducted

utilizing a two-way TV "talk show" format and still permit non-residential, self-paced learning.

A second guidance function will relate to the students' work experiences and over-all growth within and outside the University. Here, each student will have a mentor, or ombudsman, whose responsibility will be to maintain close, personal contact with the student. The mentor should help the student define his objectives and interests, help him locate the academic courses, jobs, or resources necessary to reach those objectives, and help him assess his progress at periodic intervals. The mentor should be a line of communication between the student and his field experience possibilities, and should have close contacts with the central inventory of available jobs as well as some contacts of his own in the non-school world. Each mentor might only take students in the same field, and the mentor himself would be expected to have some working knowledge of that field. Some mentors might well be former full-time workers in the field. As a student progresses through his program, his mentor should help him to define a professional trajectory carefully and to prepare himself sufficiently for the career he has selected. When a student's portfolio was ready to be presented for the degree, his mentor would assume responsibility for helping defend the student's preparedness before the Degree Committee.

Students might sign agreements with their mentors. Each agreement would define the activities and responsibilities of both student and mentor, and would be reviewed and evaluated frequently.

The mentor, then, would have broad responsibility for the student. He should stand as the student's aide and advocate in both the University and the real world. Mentors should probably be

full-time employees of the University, and each mentor might have one hundred students. This ratio might enable a mentor to see each student for lengthy consultation once each month which, for most students, should suffice. We recognize that this role we have defined for the mentor will not be easy. Mentors, themselves, will require training in psychology and consultation skills and, therefore, the University should have its own mechanism for providing this training. Presumably, a mentor's training would include both seminars about "How to help students" as well as direct clinical training and evaluation of performance.

Students would also receive guidance in their work experience component from members of the University's adjunct faculty. The adjunct faculty would include workers or professionals in the field who were responsible for students' job supervision or other training. An adjunct faculty member might have anywhere from one to twenty students under his supervision, and he should be paid a nominal salary or receive some form of tax credit or other compensation. In addition, it has been suggested that the Commonwealth might employ similar tax incentives to persuade companies or other institutions to encourage their employees to become adjunct faculty members, since the Commonwealth has an interest in building a skilled labor force for the future. We describe these suggestions more fully in the section of this Report: "Costs." We also suggest that interested, qualified adjunct faculty members help prepare courses and help conduct seminars in the field.

A third guidance function entails collecting and cataloguing sufficient work experiences to meet students' interests. This function should be performed by a division of the University's central staff, with the help of mentors and liaison committees from the various professions. Information should be continually updated,

and should be distributed to mentors, tutors, and Regional Study Centers via data-processing equipment.

Finally, students need the opportunity to interact with other people in an informal, unplanned manner. This should occur on the job and in Regional Study Centers, but the mentor shall bear particular responsibility for helping his student learn from this interaction. We are especially concerned that the University provide ample opportunity for student-student interaction and learning. Some such interaction will occur if tutors are themselves students. In addition, we suggest the University develop "TV talk shows" at each Regional Study Center for students in that Center's immediate vicinity. A mentor might host such a program for his own students. Such two-way talk shows, or some similar vehicle, would enable students to interact with, and learn from, their peers.

The University's instruction and guidance mechanism could be one of its most imaginative innovations. In effect the mechanism would be a computer-aided ombudsman, a hierarchy of people with access to data storage and retrieval systems. This hierarchy would include professors, tutors, other students, mentors, and people who supervise students in their work experiences. Within this hierarchy, the mentor would assume the role of principal counselor or advocate. The mentor would be distinguished clearly from any other University personnel who evaluate or critique the student's performance, because it is essential that students perceive the mentor's guidance function as a helping relationship.

We discuss recommended ratios for faculty and students in the section of this Report: "Costs."

Facilities and Distribution Mechanisms

The University should be a non-residential college, in which students pursue individual programs at a variety of locations. Some of these locations could be temporary and perhaps suited to only one student -- a work experience site, for example -- while others would be more permanent and open to many students.

One type of facility would be distributed across the state in locations reasonably accessible to potential students. Called Regional Study Centers, these facilities would serve as locations for student-tutor or student-mentor conferences, for seminars, for study, for student use of TV and other media or special equipment, for access to the University's central facility, and for informal gatherings of students, staff, and interested people. Regional Study Centers could be located in storefronts, churches, libraries, secondary schools or colleges, private institutions, state or municipal offices, or even in prefabricated or mobile structures. Presumably, most Regional Study Centers would be located in existing educational structures such as schools, libraries, and colleges.

The Boston Architectural Center serves as one example of a Regional Study Center. Located in its own modern and well-equipped facility, the B. A. C. provides seminars, courses, training, and conference space for students and practicing professionals in a wide variety of architectural fields. Presumably, the University's Regional Study Centers would be more modest in physical design and furnishings, but their functions might be quite similar.

The number of Regional Study Centers will depend, of course, on the University's enrollment and program design. Empire State College, a new branch of the State University of New York

(SUNY) which is quite similar to our proposed University, will have 20 Learning Centers for 10,000 students, or a ratio of 500 students per Center. England's Open University has 250 Study Centers for 25,000 students, a ratio of one hundred students per Center. We suggest a ratio of 250-300 students per Regional Study Center for the Commonwealth's University.

In addition to enrollment and program design, the number of Regional Study Centers will depend upon the University's relationship to other national factors. We discuss these factors in the section of this Report: "Fluctuation Factor."

Finally, the number and size of Regional Study Centers would depend upon whether the University required attendance at a Center for any specific period. For example, the faculty in a program might suggest or require student attendance for some length of time at a summer "Institute," and this would necessitate a certain type of Regional Study Center.

The University will also require well-equipped space for its administrative staff, for the design and production of materials, and for such other centralized functions as data processing. Presumably some of these functions (such as materials production) might be subcontracted to existing institutions with their own facilities, especially in the University's initial years. However, there will be need for a central facility.

In addition to Regional Study Centers and a central facility, the University should also include a mobile component. That is, this component should "travel" in some fashion to the student, thereby enabling him to utilize its material at his own convenience and pace. There are several ways in which the University's courses

could be delivered to the student. Britain's Open University utilizes correspondence course materials, media, and kits which provide students with such facilities as simplified science laboratories. The Commonwealth's University presumably will employ a similar range of technological innovations in its "traveling" component. We describe this component more fully in the section of this Report: "Utilization of Technology."

Lastly, the University must provide space for students in their work experiences. Ideally, the University would not have to create physical spaces; rather, a student could work in an existing institution and utilize its space.

Utilization of Technology

As a non-residential university characterized by individual, self-paced learning, the University should employ educational media and technology to a far greater degree than most colleges. It can do so in two ways.

First, the University's central staff, with the mentors' help, should assemble a computer-aided inventory of job opportunities. This information should be current, and should be keyed to students' interests and to existing job possibilities. Thus, the central staff must maintain close contact with mentors, students, and with the adjunct faculty and others in the field. The information must also be easy to retrieve and to disseminate to students, mentors, and Regional Study Centers. We recognize the dangers of too optimistic a view of the capabilities of a computer-aided system, but believe that an efficient and manageable system can be constructed for the University.

Second, the University should utilize appropriate combinations of TV, tapes, film, programmed learning kits and other technological innovations in all courses. Ideally, each course should be deliverable to the student via technological means at whatever time and place the student wishes to study it. In practice, this will not be true of all courses.

In its initial years, the University must guard against placing unrealistic expectations on media and technology. Referring to technology, one educator recently commented: "Some swear by it. Others swear at it!" Thus, courses should be planned around media and technology which are currently available at reasonable cost. The creation of new films, equipment, and printed materials will take

many months and will require skillful coordination of different, specialized talent. Similarly, the revision of these materials will be expensive and time-consuming. Britain's Open University has found that one-half of its budget must be allocated to the B. B. C. for course design and production.

Therefore, the University should begin with a realistic view of technology's contribution, and on a scale small enough to enable technology to fill its essential and imaginative role.

During the preparation year, 1971-1972, whatever group is charged with program development should rapidly survey existing correspondence or programmed course materials available from Britain's Open University, SUNY's Empire State College, and from other institutions. We suspect that considerable material can be adapted for courses at the University, but realize that other material will have to be created and that whole courses may have to be written. Thus, the point at which students will be able to enroll for actual study in the University cannot now be pinpointed. Hopefully, the date will occur closer to the beginning of the pilot program (1972) than to the end (1976).

Evaluation of the University

Evaluation is, or should be, an integral part of any educational program. Without accurate feedback, the program has no sound mechanism for assessing its progress and improving its performance. As an innovative program the University will have particular need for sensible and sensitive evaluation to guide it towards improved performance.

In the case of this University, evaluation will be important for other reasons as well. Considerable suspicion currently undermines the quality of any "extension" or "continuing" education program, particularly one which utilizes correspondence courses. Students and teachers in these "diploma mills" are considered second-class citizens by the academic and professional Establishment, often with good reason. This Establishment will undoubtedly condemn students in the University simply because they lack the traditional credentials or characteristics required by the elite institutions. The unconventional nature of the University's programs will also generate distrust and hostility. Presumably, the University's students could receive a superior education in the University, only to find that their degree carried little legitimacy or credibility in the real world. Should this occur, the University's goal of expanding access to higher education would prove worthless. Thus, the need for careful, unimpeachable evaluation. The quality of the University's programs must stand or fall on their identifiable merits rather than on the prejudice of their inevitable detractors.

Also, there will understandable demands for evaluation from the University's financial sponsors, be they the General Court, the Federal government, private foundations, or all three. Given the importance of evaluation, the questions then becomes:

How best to conduct evaluation of the University?

The evaluation design must bear in mind that the University will not be an innovation whose purpose is to reform higher education in Massachusetts. Rather, the University should be an educational entity unto itself, an alternate form of higher education. Similarly, the evaluation design must recognize that its function should be to help the University learn more about its programs. This knowledge will be essential if the University is to assess its progress and redirect its efforts.

A conventional evaluation design would look for output measures, such as the number of students who complete each course, the number who locate work experiences, who graduate, who work in fields for which the University prepared them, and so forth. It would also attempt to assess differences between the University and more traditional programs and, perhaps, to account in some fashion for these differences. The results of such an evaluation -- compiled in charts, graphs, tables and statistics -- would appear impressive.

But these results would probably not be very useful to the University in its initial years. First, it would be unwieldly and impractical to define matched samples for experimental and control groups when hundreds of diverse students are following individual programs of study or work experiences. In addition to being time-consuming, frustrating, and probably impossible, any attempt to do so might impose undesired restrictions on the University itself.

Second, results such as these would represent an evaluation of progress towards long-term objectives. But in the

inevitable and unforeseen confusion of beginning the University, an evaluation of performance on long-term objectives might not be most important. More likely, the University will replace these long-term objectives with more pressing questions which it wants answered, questions which were unanticipated when it drafted the original evaluation design. For example, the University's long-term interest in the types of work experiences selected by students will probably be replaced by short-term problems such as the following:

> "Even though our students are getting good jobs, the mentors report that most employers are hostile. Mentors have to cajole or twist arms to get employers to take students, especially ones from disadvantaged or minority groups. The mentors resent having to do this and, as a result, they resent these students who seek work experiences. What should we do about this problem?"

> "Some students don't know what types of jobs they want. They flit from one to another, often breaking their contract when they do. It is giving the University a bad name, and isn't helping the students much either. How can we help students identify their latent career interests more successfully?"

A useful evaluation design must provide the University with feedback that can both identify unexpected problems such as these, and that can also help the University find solutions. Obviously, then, the evaluation for the University's initial years must incorporate far more than output measures. At the same time, output measures must be included, particularly to establish the credibility and legitimacy of the University's programs.

Malcolm Parlett argues convincingly for a broad, flexible evaluation design for most innovative educational programs.[11] He derives his model from social anthropology field work, and stresses that the goal of such evaluation must be to provide interpretation and insight into known <u>and</u> <u>unknown</u> problems, as well as measures of progress towards long-term goals. Applied to the

University, his approach would include the following elements in its design:

1. Evaluators must become immersed in the University, and live with it over a lengthy period of time. There should be multiple observers for each major phenomenon or factor which is being investigated.

2. Evaluators must know the University's long-term prime objectives. They must translate these objectives into output measures. But they must realize that their main task in the initial years will not be to evaluate attainment of these objectives. That evaluation must wait until the University attains stable operation.

3. Evaluators must collect as much data as possible, including both output data and subjective data such as photographs, conversations, personality tests, interviews, observations, and the like. When possible, subjective and open-ended material should be coded by outsiders.

4. Any material which can be quantified should be quantified. But quantifiable data must not be the sole basis for building the interpretive model.

5. Gradually, the evaluators should construct an interpretive model or "picture" of the University's operations, and should submit their interpretation to review at frequent intervals by the University and by outsiders.

6. The University should use this interpretation as the basis for altering short-term objectives or for identifying and resolving unforeseen problems which arise.

7. Finally, the evaluators should also provide the University with evidence of its performance on the more traditional output measures, such as the students' degree of success in finding meaningful work roles in society. These output measures must be established at the outset, and periodically reviewed, but data on them will necessarily require at least four or five years of University operations.

An evaluation of this type should illuminate as well as

evaluate. It should describe what occurs within the University as well as describe the results of the University's programs. The task, of course, will be to strike the proper balance between illumination and evaluation.

Fluctuation Factor

Of course, the University's enrollment -- and, therefore, its faculty, facilities, and costs -- will vary according to the state of the economy, international peace, manpower needs, enrollment in residential colleges, tuition costs, and so forth. For example, a period of escalating costs at other colleges coupled with unemployment in the the economy might steer greater numbers of students towards the University. Some would come to obtain a college degree at less cost. Others would seek training to enable them to move into new fields; an electrical engineer might decide to move into medical technology. Thus, the actual number of students enrolled in the University will vary widely, in contrast to most colleges which have large fluctuations in the number of applicants but not in the number of students admitted.

When the fluctuation does occur, the University must be able both to anticipate it and to provide greater (or lesser) numbers of Regional Study Centers, faculty, and programs. How should the University do this?

It is tempting to think of the University's TV, computers, correspondence courses, and mechanical aids as the answer. But they are not enough. The number of staff -- mentors, tutors, professors, adjunct faculty -- must be proportionate to the number of students.

Thus, this fluctuation factor will influence such matters as tenure. We suggest that the University develop renewable, five-year contracts for those faculty who would normally have tenure. These contracts would be renewed, if warranted, after thorough evaluation by a committee. While projected fluctuations in enrollment

will be one factor which influences the committee's decision to renew a contract, we hope very much that it will be far less important than the quality of the individual's contribution to the University. To compensate for the lack of tenure, the University might consider some form of compensation such as a 5% salary increment or a severance bonus.

Another "valve" to help the University adjust to fluctuations in enrollment would be to employ students as tutors in proportion to the number of students enrolled. By so doing, the University would be less financially committed to permanent faculty. Furthermore, we believe that only if students are involved in higher education as teachers and as students will any college or university be able to pay its own way.

Finally, other factors should also help compensate for this fluctuation, such as part-time employment, mechanized aids, and work experience. But none of these is likely to be as important as the type of faculty contract and the degree to which students can tutor other students.

The University must face this problem as a long-term problem at the outset. The initial conditions for which the University will plan are manageable, because there are some initial restrictions and controls. But in the long run, these initial conditions will not last.

Long- and Short-Term Costs

It is tempting to predict that the University's short-term (1971-1976) costs will be significantly less than at more traditional public and private colleges. However, cost estimation is filled with pitfalls, and inaccurate estimates have a habit of returning to haunt their authors. Thus, we only dare indicate preliminary trends and comparisons.

First, we believe the public pays a high price -- in dollars and in the morale of young people -- for its toleration of the cost of the existing college model. If the University does not solve this problem, then it may be no more stable financially, emotionally, or educationally, than other colleges. It is partially for this reason that we have recommended so much initial stress on the non-school and non-traditional structures, subjects, and styles.

Second, there are points for rough comparison. Britain's Open University, with 25,000 students, estimates its 1971 general overhead costs at $9.4 million and its direct student costs at $6.5 million (total $15.9 million), or roughly $635 per student.[12] The Urban College of Roxbury, a branch of the Antioch University Without Walls, projects a budget of $159,000 for an initial enrollment of sixty students, or roughly $2,660 per student, and assumes it can keep per student costs at a level which can be supported by tuition of that approximate amount.[13] Governor Sargent and Chancellor Moore have estimated the operating costs for an external degree program at ten percent of those for a conventional university.[14]

Obviously, these examples cannot be compared to each other. Nor can they be compared to potential costs of our proposed University, since none is exactly similar to what we propose. But

these examples do indicate the great range of costs for somewhat similar programs, and, therefore, the difficulty of attempting exact cost estimation at this stage. Thus, we prefer to suggest some rough orders of magnitude.

We understand that the state might provide start-up costs, for the 1971-1972 preparation year, somewhere within a range of $300,000 to $500,000. We believe that funding at this level would enable one group to prepare the field examinations for the University's external degree component, and another group to possibly begin preparation (but not production) of course materials. Again, some comparisons might be useful. Empire State College received a $1,000,000 grant from the Ford Foundation and Carnegie Corporation for two years' planning and program development. The New York State Department of Education received $800,000 from the same sources to plan and implement the Regents' Degree. The Syracuse University Research Corporation received $300,000 to study the feasibility of an external degree program for several private colleges. Thus, our estimate of the tasks which might be completed under a $300,000 - $500,000 one-year contract seems generous but possible.

Costs for the pilot program, 1972-1976, cannot be accurately estimated at this point. They will depend upon how much course material remains to be developed and produced, upon the number of students who enroll for the external degree, the number of students who enroll for study, the size of the faculty, the number of Regional Study Centers, how quickly the University expands into other fields, and so forth. We assume that these development costs will be high, but that they might be offset by financial support from government or foundations, or by some sharing of resources with similar programs like Empire State College. This latter possibility

strikes us as important to pursue.

Given the impossibility of accurate cost estimation, at this point, for 1972-1976, we offer the following as a rough order of magnitude of costs per student per year enrolled in the University.

Mentors

Each mentor sees 5 students per day, or 25 students per week, or 100 students per month. Each mentor is paid roughly $20,000 including overhead for the 100 students assigned to him. Therefore, cost per student is $200 per year.

Tutors

Each tutor, working half-time, can help 6 students per day, or 30 students per week enrolled in his course. At a full-time rate of $15,000 each tutor is paid roughly $7,500 including overhead and mailing fees for the 30 students assigned to him. Therefore, cost per student is $250 per year.

Course Development

Development of courses in each field might require 30 people (professors, media specialists, writers, and others) for two full years. Each person is paid roughly $20,000. Therefore, the cost of developing each field is $600,000 per year or $1.2 million for the two years.

However, the courses developed in each field might be usable for a period of six years, thereby reducing the development costs to $200,000 per year for six years. If one thousand students took the course in six years, cost per student would be $200. If ten thousand students took the course in six years -- not an unrealistic projection -- the cost per student would be only $20.

In the absence of firm enrollment projections, the University should anticipate $200,000 per year development costs for each field.

Course Production

Once developed, the production of course materials and the purchase of equipment might require an equivalent amount to development costs, or $200,000 per field per year.

Evaluation of Students

These costs include the development and administration of field examinations, and the costs of the Degree Committees. Of course, these costs will vary with the number of students who request evaluation for the degree. On an equivalent basis, each student might require the evaluation services of two people once per year. Assuming 200 working days per year, each of these people could therefore evaluate 100 students per year. At a salary of $20,000 including overhead, cost per student would be $200 per year.

Though higher than comparative costs at traditional colleges, the cost per student for evaluation at this University is similar to instruction and guidance costs, and reflects our belief that evaluation should be allocated similar resources as the University's other functions.

Adjunct Faculty

People who supervise University students during their work experience should receive some form of compensation. In addition, there must be some form of incentive so that an adjunct faculty member's place of employment will accept students as employees and will release time for the adjunct faculty member to supervise those students. It may be that the Commonwealth can provide these incentives more effectively than the University. For example, it has been suggested to us that the Commonwealth provide tax credit on the state Income Tax for each member of the adjunct faculty, perhaps at the rate of a $50 deduction for each student supervised. In addition, the Commonwealth might provide a similar tax credit to the adjunct faculty member's place of employment as an incentive to make work experiences available for students.

In addition, indirect costs to the University associated with its adjunct faculty might be $30 per student per year.

Other Costs

Other costs will include network transmission, central staff and administration salaries and overhead, the rental of facilities for course production and for Regional Study Centers, and computer time. While not insignificant, these costs will be relatively small and partially independent of the number of students enrolled in the University. For example, a Regional Study Center

might be located, for a nominal fee, in an existing high school or public library and could accommodate anywhere from one student to five hundred students.

Thus, that part of the cost per student per year which has been roughly estimated for the mentor, tutor, evaluation, and adjunct faculty amounts to $680. Course development and other costs will add a substantial increment to this figure. Even so, the University should be able to offer higher education at substantially less cost than other colleges and universities. In addition, the University should receive considerable income from two sources.

First, students should be expected to pay some portion of the cost of their education. While scholarships will be necessary and important if the University is to attract less affluent students, the fact that all students should hold paid jobs while enrolled will enable many to pay their own tuition.

Second, the University can anticipate ancillary sales of its course materials, including both printed material and films or equipment. We assume the course materials will be developed by skilled people with national reputations, and that there will be a national market for this material. Furthermore, if course development is considered an effort with benefits for the nation as well as the Commonwealth, then there is greater likelihood of external support for course development from foundations or the Federal government.

Program Preparation

At full operation, the University should prepare its own programs or enlist the help of other organizations when appropriate. In its initial stages of operation, the University will necessarily rely on outside help.

We suggest that the University contract with one or more organizations for an initial year of program design and preparation in the first three fields, followed by four years of testing, trial operation, and revision in these fields as well as program development in entirely new fields. The contract should include a commitment from civic leaders and professionals in each field to serve on "liaison committees." These committees would advise the University on program design and development, and would assume some responsibility for locating field experiences for each program in a variety of settings. The committees would also help the University make whatever arrangements are necessary with participating institutions so that job supervisors and others can serve as members of the adjunct faculty.

The University's contract for short-term program development should be awarded to development organizations which either have, or can locate, the scholars, teachers, media specialists, writers, and educational technologists who will be needed to prepare interdisciplinary, multi-media programs in the first three fields. Preparation of similar programs for other new colleges, notably Britain's Open University, has required more time, money, and skilled leadership than was first allocated or imagined necessary.

Finally, the contract should also make clear the

relationship between these development organizations and the University's staff and faculty, particularly as the latter group gains responsibility and authority. To ensure that its fledgling faculty has firm power over its programs the University should establish from the outset the mechanism for faculty participation in, and control of, program development.

The Commonwealth would be asked to fund this contract between the University and the development organizations. To increase the likelihood of obtaining funds from the Federal government and foundations (which recently have supported similar projects), the University might consider affiliation with a neighboring state such as Rhode Island or with another Open University such as Empire State College (SUNY).

When the University reaches full operation and prepares its own programs, it may have to resolve two potential problems. First, to what extent does the University want to employ directly the production specialists who are needed to produce programs? Such people are not usually university employees, but it seems logical that they should be for this University. Second, to what extent should the academic faculty be required to conduct basic research as well as design course materials or engage in other aspects of course preparation and production? Reducing the importance of "Publish or Perish" is appealing, yet the faculty must remain intellectually alive, current, and respected. Put another way, the University might emphasize that creating this new form of educational institution is, in itself, a form of research. Thus, its faculty's work in course design and production, evaluation of students, and evaluation of University programs would become its research activities, rather than the more usual form of research required by other universities.

September, 1972, Start-Up

Launching a venture of this nature and size will not be easy. Because no large campus will be constructed, the University will not have that multi-year construction period for planning and program development. Thus, it is imperative that the University limit its size and scope during its initial pilot period.

Fortunately, the University can benefit from the experience and programs of similar projects in the United States and around the world. Thus, we believe that a pilot program could possibly begin in late 1972, if the Commonwealth can provide a full year's time and sufficient funds for preparation of the University's initial programs. This year-long period would therefore have to begin in 1971.

This year-long (1971-1972) preparation period, coupled with the pilot program (1972-1976), should comprise a time-span of at least five years in order to ensure steady, continued growth of the University. The last year of this five-year period might be considered as the transition period to full operations, although probably not full enrollment.

We suggest that the University aim towards establishment in late 1972, of the "external degree" as the first component of the pilot program. That is, the University would establish the examinations and other evaluation procedures by which a student could earn a degree on the basis of knowledge and accomplishments already acquired elsewhere. While some examinations and other criteria for evaluation of students will undoubtedly have to be created, we assume that the University can also use portions of existing examinations such as the College Proficiency Exam or the Regents' Degree program in

New York State.

Beginning the University's operations with its evaluation component should help establish what we believe should be a fundamental characteristic of this University: namely, the teaching function and the evaluation function should be separate and distinct from each other.

During the preparation year 1971-1972, while one group within the University is preparing material and procedures for administering the external degree in late 1972, another group should begin program development. Whether this group can begin will depend upon available funding. We have described this developmental process in earlier sections of this Report. Briefly, we imagine the University will have to contract with existing developmental organizations for a large portion of this task. These organizations must be able to locate the great range of expertise -- in scholarship, educational technology, communications, and such -- which the production of course materials will require. The organizations must have their own broadly based membership and boards. Finally, the organizations must also enlist the help of practicing professionals in the University's initial fields (social welfare, pre- and para-law, pre- and para-medicine) to establish specific goals, objectives, and design criteria for each program or course. We envision considerable consultation with these practitioners during the early phase of the contract.

We cannot fully determine at this point whether the preparation of materials can proceed quickly enough to enable students to enroll for actual study in late 1972. It seems likely that some course material for the University's initial programs can be adapted from existing materials developed by Empire State College, the University Without Walls, the Open University in England, and other institutions. If so, and if the University can adequately fund

new program development as well as hire faculty and locate Regional Study Centers, then we assume that limited numbers of students might be able to enroll for study in a pilot program as early as September 1972. A more realistic projection, however, will be sometime in 1973.

The estimate of late 1972, as a possible start-up date does not account for potential delays due to political or administrative difficulties within the Legislature, the Governor's office, the existing college system, or the Board of Higher Education. It also does not account for the impetus which strong leadership of the University can provide. If this University can locate forceful people who can provide skilled leadership, then the chances for an early start-up will be greatly increased.

Summary

In this preliminary Report, we have defined the major characteristics of a new, unusual University for Massachusetts. We have tried to make our recommendations as detailed as the limits of this study, and our imagination, would allow. In closing, we wish to stress one final, important point.

Many of our recommendations may not seem practical. For example, it will be hard to locate meaningful work experiences for thousands of students. It will be difficult for Degree Committees to review the portfolio of every student who requests the degree. But we deeply believe that this University must confront, and solve, these problems. Specifically, the University must make possible and effective its work component, its mentor's role, its evaluation procedures for the degree, and its course delivery systen..

If these components of the University cannot be instituted in effective fashion, then we question whether the Commonwealth should create this University at all. Without these components, the University would become a second-rate institution, a "degree-mill" run by the state.

Thus, the next year will be crucial. Whether or not the University does become an unusual, effective institution, or merely a degree-mill, will depend on the work of those people or organizations who are charged with implementing the recommendations in this preliminary Report.

REFERENCES

1. Chancellor Edward C. Moore, memorandum to Dr. J. R. Zacharias, June 30, 1971, p. 1.

2. Agenda for January 4, 1971 meeting of UMass President's Committee on the Future University, p. 2.

3. Ernest L. Boyer and George C. Keller, "The Big Move to Non-Campus Colleges." Saturday Review, July 17, 1971, p. 49.

4. "Higher Education in the Boston Metropolitan Area," Vol. VI, Board of Higher Education series, 1969, p. 17. Quoted in John Young, "The Urban College of Roxbury: A University Without Walls," unpublished qualifying paper, Harvard Graduate School of Education, 1971.

5. Federal Task Force on Higher Education, The Newman Report on Higher Education, Washington, Department of Health, Education, and Welfare, 1971

6. Ernest L. Boyer and George C. Keller, "The Big Move to Non-Campus Colleges." Saturday Review, July 17, 1971, p. 58

7. Chancellor Edward C. Moore, memorandum to Dr. J. R. Zacharias, June 30, 1971, p. 3.

8. Chancellor Edward C. Moore, memorandum to Dr. J. R. Zacharias, June 30, 1971, p. 5.

9. Donald W. Oliver and Fred Newman, "Education and Community," Harvard Educational Review, Vol. 37, #1, Winter, 1967, p. 97.

10. Donald W. Oliver and Fred Newman, "Education and Community," Harvard Educational Review, Vol. 37, #1, Winter, 1967, p. 96.

11. Malcolm Parlett, "Evaluating Innovations in Teaching," invited paper to be included in Butcher & Rudd, Higher Education in the Seventies (to be published).

12. Stuart MacLure, "England's Open University," Change Magazine, March-April, 1971, p. 63.

13. "Higher Education in the Boston Metropolitan Area," Vol. VI, Board of Higher Education series, 1969, Appendix A. Quoted in John Young, "The Urban College of Roxbury: A University Without Walls," unpublished qualifying paper, Harvard Graduate School of Education, 1971.

14. Muriel Cohen, "State Planning Open University," Boston Herald Traveler, April 2, 1971, p. 3.