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ABSTRACT

With rising enrollment pressures, practices resulting in flexibility in the undergraduate curriculum are important as a means to provide optimum development of students from varying academic backgrounds and experiences who are preparing for a wide range of careers. Three general types of practices leading to curricular flexibility are emerging: (1) Substituting courses permits omission of certain courses in which the student demonstrates the required proficiency. (2) Course patterns designed to provide curricular flexibility place primary emphasis on special courses or special sections for exceptional students. (3) Teaching-learning techniques may provide for flexibility through instructional practices of individual teachers and through other teacher-student relationships in the learning process. It is concluded that the success of practices resulting in curricular flexibility depends not on artificial devices but on the campus atmosphere, the quality of instruction and of the student body, the personality of the faculty, and their interest in planning and implementing program arrangements best suited to their particular student clientele. (Author/LBH)

Highlights

With rising enrollment pressures, practices which result in flexibility in the undergraduate curriculum have become increasingly important as a means of providing for optimum development of students who come with widely varying academic backgrounds and experiences and who are preparing for an increasingly wide range of careers in our complex society. Three general types of practices leading to curricular flexibility seem to be emerging:

1. Substituting courses permits omission of certain courses in which the student demonstrates the required proficiency. Such practices provide for acceleration or enrichment and require a minimum of curricular reorganization. Their importance lies in the fact that they encourage students to make the most of their learning opportunities in high school or from experience, and they avoid unnecessary duplication.
2. Course patterns designed to provide curricular flexibility place primary emphasis upon special courses or special sections for exceptional students. Programs of this type emphasize depth, breadth, and enrichment of learning and are an outgrowth of considerable curriculum planning by the institution.
3. Teaching-learning techniques may provide for flexibility through instructional practices of individual teachers and through other teacher-student relationships in the learning process. Programs using this means of providing flexibility give the student maximum responsibility for self-direction and initiative to work in accordance with his abilities and potential. The success of such programs depends upon the interests and abilities of individual faculty members to a far greater extent than do other types of curricular flexibility.

In the final analysis, the success of practices which result in curricular flexibility depends not upon artificial devices but upon the atmosphere of the campus, the quality of instruction and of the student body, the personality of the faculty and their interest in planning and implementing program arrangements best suited to their particular student clientele.

OE—50032

NEW DIMENSIONS
In Higher Education

Number 10

Flexibility
in the Undergraduate Curriculum

by
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U. S. DEPARTMENT OF
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FOREWORD

The Series

THE SERIES, "New Dimensions in Higher Education," deals with developments of significance to colleges and universities and all persons interested in improving the quality of higher education. These developments are examined one at a time but in the context of a series. Each number is intended, within the bounds of reasonable brevity, to provide the hurried reader with a summary and interpretation of a substantial body of information. To the extent feasible, detailed studies are cited, needed additional research is identified, and recommendations are suggested. Background materials include institutional reports on file in the Office of Education's Clearinghouse of Studies on Higher Education, published literature in the field, and the counsel of educators who are recognized authorities in the subjects treated. In order that the series may improve its service to colleges and universities, reader reactions are welcome.

This Issue

IN THEIR SEARCH for ways to help each student progress at his best rate and depth, institutions have turned to a variety of practices which lead to curricular flexibility through course programs and teaching techniques. Some of these practices are relatively new; others are as old as good teaching but have been given new emphasis. Faced with enrollment pressures of students with wide variations of academic backgrounds and equally wide differences in career objectives, administrators see in practices which lead to flexibility not only a means of improving student learning but also a means of improving institutional offerings, enhancing faculty growth, facilitating admissions practices, and cutting down on attrition.

The major portion of this publication is devoted to particular practices leading to flexibility as these were observed by the author in 13 specific institutions. To simplify the treatment of various overlapping types of practices, the programs are discussed under three headings: (1) Those practices which provide flexibility by permitting the student to skip or substitute courses on the basis of demonstrated proficiency, and thereby to accelerate his program or take additional work for breadth or enrichment; (2) those which provide flexibility through course patterns, special courses, or special sections for enriching or broadening programs; and (3) those which provide flexibility through varied or improved instructional methods or other teacher-student relationships in the learning process.

The author, dean and professor of history of Lafayette College, is widely known in educational circles and the opinions expressed are entirely his own. Because the report is based on observations, there are few specific references to published materials. The original manuscript was read by a number of educators, including one or more individuals at each of the institutions represented, and their comments and criticisms have been considered in preparing the final draft.

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Director, Programs Branch
Division of Higher Education

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CONTENTS

FLEXIBILITY IN THE UNDERGRADUATE CURRICULUM

Introduction

FLEXIBILITY IS USED in this report to refer to those practices or combinations of practices by which each student is permitted to progress in his college program at the rate and depth of which he is capable. This somewhat free interpretation of the word was selected in an effort to simplify the general discussion of a pattern of emerging practices for which no more suitable term has yet become established.

During the first 3 months of 1958, through a travel grant from Carnegie Corporation, the author visited 13 campuses in order to study the operation of and possibilities for flexibility in the undergraduate curriculum. Those visits intensified the author's continuing interest in developments on the campuses concerned, and recent information reported by the institutions is included in the following discussion.

This report describes the cross section of practices observed and is in no way a survey of the degree to which flexibility is practiced across the Nation. The institutions visited were Brandeis University, California Institute of Technology, the University of Chicago, Harvard University, Hiram College, the Massachusetts Institute of Technology, the University of Michigan, Oberlin, Reed, San Francisco State College, Stanford University, University of California (Los Angeles), and Yale. Each institution was selected either because the author was aware of an interest in curricular flexibility or because the school represented a type of institution. The list was not designed to be representative; it was certainly not exhaustive. The examples of flexibility cited are illustrative of what can be done; there are many other excellent programs in other institutions. Because the report is based upon personal observations and discussions with administrators and students at the institutions represented, there are few references to published data.

At the outset, it must be recognized that the quality of flexibility can be good or bad, that flexibility can provide freedom from curricular rigidity but that it also can provide looseness and chaos. To be really effective, flexibility must be planned and purposeful; it

must be deliberately designed to contribute to the continuing momentum in student growth and thereby result in a cumulative effect in education.

There is flexibility in rate of progress and flexibility in depth of learning; each has its place and its purpose, and their relative merits are not argued in this report. What the report does show is that purposeful flexibility is a valuable trend in higher education, and it gives examples of the kinds of flexibility which have been used.

Rationale for Curricular Flexibility

The sound curriculum is the one that takes ability differences into account, that is devised to demand nothing but the best from every student, that puts a high premium on individual differences, and that provides for an ample amount of individual attention to those who can make the most of educational opportunities.

There have been charges in the past that too many colleges were like vast supermarkets, catering to the whims of the public, packaging their courses, marketing their wares, supplying every customer with a standardized product regardless of his interests or abilities. It has been generally agreed that the standard curriculum may be satisfactory for the standard student; but any educator knows that purposeful superior students are not satisfied to be led slowly along the path of learning when they have the intellectual muscles to race ahead.

To combat some of these problems, curricular flexibility as an educational ideal has much to offer. Its existence benefits the institution, the faculty, and the student body. Attention to this new dimension in higher education follows the American ideal of giving every capable student the maximum opportunity for full development of his intellectual resources.

Flexibility and Institutional Progress

The college gains from flexibility in that its operation serves to prevent stagnation. Any course of study, no matter how good, which does not change with changing conditions, eventually becomes obsolete. Any policy or degree requirement which is not subject to at least the possibility of modification eventually becomes a "sacred cow," revered perhaps for reasons less than rational.

What reasons do college staffs give, for instance, for requiring 4 years, or 120 semester units, or something else for the bachelor's degree? What is so magic about 4 years? When only about 40 percent of all college entrants graduate in 4 years, what is the point in maintaining the fiction that par for the course is that period of time? What does one lack or lose by graduating in 3½ years? Or in 3 or 5 years for that matter?

The answer sometimes is given that one misses a lot, that there is more to a college education than passing a set number of courses, that a certain time must elapse for a student to mature, for the knowledge he has acquired to sink in, that there must be adequate time for meditation. More frequently, however, the answer is simply "tradition," and a far too elaborate extracurricular schedule that, along with the values it brings in terms of lasting friendships and close associations, produces distractions that lead a student to fritter away his energies and slows him down to a common pace. In the past, the weight of tradition has been such that few students have accelerated their programs and few institutions have been interested in encouraging their students to accelerate. Perhaps they should not, but it should be for reasons other than tradition.

It is maintained at Reed College, for example, that the 4-year pattern persists as a result of a curricular arrangement that differs at the underclass level from what is being done in high school and that requires full junior and senior years with senior thesis required of all students. According to one staff member, "The upperclass program is designedly demanding of even the best students, and the appropriate methods of instruction—small group discussion, absence of textbooks, emphasis on individual responsibility in the laboratories, and in written work in other courses—limit acceleration but encourage flexibility." Reed gives "credit for quality" in the first 2 years, as well as permits heavier than normal loads, but these devices almost never result in acceleration.

At institutions such as Yale where the residential features of college are emphasized, there is another reason for the tendency to hold to the 4 years. Although Yale College has allowed graduation to appropriate students in 3 or 3½ years, it is believed that the valuable experience of living in a residential college should not ordinarily be speeded up but that considerable flexibility should be provided within the 4-year program. Yale, Harvard, and other institutions which stress residential features consider that they have intellectual resources to occupy a student for many years. To those who take this view, it is almost unthinkable that anyone should desire to leave the campus before the end of 4 years.

The issue frequently becomes one in which institutional reasons

for holding to the traditional timetable are balanced against individual exceptions in the form of unusually able or strongly motivated students who are impatient to get ahead to graduate study, to professional school, or to careers.

Flexibility and Faculty Growth

Faculties as well as institutions benefit from the re-examinations and soul-searching which the acceptance of curricular flexibility brings. Willingness to admit that some students can learn more than others, that some need more attention than others, that some deserve more than the minimal requirements, this marks a faculty willing to subject its requirements and programs to the test of workability. While it must be recognized that teaching methods are determined largely by the interests and abilities of individual faculty members and not by administrative decree, still there is much that can be done to encourage development of those practices which contribute to flexibility in rate and depth of student progress, and indirectly to faculty growth.

There is increasing faculty interest in curriculum improvement and concern for superior students. Committees on the gifted are being formed; individual instructors are being encouraged to modify what they do in order to stimulate their top students.[1] Budgetary provisions are being made to permit special sections for the gifted, special honors programs for those who can benefit most by them, and special guidance for the bright boy and girl.

Flexibility and Student Learning

One way in which colleges and universities can make it possible for students to work up to their capacities is by putting into the curriculum sufficient opportunity, direction, and encouragement for flexibility in rate and depth of progress so that those with a big intellectual appetite may feast fully at the table of learning, so that those who can carry a heavier than normal load are encouraged to do so. A student should move ahead just as far and as fast as he can go. He should be permitted to get the most learning he can for his money.

One of the most important justifications, therefore, for seeking greater flexibility in the undergraduate course of study is to aid

[1] See, for example, *The Superior Student*, Newsletter of the Inter-University Committee on the Superior Student, University of Colorado, Boulder, published regularly since May 1958.

the gifted students either to finish college at an accelerated rate or to get more out of their 4 years than would normally be the case. For the below-average student, there are remedial courses and additional counseling. Indeed, for a number of years, colleges spent more time, money, and attention on their poorer students than on their better ones. But this situation is rapidly changing.

Furthermore, in any class, no matter how outstanding, there must be a lower half. In any group there must be a marginal individual. A particularly difficult problem may exist even for the highly able student in an institution whose selectivity is such that only outstanding persons are admitted. When such a student discovers he is not doing as well as he expected, he faces a lonely, saddening type of adjustment. In some instances, he rolls up his sleeves and works all the harder to live up to expectations. In other instances, he throws up his hands in despair because he is not doing well enough, with the result that he finally fails. Some students cannot take not being at the head of their class.

How much can we expect students really to learn in college? The answer to this question touches on the motivation for going to college these days and on the ability of the colleges to channel these motivations into purposeful development of human resources. Effective use of flexibility in curricular arrangements and instructional methods can be not only a strong encouragement for students with seriousness of purpose but also a strong deterrent to applications from students with superficial motivations.

Flexibility, Admissions, and Attrition

Colleges with selective admissions policies have a number of reasons for modifying the standard curriculum. Frequently, a college student who has been first or second in his high school class and who has received high grades without ever extending himself comes to college expecting to continue his distinguished record without much more exertion than he had expended before. It comes as a shock to such a student that anyone else in the class is just as distinguished as he. What is more humiliating is that his classmates are not interested in what sort of record he maintained in secondary school, and his instructors are not impressed with his previous grades. The lofty high school senior becomes a lowly freshman.

Another group in the high level ability category are those who in high school got high grades because the rest of the class did less well than they. As a result, they may have been encouraged to reach beyond their level, and undertake an impossibly difficult

course of study in college. Thinking they have the ability to learn anything, they are motivated more by pride in their own intelligence than by intellectual curiosity. When they make just average grades they are startled. They face the necessity of learning humility.

The marginal student in a highly selective institution is also in need of special attention. Frequently extra guidance is called for if this person is to be salvaged before academic disaster occurs. Some institutions are concerned about this type of marginal student and attempt to assist him in recognizing the realities of the situation, in revising his or his parents' expectatons, and in helping him to achieve a satisfactory record in the face of more promising classmates. At the Massachusetts Institute of Technology, for instance, a member of the Dean's office staff is especially designated to provide special counseling for students on academic probation, and all students on probation are urged to avail themselves of this service. In addition, the student who needs counseling in greater depth also has available the advice of a psychiatrist to help him develop a fresh perspective on where his problem lies. It is evident, however, that in many institutions there is insufficient concern for students who have the ability and the high school record to do satisfactory work, but who drop out.

Not only is there a need for flexibility in programs to compensate for differences in abilities of students admitted to college; another major reason for enhancing curricular flexibility is to reduce undergraduate attrition. Student drop-out is a waste of both institutional and human resources. At the present time, only about 40 percent of those who enter college graduate in 4 years and probably no more than 60 percent of all persons who enter college ever graduate.[2] Some of those who fail deserve to do so, of course. Others no doubt find that they have chosen an institution or a program inappropriate for their particular needs. Still others find that they are unable to continue in college for financial reasons. On the other hand some of those with ability to do college work leave before graduation simply because they lose interest or have not been sufficiently stimulated by their courses of study.

Statistics can be misleading, particularly statistics about student behavior. Measures of interests and motivations are being developed to supplement measures of scholastic ability as a basis for admission practices designed to match students and institutional objectives. Once the students are admitted, curricular flexibility,

[2] U.S. Department of Health, Education, and Welfare. Office of Education. *Retention and Withdrawal of College Students*. Washington: U.S. Government Printing Office, 1958, p. 16. (Bulletin 1958, No. 1).

improved instruction, and better counseling may be important factors in salvaging a substantial proportion of those students who might be tempted to leave college for real or superficial reasons.

Too Much Flexibility

There is a danger, of course, from too much flexibility just as much as from an inflexible curriculum. Ideal flexibility is not realized through a totally free elective system. It is not achieved by complete permissiveness, nor by shaping the curriculum to the whims of the student body, the alumni, or the public. It is not gained by weakening the liberal arts. Institutions have too long been too passive in catering to the demands for this course or that, this special program, that special device. We cannot expect that all adolescents know their own capabilities or what is best for them. Flexibility for flexibility's sake could make higher education little better than an intellectual department store where the customers decree the bargains, select their wares without benefit of advice, and pay pathetically little for a hodge-podge of educational bric-a-brac. On the other hand, there are numerous ways in which purposeful flexibility can be used to give breadth and continuity to learning, as we shall see in the sections which follow.

Types of Flexibility

Consideration will be given here to the different types of flexibility which currently characterize the courses of study at some of the better institutions of higher learning in the United States. For convenience of discussion in this report, the various forms of flexibility are treated under three headings, arbitrarily established to form a framework: Flexibility through Skipping or Substituting Courses, Flexibility through Course Patterns, and Flexibility through Teaching-Learning Practices. These groups are not mutually exclusive, since some forms of flexibility have characteristics appropriate for all three headings. However, these groups do facilitate discussing together those forms of flexibility which are related by purpose or by practices involved.

The reader is reminded that examples are based on observation or discussion at the 13 institutions visited by the author in his study of the operation of and possibilities for flexibility in the undergraduate curriculum. Programs similar to those described are operated at other institutions, either under the same general names

or similar names. Each institution uses numerous variations of the types of flexibility, each adapted according to the combination of the particular subject being studied, the particular qualifications of the students being served, and the particular instructional skills of individual staff members involved.

At M.I.T., for example, a student's program is a "variant program" if it is either accelerated or expanded beyond the average catalog recommendation. Among the ways this can come about are receipt of degree credit at entrance, overloading, receipt of advanced standing credit by examination, or having a prerequisite course requirement waived. Of the class admitted in September 1961, about a fourth had received some credit at admission, but by the end of their freshman year, more than half of them had variant programs. The programs of most students become "variant" by the end of their 4 years.

In terms of flexibility, officials at M.I.T. state that it is the intention of the faculty to give each student every opportunity to assemble an individual program which suits his interests and his needs. Within the course-system framework, a student who wishes to embark upon an unusual program need only satisfy his registration officer on two counts; namely, the program must be focused at a proper educational objective, and in the interest of his own academic safety the student must convince his registration officer that he has the necessary abilities and background to get satisfactory grades in any advanced courses that he elects. Furthermore, individual faculty members are allowed extreme freedom in the manner in which they teach their courses. Experimental teaching innovations are encouraged, and a senior member of the faculty has been appointed to keep himself informed of these experiments and to publicize the more successful ideas. While recognizing inter-relationships among types of curricular flexibility, of which the program at M.I.T. is just one example, the following discussion deals separately with the various forms of flexibility in order that the reader may compare differences in institutional practices.

Flexibility Through Skipping or Substituting Courses

The criterion for classifying types of flexibility for discussion in this group is that, by demonstrating the required level of proficiency, a student may be permitted to omit certain courses normally in his program; whether the student gets credit for these courses or how the rest of his program is affected as a result of omitting the courses is not a factor in determining the classifica-

tion. For example, although some schools do use these forms of flexibility to give the able student a choice between enrichment and speeding up his total program, others allow acceleration in certain courses only to permit enrichment in breadth or depth by substitution of other work.

At Brandeis, acceleration is not encouraged but freely allowed. The basic attitude here seems to be that no student should rush through, that five courses should keep a student busy, that flexibility should be employed for enrichment but not for acceleration. However, it is recognized that for some students acceleration may be necessary or desirable or both.

At the University of Chicago, acceleration is possible by means of the placement system and the general education tests. The general education requirements are defined in terms of 10 year-courses. Eight is the maximum required of any student. Hence a student who is excused from three or more will be in some degree accelerated. Last autumn 15 percent of the entering students received placement recommendations producing less than one quarter's worth of acceleration, 12 percent earned one quarter's worth but less than two, 6 percent earned two quarter's worth but less than three, and only 3 percent earned a full year's acceleration or more.

In general, then, the teaching-learning techniques prevailing at an institution are likely to be the prime consideration it uses in determining whether work is subject to flexibility through skipping or substituting courses, and the institution's philosophy and objectives determine whether the resulting acceleration must be used for enrichment or may be used for speeding up the student's program. Flexibility practices which permit the able student to skip certain work, with or without the substitution of other courses, depending upon institutional policy, generally fall into the following types: advanced placement or advanced standing, early admission, and credit by examination.

Advanced placement and advanced standing.—Among the more promising examples of flexibility are the advanced placement program sponsored by the College Entrance Examination Board, and a variety of other advanced standing programs sponsored by individual institutions to conform to local conditions. These practices, and the extent to which they are used by colleges and universities, are discussed in considerable detail in No. 8 of the *New Dimensions* series.[3] They involve the awarding of advanced standing in college work, with or without credit, on the basis of college-level

[3] Shirley A. Radcliffe, "Advanced Standing," No. 8 in the series on *New Dimensions in Higher Education*. Washington: U.S. Government Printing Office, 1961. 24 p.

work during high school. The programs have been developed in the process of eliminating duplication between high school and college. Among their important contributions, besides providing flexibility in progression rate, is the encouragement of better teaching and more purposeful learning in secondary school.

There is a wide variety in the way in which colleges operate advanced placement or advanced standing programs, each institution formulating its own policies to conform to its objectives. Only programs at the 13 institutions represented in this study on flexibility are reported here, but their practices are generally representative of those in other institutions.

At Stanford University a limit of 6 quarter units in any one department and a maximum of 45 quarter units are allowed. Advanced placement is most frequently given in the field of foreign languages, about a hundred students receiving advanced placement in this area annually compared to only a few in English, science, and mathematics.

At Oberlin College there is no maximum placed on the amount of academic credit a student may receive by way of advanced placement. Thus far the most a student has received is 15 points. At the present time, approximately 15 students a year ask for advanced standing credits. The Oberlin faculty takes great care in evaluating its advanced placement candidates. The departments interview the students concerned, although a score of 3 or higher on an Advanced Placement Examination qualifies a student for advanced standing consideration.[4] In some cases, additional examinations are given.

No maximum is placed on the amount of credit which a student may receive at Brandeis through advanced placement. Students with such credits may enroll in courses not normally open to freshmen and may, in some instances, complete degree requirements in fewer terms in residence. The rule of the faculty is that a candidate who receives an examination grade of 3, 4, or 5 in an Advanced Placement Examination (a) will be considered to have satisfied the equivalent course requirement, (b) will be eligible to take a more advanced course in the area of his examination, and (c) will be awarded semester hours credit comparable to the number awarded for the completion of a similar course at Brandeis. Entering students who do not qualify for advanced placement on the basis of participation in the Advanced Placement Program may, in certain areas, become so qualified on the basis of (a) College Board scores or (b) special departmental examinations.

To some of the faculty at Brandeis the problem of advanced

[4] The maximum score on a CEEB Advanced Placement Examination is 5.

placement is viewed as an esthetic question. There is, after all, a certain artistry in curricular arrangements which avoid duplication or forestall boredom. The issue of credit is not uppermost in their minds. If credit is an easy device for recognizing student accomplishment and rewarding secondary school excellence, then credit should be awarded, by all means. The more compelling reason for supporting advanced placement, however, is simply the view that no student should be required to take a course in which he can demonstrate knowledge of that course in advance. Be that as it may, students at Brandeis and elsewhere probably attach more significance to advanced placement than do faculty members. And secondary school teachers probably place more significance on the credit aspect of the program than do the students involved.

At some institutions, a stated maximum of college credits is attainable. The University of Michigan, for instance, normally accepts up to 16 semester credits of advanced placement, but has allowed as many as 24. To qualify for such advanced credit, students need to earn 3 or better on the Advanced Placement Examinations.

The University of Chicago places no limit on the quantity of advanced placement credit. Scores of 4 or 5 usually receive credit. The College's own placement and accreditation tests are, however, the more normal way of earning acceleration at Chicago.

The opportunity to enter Yale with advanced standing is open to the student who makes excellent scores on entrance examinations or on the Advanced Placement Examinations. Students whose work qualifies them are eligible for Distributional Credits and/or College Credits. Such awards enable the superior student to enter directly into higher courses and thereafter to attain a greater freedom and flexibility in arranging his program of studies in future years or to accelerate his academic career as much as his talents and interests justify.

Distributional Credit is granted to the student whose entrance record in English, history, language, mathematics, chemistry, biology, or physics gives evidence of achievement at a sufficiently high level to have anticipated the main content of a subject in the distributional requirement (plus mathematics) of the College. The credits thus earned free the student to take, as a freshman, advanced courses in the field where they have been won, to take courses in other areas of his interest, or to repair any deficiencies he may have in his preparation for college.

College Credit, that is credit toward the degree, as well as Distributional Credit, is granted at entrance to students who have had an Advanced Placement course or its equivalent i.. secondary

school and who score 4 or 5 on the Advanced Placement Test. In addition, College Credit may be granted to the student who has acquired Distributional Credits without College Credit at entrance, and who has done satisfactory work during freshman year. The student receiving College Credit may proceed faster to his major field of interest, undertake special and advanced work in areas in which he is qualified, reduce his formal program of studies during succeeding years, or reduce the time required to complete the undergraduate program.

The cut-off score for Distributional Credit on the advanced placement tests varies at Yale, department by department. In some departments, a score of 3 is required; in others 2, is acceptable. Apparently, the faculty at Yale is less interested in the test score than in the secondary school which the entering freshman attended. Indeed, students with different test results may receive the same amount of credit on the basis of other factors related to the school from which they come. Although it may appear that Yale takes a relatively generous attitude toward the scores made on the advanced placement examinations, actually a good deal of care is taken in evaluating the test results instead of accepting the scores outright. For example, the tests are read in the English and foreign language departments as a basis for determining acceptance of scores in these fields.

Apart from giving credit, Yale requires a student to enter a course at the level at which he has been placed in order to eliminate any overlapping between secondary school and college. The exceptional student, it is believed, should not repeat the ground he has already covered. Harvard follows a similar policy on the grounds that if a student is permitted to reject his advanced placement, the institution is discouraging flexibility and encouraging overemphasis on grades. This policy is sometimes difficult to enforce, but an attempt is made to hold the line and urge that students not take work below their capabilities.

A large segment of M.I.T.'s student body is advanced placement minded. Of an entering class of 868 students in 1961, 237 took one or more of the CEEB advanced placement program examinations and 208 received credit for 436 courses. Freshmen can also receive degree credit at entrance by presenting college transcript evidence or by taking advanced standing examinations at M.I.T. All together, 25.8 percent of those entering in 1961 received degree credit at entrance for 507 courses.

At California Institute of Technology, about a fourth of the entering freshmen receive advanced placement in mathematics. At

the end of the first year, these students have covered either two-thirds or the whole of their sophomore mathematics.

It is at Harvard that the principles of advanced placement are most ardently defended and the administrative procedures for operating a program most carefully worked out. In addition to the subjects in which there are Advanced Placement Tests, Harvard awards advanced placement when appropriate in Far Eastern history, Greek, music, and Russian. Published statements seem to indicate that Harvard is doing more with advanced placement than any other institution, is more generous in the award of credit, more certain of the rightness of its position, and more willing to experiment in this area than any other college. And Harvard is probably currently reaping more benefits from the advanced placement program than any other institution.

A full-time director with a travel budget administers the program. In most fields students with scores of 3 or better on the Advanced Placement Examinations automatically receive advanced placement without consultation with the department concerned. This is justified in terms of consistency and efficiency. Apparently, as long as the institution is satisfied with the tests, and as long as central reading and the same type of examination are continued, Harvard is willing to abide solely by the test results. This arrangement relieves departments of the details involved in evaluating advanced placement credentials, although a certain amount of close departmental evaluation is useful in orienting faculty members to the values of the established tests.

If a student entering Harvard scores 3 or higher in three Advanced Placement Examinations, he is given sophomore standing. In addition, the general education requirement is reduced for advanced placement sophomores. In other words, Harvard is willing to say that completion of 3 college-level courses in secondary school is to be accepted in lieu of the 4½ college courses normally taken by a freshman at Harvard. This is justified in view of the fact that a student taking 3 college-level courses in high school would have had a different type of preparation for college from what is normally the case. In other words, the quality of the material studied and of the secondary school instruction is considered most important. Furthermore, a sweeping gift of a year's credit in this fashion removes the student's uncertainty about what academic credit he will get for his advanced placement work. The arrangement at Harvard is clear-cut and enticing, in contrast to the uncertainty and almost grudging release of college credit at some other institutions.

The implications of the Harvard position are far-reaching. What

Harvard seems to be saying is that everything that applies to the freshman course at Harvard can apply to the secondary school. Unlike the regulations at some colleges, a secondary school course is not explicitly required of an advanced placement candidate, but the philosophy of the program would suggest that this is expected. At the same time, this kind of "ex post facto" acceleration would seem to be on firmer ground when it is clearly and specifically indicated that a college level course has been taken in high school.

The statistics on advanced placement at Harvard are impressive. In 1961, the seventh year of its operation there, 540 entering students coming from 215 schools submitted scores on 1,396 Advanced Placement examinations. On the basis of these, 906 awards were granted, 452 candidates received advanced placement, and 134 were eligible for and 102 accepted sophomore standing. The performance of advanced standing students during the years the program has been in use at Harvard has been most encouraging. Of those who graduated by 1961, more than four out of five received degrees with honors and more than three out of four graduated in 3 years.[5]

In addition to bolstering excellent secondary school teaching and improving the education of the gifted, an important objective of the Harvard approach to advanced placement is to free the man rather than to encourage acceleration. Despite the fact that some students skip their freshman year through advanced placement, it is not expected that all of them will want to graduate in 3 years. Advanced placement to the sophomore year will, it is expected, give leisure to the student in his fourth year to do whatever he wishes: to attend courses, to take an additional senior tutorial, to read on his own, to take graduate work. If he wants a degree at the end of 3 years, he will receive one. The dominating motivation appears to be to let the gifted student decide what his program will be.

However, one can detect a certain ambivalence in the Harvard position. On the one hand, the institution has jumped with both feet into a bold, enterprising educational reform that admits outstanding high school graduates into the sophomore year. This is acceleration with deft sureness and uncompromising courage. On the other hand, Harvard has great respect for the 4-year undergraduate program and it is almost unthinkable to some persons that anyone should not want to spend a full 4 years there as an undergraduate. There are obviously more courses available than a student could possibly take. The prospect of 2 senior years is viewed

[5] Edward T. Wilcox, Director. *A Report to the Faculty of Arts and Sciences on the Program of Advanced Standing, 1955–1961*, Harvard University, Cambridge, Mass., Mar. 6, 1962.

as a gain rather than as a possible letdown after an earlier acceleration. This is an aspect of advanced placement to which sufficient attention has probably not been given.

Harvard's ambivalence is no better seen than in the attitude toward the taking of graduate courses by advanced placement students in their fourth year. At the present time advanced placement students may apply these graduate courses toward a master's degree after the first term that they are bona fide graduate students. This may result in a financial benefit to the student, but it is implied that such a scholar must prove himself before the graduate credit is won. In other words, Harvard is taking the same position at the graduate level that some institutions take at the freshman level toward advanced placement students.

It is too early to evaluate the Harvard advanced placement position. However, it is not too early to see that even at Harvard some pressing questions relating to advanced standing are still being resolved. Among them is the attention to the problem of providing advanced placement students with the additional guidance they need in order to take advantage of all their opportunities under this program and a fuller explanation with regard to the options available. Attention is also being given to the effect sophomore standing may have on the entering student's chances for admission to graduate and professional school.

One byproduct of Harvard's advanced standing program has been the attraction of gifted students to Cambridge. Other institutions also have come to see in the advanced placement program a selling point almost as attractive as scholarships and employment offers.

There are many advantages in the sweeping approach toward advanced placement credit. It encourages the high school to intensify programs for gifted students, and it provides a real incentive to the enterprising student with outstanding ability. It gives the excellent secondary school a tangible type of recognition for work well done, and it is a welcome modification of the old lockstep year-by-year progress from kindergarten to the Ph.D. The limitation in giving only a handful of academic credits is that it may tend to encourage overspecialization. On the other hand, academic inflation could result from an overly generous allotment of college credits for work taken in secondary school. In any case, though, it must be recognized that the receipt of advanced placement credit serves as strong motivating influence upon the bright undergraduate who is encouraged to do better work in college than he normally would do.

Another type of advanced standing is available at U. C. L. A.,

through the High School Special Program. Begun in the fall semester of 1958, it allows selected high school seniors to take college work (a maximum of 8 units per fall and spring semester) concurrently with their senior year in high school. To date, the cumulative gradepoint average of these students has been 3.27. One hundred nineteen new students from 13 high schools participated in 1961–62. There will be 14 schools in the program in 1962–63. For the superior high school student who lives within commuting distance of a college or university, this type of arrangement has much to offer in terms of flexibility, and a number of other institutions have established similar programs. In fact, as a result of 1959 legislation, California junior colleges routinely admit to part-time study superior twelfth-grade students who continue to attend high school for at least a minimum school day. This type of flexibility between levels of the educational continuum, called "flexible progression" by the Coordinated Education Center at the University of Pittsburgh, seems to be growing in popularity with the spread of junior colleges.

Early admission.—A few years ago early admission appeared to be the most promising type of flexibility being tried in the colleges. Sparked by grants from the Fund for the Advancement of Education, 11 institutions pioneered in conducting an experiment to ascertain whether tenth- and eleventh-graders with exceptional ability could succeed in college by skipping their last year or two of high school. Although these institutions still admit some "early admission" students, and although a few other colleges have modified their traditional high school graduation requirement for admission, there is now little disposition in institutions of higher learning to recruit eleventh-graders for college. Some type of advanced standing approach appears to be much more attractive than early admission as a flexibility device.

For some years, the institution most interested in early admission seemed to be the University of Chicago. But even the University of Chicago now takes a relatively small proportion of "early admission" students in its freshman classes, compared to earlier years. However, it is apparently pleased with their quality. Reports indicate that what failures have occurred have been for social and emotional, not academic, reasons.

Only a handful of early admission undergraduates are found at other institutions. At Reed College, the faculty neither encourages nor discourages early admission applicants. There are some early admission students at Oberlin, about two or three a year, the same number as at Reed. There is no rule against early admission at Brandeis, but the number so admitted is only two or three a year.

The institution has had mixed experience with early admission and the program is not being emphasized. Harvard takes a few "early admission" students but there appears to be no strong interest in expanding the program, and it has been limited to only the exceptional.

Although Yale takes a few "early admission" students, its approach to early admission is best described as gingerly and hesitatingly unenthusiastic. There are some reservations about its appropriateness, particularly in view of the rapid increase in the popularity of the advanced placement program. It is felt by many that 15- or 16-year-olds are not mature enough for the freshman year at New Haven, and no one appears to be making a special drive to attract more of this type of candidate. The statistics showing the scholastic success of students in the early admission experiment which were detailed in *They Went to College Early*,[6] are not refuted at Yale; they are just overbalanced by other considerations, as they are at many other institutions.

Credit by examination.—The practice of granting credit by examination is older than advanced placement and broader in scope. However, policies vary widely, not only among institutions but among departments within institutions.

Long before advanced placement programs gained popularity, examination credit was used by many colleges as a means of placing particularly able students in advanced levels of different courses, depending upon their special competencies or prior experience. Originally, examination credit was used primarily in such subjects as languages, on which competencies are relatively easy to measure. Experience with the influx of veterans following World War II contributed to expansion of examination credit practices to the point that, instead of handling each case separately, many institutions now have definitely stated policies regarding this form of flexibility. Some institutions permit a student to challenge for examination credit any course on which he shows evidence of competence equal to that of students normally completing the course; others permit examination credit only in certain specified courses. Some permit credit for acceleration; others permit only exemption and enrichment.

Number 9 of the *New Dimensions* series gives detailed information about examination credit in its relationships with, and influence upon, the credit system.[7]

[6] The Fund for the Advancement of Education. *They Went to College Early*. New York, The Fund for the Advancement of Education, 1957. 117 p.

[7] Lanora G. Lewis. "The Credit System in Colleges and Universities," Number 9 in the series on *New Dimensions in Higher Education*. Washington. U.S. Government Printing Office, 1961. 37 p.

The examination credit practices of the 13 institutions represented in this study suggest something of the variety of practices in institutions as a whole. At U.C.L.A., for instance, there are certain courses in which credit by examination is permitted. To many students in the honors program there, this is a shortcut. At San Francisco State College, credit by examination is arranged by permission of the instructor, subject to the approval of the divisional chairman. The student takes his chances, however, because whatever grade he gets on such an examination goes on his record, as it does at U.C.L.A.

One illuminating—though extreme—case at San Francisco State College illustrates the value of credit by examination. A Vice Consul of the Nationalist China Consulate in San Francisco came to the college to take an A. B. degree preparatory to graduate work in international relations. No records of any previous college work were available for deposit with the college; so a full 120 units of work were required for the degree. He graduated in 2 years, with 59 units of "credit by examination" on his record—examinations taken in 7 different fields, under 13 different instructors. The next year, he went on to Stanford University where he received his master's degree with a straight "A" record.

At Yale, students may take anticipatory examinations when they arrive in New Haven, but not many do so. Another permissive feature at Yale is the arrangement by which freshmen may audit a course. If they keep up in the assignments and pass the work, they may expect to be enrolled in the course and receive credit. This is a type of retroactive registration that passes as credit by examination.

In general, institutional policies on examination credit, like those on advanced standing, are related to the prevailing philosophy with regard to acceleration and enrichment. As a flexibility device, credit by examination has been found rather easy to administer because it demands a minimum of change in the established curriculum and the prevailing teaching technques of the institution. In recent years, there has been growing interest in examination credit as a means of validating college-level competencies achieved in connection with television courses, courses at industrial plants, independent study, and other experiences outside regular college curriculums. New York State's recent appointment of a consultant in the area of college proficiency examinations is an example of action growing out of the interest in coordination of institutional practices in this area.

Flexibility Through Course Patterns

The criterion for classifying types of flexibility for discussion in this group is that the primary emphasis is upon special courses or special sections for exceptional students or upon practices which permit the exceptional student to arrange his course load in a manner different from that of average students. In other words, the primary emphasis is upon depth, breadth, and enrichment through the curriculum, rather than upon acceleration of individual progress or upon teaching-learning methods.

In general, these types of flexibility involve greater attention to curriculum planning both by the institution and by the student than do the types of flexibility discussed in the previous group, and some acceleration may be incidental to these programs. On the other hand, they seek to provide flexibility with a minimum of change from traditional classroom teaching-learning techniques, although instructional practices with special groups naturally differ from those with average students.

Special courses and special sections.—Some institutions achieve flexibility by offering special courses for exceptional students. There are provisions for special reading courses at the California Institute of Technology. At San Francisco State College there is a course on readings in the humanistic classics which is open on invitation only. Reed offers a course in general chemistry to a selected group of students who have had good high school records in chemistry and who pass a special examination. In effect, it covers a full year's work in one semester.

In each department at Hiram College, there are special problems courses open to senior majors with a B average. There is also an advanced drama course at Hiram in which students may receive credit for directing plays of their own writing.

It is perhaps in the sciences that special courses for students with marked ability are most productive. Flexibility has always been practiced in the physics department at the University of Michigan, for instance, where it is possible to move a bright student into advanced work when he is ready for it. One method of doing this is by a higher level introductory course which enables a student to go ahead as fast as he can. This has some advantage over advanced placement, it is believed, in that the college has greater control over what introductory work is taught, and it may result in a saving of time for the student compared with the typical college-level advanced placement course in high school.

The physics department at the University of Michigan is of the opinion that it can give an introductory general course at any required level of maturity or sophistication. On the theory that there are disadvantages in having a bright student going immediately into the specialized part of a subject, it prefers to have special introductory courses for exceptional students rather than jump them into advanced work. A capable student, it is believed, deserves more than specialization at first. Bright freshmen, the department maintains, should learn with their age group rather than with the average student 2 years or so older, for a freshman is still a freshman even if he is brilliant.

The Unified Science Program at the University of Michigan has an interesting feature worth noting. It incorporates a research tutorial course in which the participating student serves as a research assistant for a staff scientist. Valuable research experience and a more personal association with the University research program are provided. The student is expected to put in about 5 hours a week for each hour of college credit.

The California Institute of Technology has a special type of flexibility in the freshman physics course. In the laboratory, instead of performing experiments assigned to a group, students work on the experiments they want to do in order to illustrate what they have learned in class. They have access to the laboratory journals of the faculty and, of course, may get help from their instructors when needed. Essentially, however, the traditional approach to experiments has been discarded and, as a result, the better students are stimulated to think for themselves, to strike out on their own without benefit of a crutch in the form of a lab manual. Some students have difficulty adjusting to this. Many learn humility quickly. The brilliant, creative science student, however, proves himself more rapidly in this type of laboratory situation than in the more traditional one.

Other institutions are attempting similar arrangements in their science courses. At Oberlin, both the biology and psychology departments are putting students more on their own in the laboratory. Some institutions make provisions for interested students to do original research in the laboratories.

The Massachusetts Institute of Technology not only has provisions by which a student may do extra laboratory work on his own. There are also opportunities for students to work as part-time assistants. Even freshmen are allowed to do this, but not many of them take advantage of it.

In upperclass laboratories at Reed, individual responsibility and initiative are encouraged in similar ways and research is empha-

sized. Laboratory work may be a part of the senior thesis, and some seniors assist in work covered by research grants.

Letting students teach in the elementary laboratory is another device for encouraging excellence. At Reed, all "lab assistants" in the freshman physics course are seniors. Their work has been rated as highly successful. The science laboratories at Hiram are left unlocked day and night and a student may work there at any time on experiments he wishes to perform.

Science and mathematics departments in other institutions have also established special courses for students with high ability. At Hiram College, for instance, there are three different levels of freshman mathematics.

At Brandeis University, freshmen who choose to take a course in mathematics, physics, or chemistry, in place of the "general education" course in physical science, may commence their college work in these fields at one of several levels. The Mathematics Department offers four courses for freshmen, the most advanced being an honors course exclusively in calculus. Physics offers three introductory courses, the most advanced requiring an elementary knowledge of calculus and covering in 1 year what is normally covered in 2 years of college physics. The Chemistry Department offers a one-semester concentrated course in general chemistry, for those students who are able to handle it.

That flexibility is practiced in professional fields as well as in arts and sciences is proved by the success of the newly revamped course of study in the department of electrical engineering at the Massachusetts Institute of Technology. The sequence of courses in the core program of this department is "intellectually open-ended" and appealing to both students and faculty. Every student takes the same basic sequence, devoid of the old specialization and organized around study of the universality of field phenomena in electrical energy. The laboratory work in the department is organized around a project approach.

The new plan solves the problem of what to do for the superior student, a problem that plagued the department when its courses were organized in the traditional sequence. By putting the above-average students in special sections which take them farther along in the subject, the department is able to give the most promising undergraduates a type of enrichment which, it is believed, has paid off.

In the VI-B course in electrical engineering the approach represents "option in depth" rather than free electives or a heavier than normal program for the exceptional student. In each of 2 groups are 20 to 25 students, admitted by invitation and in most cases

headed toward doctoral study. Students take the same number of subjects as other students but not the same subject matter. They cover the standard material of the course quickly and go on digging deeper. Instructors can try out their new ideas and students can take initiative in learning the subject and in the use of the laboratory. Sometimes students team up with faculty members on research projects. Quizzing is done independently and at greater depth than in traditional courses and there is less attention to grades. The program appears to be working well and student reaction has been highly favorable.

Another area at M.I.T. in which there are special courses for exceptional students is in the humanities. A small group of freshmen (about 20 of the 900 entering students) with unusual training and facility in French are permitted to do the 2 years of required humanities in French. They do not read the same books as the rest of the class, but do parallel readings. This experience improves their excellence in French while at the same time providing them with an understanding of the masterpieces of French literature.

M.I.T. also takes every opportunity possible to infuse language instruction into the scientific and technical environment. During 1961-62, not only could a student have studied his required humanities in French language classes, but he could have studied Dante in a course taught entirely in Italian, and he could have studied electronic circuit theory in a course taught entirely in French. The decision to have a course taught in a foreign language rests solely on the number of students interested in taking it and the availability of a qualified faculty member to teach it. Outside of classrooms, there is a "Russian floor" in one of the dormitories and a "French floor" in another where the students agree to speak only these languages. What is important here is that the students who live in these language areas are not language majors but science and engineering students who wish to maintain or increase their proficiency in the language.

In order to provide for some experience in creativity in the Humanities 1 course at the University of Chicago, studios are available and, at certain stages in the course, each student has an art project in which he tries to paint something and then writes a paper about the experience. The same approach is used in music where the students at one stage in the course try composing. This touch of creativity seems well received.

It is not always easy to distinguish special sections within established courses from special courses for superior students. In the freshman English course at Hiram sectioning is on the basis of ability. Similarly, there are honors sections in Harvard's General

Education program for high scorers on the College Board tests. The California Institute of Technology for many years sectioned courses on the basis of ability and resectioned them at the end of the freshman year.

English composition is a favorite field for *sectioning by ability.* There are special sections for the gifted student in the freshman English courses at the University of Michigan and at Stanford. At the latter institution, these involve an attempt to select more rigorous types of reading materials, to raise the level of work done without increasing the quantity of reading and writing required. Instead of writing weekly papers, students write fewer long ones. They do not receive extra credit for participating in a special section, but there is some feeling that they should.

At San Francisco State College there are some special sections for the gifted in the general education courses. In Humanities 30, for instance, the instructor can select some of his better students, put them on an individual study basis, and meet them in a special class for extra credit. Similarly, one of the four sections in Social Science 20 is designed for the able student and a variety of assignments is tried out during the year. Special sections of freshman English are also available in the second semester for students who show talent in creative writing. These sections are taught by members of the creative writing staff and students do a special kind of writing in line with their interests and talents.

In the required course in the humanities, M.I.T. encourages experiments within the general boundaries of purpose and content described by the steering committee. In one such experiment a few years ago, a dozen of the top students were invited to enter a special section in which each would read twice as much, write twice as much, have to do more independent work, and take his chances on grades. Not 1 of the first 12 declined the risk. Through the 4 years, they remained a superior group, providing a disproportionate share of campus leaders.

According to the dean, who conducted the initial experiment and then turned it over in another term to a colleague, such sectioning is not without certain drawbacks. There were at least 200 students in the freshman class who could have done as well as the dozen, and there was no way to provide 16 such sections or to continue the technique in subsequent related subject matter. Had classes of this type been available to all who seemed to deserve them, most of the bellwethers would have been taken out of regular sections. There is still the moot question whether, in massive courses, the interests of the best students are advanced much by grouping them together or whether lesser students suffer from having the best ones ex-

tracted from the common experience. No one knows whether lesser students would learn to shine more brightly if they were not outdazzled. At any rate, this particular sectioning arrangement in humanities at M.I.T. has since been abandoned for other types of experimentation which are concerned with greater proportions of students.

In the freshman year at Yale there are two kinds of flexibility, vertical and horizontal, in operation. There are no required courses (except in English) which can be identified as specifically freshman courses. Before a freshman ever comes to campus, Yale devotes much time and attention to getting him into the right level of the courses he selects. Freshmen may be placed in 5 levels of chemistry, 3 levels of mathematics, and 6 of English. Freshmen are found in 10 different history courses. This vertical flexibility theoretically means that there should be no overlapping between secondary school and college. It also means that more attention can be given in the freshman year to individual differences. A horizontal flexibility is achieved by permitting a change of program at midyear. This is done in order to accommodate those students who are undecided about their fields of concentration or their vocations. The Directed Studies programs at Yale, which are designed to give qualified freshmen maximum flexibility in designing their total programs, are discussed in a later section.

In general, experiences at the institutions studied indicate that special courses and special sections can be used to provide flexibility with or without major changes in teaching-learning techniques; at the same time, by providing depth, breadth, and enrichment, acceleration is incidental to the student's program rather than a major factor in determining which courses he will take.

Heavier than normal programs.—Some students with a big intellectual appetite prefer to take heavier than normal programs rather than undertake special courses or independent study. Sometimes a heavy program is sought for the purpose of acceleration; sometimes it is simply for the purpose of getting more out of one's college experience. Institutional reaction varies, although heavier than normal programs are generally discouraged for most students. At Oberlin, where the normal load is 15 or 16 points a term, a student with an A average the previous term may carry 18 points and one with a B average may carry 17.

Brandeis University, which has a 5-course program, permits students who have the ability and the interest to petition to take a 6-course load for which they pay extra tuition. Approximately 10 percent of the student body take a heavier than normal program after the freshman year.

Yale also permits heavier than normal programs by petition. A large proportion of the students taking such programs are science majors or premedical students. Yale also permits a student to audit any class if he secures the instructor's permission.

At Harvard, which is on a 4-course basis, students frequently take 5 courses and it is permissible in rare cases for a student to take as many as 6 courses.

At Hiram College, a student with a 3.5 average may take an unlimited number of courses so long as he keeps his work at a satisfactory level. Designed for the superior student, this is called a tuition bonus plan.

At San Francisco State College, heavier than normal programs are permitted by individual advisers. There is no institutional objection to this.

Insofar as maximum load is concerned, Stanford imposes no limit on a student who maintains a B average. A number of students take advantage of this; a few graduate in 10 or 11 quarters.

Reed permits a range from 14 to 17 hours without petition and 18 or more by permission of the Administration Committee for underclassmen and of the Division for its juniors and seniors. Permission is not rare, but it seldom means acceleration.

Although there has been a trend toward year-round attendance in order to complete 4 academic years of college work in 3 calendar years, acceleration by means of heavier than normal loads has had few spokesmen on college campuses in the past. When acceleration by this means has been permitted, it has generally been in spite of or as an exception to the prevailing philosophy of the college. Therefore, although credit by examination and heavier than normal programs may enable a bright, eager undergraduate to speed up the acquisition of a degree, not many students are using these as a means of graduating in less than 4 academic years. For the most part, flexibility through heavier than normal loads seems to have been encouraged chiefly to enable superior students to broaden or enrich their undergraduate programs or to enter sooner upon graduate study.

Early entrance to graduate study.—It is surprising that not more institutions have used the device of permitting juniors and seniors to take graduate level work when they meet the prerequisites for doing so. This is a type of flexibility which has great merit. Of course, on some campuses there is no graduate instruction available. However, at a number of institutions there appears to be a reluctance to permit the able undergraduate to embark on graduate-level work before he has completed the total number of class credits

required for the bachelor's degree, on the grounds that standards may be threatened.

At Yale, a student must secure permission from the Dean of the College and from the Dean of the Graduate School. Graduate work before completion of the baccalaureate is seldom taken in the humanities or social sciences, but is often permitted in the sciences. It is looked upon as something that has to be earned and is discouraged for all but the very few top students.

Some institutions are more permissive. Brandeis permits the election of graduate courses by undergraduates in the science departments where graduate study is considered more promising than independent work in achieving flexibility. There is no particular restriction on the course level which undergraduates may take at Stanford. However, graduate work taken by an undergraduate cannot be counted toward a graduate degree. There is a limited graduate program at Oberlin which offers the master's degree, and graduate students and undergraduates take the same advanced undergraduate courses. The University of Michigan permits undergraduates to take graduate courses, as do Harvard and U.C.L.A.

It is possible that poor articulation between faculties of undergraduate and graduate schools may be responsible for the reluctance of some institutions to provide flexibility by permitting early entrance to graduate study.

Auditing courses and other privileges.—Just the opportunity to audit courses of their own choosing is sufficient flexibility for some undergraduates. Frequently, a student with wide interests likes to "sit-in" on a course in addition to carrying a full program, without having to meet the examination and written requirements of that course.

Oberlin students do a considerable amount of auditing. Sometimes they participate in the discussion and take examinations. No college rules cover auditing. A student makes his own agreement with the instructor regarding his auditing. At Reed, auditing by fully registered students is at the option of the instructor, and occasionally credit is granted *ex post facto* for the work done by auditing students. Students at Brandeis University may audit any course they like, even in the freshman year, with the instructor's permission. At Harvard, auditing is permitted freely. At Radcliffe approximately half of the student body audits courses during their undergraduate careers. This is a simple privilege to arrange and for many students is a well-appreciated opportunity. To prevent indiscriminate and ineffectual auditing, however, some institutions restrict auditing of courses to upperclassmen.

Flexibility through student petition is another means by which

the curriculum can be modified to fit the individual student. At U.C.L.A. a student may petition for a waiver of a degree requirement in order to individualize his course of study, but he must maintain a good record to have his petition accepted.

The individual departments at Stanford can grant specific waivers or modifications of their major requirements. As long as such waivers are granted for good cause, this provides one means for giving the exceptional student greater flexibility. However, in this approach, there is a danger of abuse as well as the potential problem of inconsistency among the departments in the extent of leniency allowed.

Reading periods have been looked upon as another way to get more flexibility into the academic year. Reading periods of a week or more for courses from the freshman to the senior year are common at Reed, at the option of the instructor or the staff responsible for the course. Some advanced courses at Brandeis have reading periods of 2 weeks' duration between the last class and the final examination. In this period extra work is done by the student and additional reading is assigned. The reading period is not scheduled for the purpose of assisting students to cram for their examinations. In practice, however, this seems to be the use many undergraduates make of it at most institutions. Some maintain that the scheduled reading period tends to encourage procrastination among the weaker students, and that those who are alert and who have kept up to date on their assignments may not need such an extended period in order to prepare for their examinations.

At the present time, more in the way of flexibility is being done in the *senior year* than in the other years of undergraduate study. The reasons for this are obvious. Seniors are considered more mature than their younger colleagues. The staff is better able to identify those who could profit from special courses or programs. The unmotivated or mediocre students have for the most part been weeded out of college by the senior year. Although many feel that special courses of study or honors programs are more logical as culminating experiences in the 4 years of study, a growing number of institutions are establishing 4-year continuous honors programs which begin with entering freshmen. Yale's Directed Studies programs might be considered an example of this.

Flexibility Through Teaching-Learning Practices

Included in this classification are those types of flexibility which are the result of the way the student goes about increasing his

knowledge, the prevailing instructional practices of the teacher, or the teacher-student relationships in the learning process. Of all the types of flexibility, the ones in this classification differ most from the traditional classroom recitation-lecture system and from the traditional pattern of required and elective courses. Because they demand a change in the approach to education by both the student and the teacher, they are sometimes considered difficult to achieve by institutions. On the other hand, because they are designed to give every student the opportunity to progress as rapidly and study as deeply and as broadly as his particular needs and abilities indicate, these are considered by many to be among the most important and the most effective forms of flexibility for those areas in which they are appropriate. In general, they give the individual student maximum responsibility for self-direction and initiative to work in accord with his abilities and potential.

Organized independent study.—One of the most productive of these types of flexibility is a method of instruction known as independent study. At the outset, it should be recognized that independent study, per se, may be simply one facet of effective teaching and learning in any class. However, there are many types of organized independent study arrangements, some of which affect only a portion of the student body, others of which apply to the entire group. At some colleges, organized independent study is available in certain courses. At others, it involves individual student projects apart from formal courses. A few institutions require all students to have organized independent study experience in certain areas, on the theory that this method of instruction helps students develop learning habits which will make education a lifelong process. Other institutions permit organized independent study at the discretion of individual teachers. Still others reserve organized independent study for exceptional students, as in the case of many honors programs, or for special courses or areas, as in tutorial programs.

In recent years, there has been growing interest in organized independent study, partly as a result of increased administrative concern for the problem of utilization of resources, partly as a result of wide differences in student characteristics, and partly as a result of increased faculty attention to the implications of expanding enrollments. Some educators believe that the chief contribution of these programs has been in encouragement of more effective teaching and learning across the board, not just in the organized programs themselves.[8]

[8] Robert H. Bonthius, F. James Davis, and J. Garber Drushal, *et al.*, *The Independent Study Program in the United States.* Columbia University Press, New York, 1957. 259 p., is the most recent extensive survey of organized independent study programs.

As a deliberately planned method of providing flexibility, organized independent study programs reach a relatively small proportion of the total enrollment and cover relatively few of the curricular areas. However, as a method of instruction, often in conjunction with more traditional procedures, independent study seems to be gaining significance as a means of providing flexibility in the emphasis upon class time, thereby avoiding the waste of academic talent which results from rigid conformity of individual progress to group class work and group curricular patterns.

The independent study patterns at the 13 institutions in this study are representative of the variety of organized independent study programs at other institutions. The discussion is confined to deliberately planned independent study programs and does not cover that independent study which is simply part of the instructional process in any good teaching-learning situation.

At U.C.L.A. individual independent work is available for the better students through the "199" courses in the different departments. The student enrolling in such courses must persuade an instructor to take him on. As a culminating activity of the course, he must write a type of senior thesis or complete an independent project.

Brandeis has an independent study course, called English 90a and b, which is open only to students of superior ability and with the permission of the departmental chairman. The requirements of the course are simple. The independent study student submits for approval a proposed topic for a paper and a list of texts upon which he will be examined. There are also four half-year courses in independent reading in which each student reads works on an assigned reading list, submits a paper on an approved topic, and takes a final examination. In most of the Brandeis departments independent study is achieved through sophomore and/or junior tutorials, reading courses, and, for approximately a third of the seniors, senior honors theses.

At M.I.T., there is a special problems course in just about every department. These courses allow the student to make a special arrangement with an instructor to work on something of mutual interest under the supervision of that instructor. The work can be laboratory work, library work, or even independent analytical research. Perhaps the institution's best example of independent study is the undergraduate thesis which is required for the bachelor's degree in every major except mathematics. The work load on such a thesis is equivalent to one and a half to two courses.

At San Francisco State College, independent study is permitted

to students who register for a course with a special number or for a course in a semester in which it is not formally taught.

One experiment in independent study is Stanford's Western Civilization course. At the end of the first quarter, an instructor selects the best 10 or 15 percent of his class and invites them to participate in independent study in the course. The students who undertake independent work do individual projects over and above the required work in the course. They are given one meeting a week, a 3- to 4-hour discussion session instead of the regular lecture meetings. They cover the subject matter of the course in half the time, and receive an additional unit of credit for successful completion of independent study.

The problem of follow-through is important here, however. What happens after a freshman has undertaken independent work in Western Civilization, one might well ask? Does he revert to the slower speed of his classmates in other courses? Obviously, the momentum must be continued, the gains made in independent work in the freshman year must not be lost. Experience has led several departments at Stanford to consider relaxing the rigidity of the lecture system by giving the individual instructor the option of reducing the number of formal lectures given in his course.

At some institutions, such as Oberlin, no pressure is put on the individual instructor with respect to how he handles his courses. When the individual instructor in his judgment can improve his course by reducing the number of formal lectures, he is encouraged to do so.

In 1958, the faculty at Oberlin voted a change from an organized independent study program to an honors program which will be described elsewhere. Apparently, the original hope that organized independent study would reach many students was not realized. Only about 20 percent of the student body participated, but those who did take part were favorable in their reaction to it. In the last 3 semesters, work in independent studies had maximum limits of 6, 9, and 12 hours, respectively. There will continue to be independent reading courses available for all students in their senior year.

Faculty utilization experiments have been providing additional incentive for flexibility and for independent study in the curriculum at Oberlin. In one such study, part of the students in freshman courses in mathematics, psychology, and zoology were released from attending the formal lectures for approximately 10 weeks out of the year. This group, matched on the basis of ability with a control group, undertook independent study, reading the same material as the rest of the class. Test results showed no appreciable difference between the experimental and control groups. The impli-

cations of this are strongly in favor of flexibility in formal class time.

At Harvard, opportunities for supervised independent study are provided for selected entering students under the Freshman Seminar Program, inaugurated in the fall of 1959. Applications for participation in this program are cleared through the Office of Advanced Standing; final selection is made in each case by the faculty members concerned, based in some cases on interviews held during registration week. For up to 2 of the normal 4½ courses, the seminars permit selected students to substitute supervised independent study, with the additional possibility of replacing one of the general education courses with equivalent independent work in writing.

Although these seminars have a variety of forms, they have certain common features. In each, a small number of freshmen in close association with a member of the faculty undertake as individuals or as a group intensive work in some mutually exciting field. Study or laboratory facilities are available where appropriate. Credit toward the requirements for distribution and concentration may be granted by the departments concerned and the Committee on General Education.

Some independent study is available to all students at Harvard in the form of tutorial instruction, beginning in the sophomore year. Those who qualify to continue as honors candidates during their junior and senior years may, upon recommendation of their departments, petition the Committee on Advanced Standing for a reduction in the number of courses required for the degree in order to free a portion of their time for independent work. Sometimes this independent work takes the form of expanded tutorial or individual research; at other times course reduction is used for the purpose of doing graduate-level work. This course reduction is not looked upon as a device for acceleration, but rather as a means of improving the quality of independent work done by the honors student.

The senior thesis, which is Reed College's independent study arrangement, is worth particular mention, although the complex Reed climate can hardly be summed up under an independent study program. In the junior year each student at Reed is given a qualifying examination, the purpose of which is primarily to ascertain whether he is ready to write a senior thesis. This examination, which covers both general and specific fields of study, has the effect of focusing the student's work. In his "Report to the Self-Study Committee," Elton Morison evaluated the qualifying examination in these terms: "Though it does put a considerable intellectual and

emotional burden on a student, it is not obvious that many find the burden unbearable; indeed, it is quite possible that the examination can serve as excellent practice in meeting intellectual and emotional burdens of greater weight later on." The junior qualifying examination is considered of value not so much in the weeding out process as in getting across the idea that education is cumulative and that what the student does as an outcome of his formal classwork is not lost or overlooked. The examination has the catalytic effect of helping the student to realize that he must go on his own. It encourages a sense of responsibility and helps engender maturity in the whole student body.

There has been some criticism of the use of qualifying examinations on the ground that an unnecessary disappointment comes with depriving a student of his senior year in the institution with which he is most familiar. However, the experience of analysis and synthesis has been prized by some who find in it a culmination of their higher education and may never be faced with such a challenge again.

The thesis requirement in the senior year at Reed takes up much of the student's time and attention. Theoretically, it represents 4 out of the 14 hours for which he is enrolled. Although the thesis requirement is viewed as of value to all students regardless of their vocational objective, it is obvious that the experience is particularly useful to those going on to graduate school.

The mechanics are simple. The student selects, with the advice of a faculty member whom he has picked, a topic on which to write. He then meets with the faculty member as frequently as is considered necessary and embarks on an independent piece of writing which is due in May of his senior year. The thesis becomes the most important part of the student's program, the climax of his 4 years at Reed. After the thesis is submitted, a 2-hour oral examination is held by a faculty committee. Although considered a formality by some, this examination is usually taken seriously by both students and faculty, and searching questions are asked. The purpose of the oral examination is to make the senior thesis more than just an exercise in writing. Nevertheless, the oral examination at the end of the senior year seldom results in failure of the student.

In the sciences the senior thesis is frequently a piece of laboratory research, sometimes something in which the individual faculty member himself is interested. In chemistry a few outstanding students are able to start their senior theses in the middle of the junior year.

It is reported that the theses which are written are sometimes better than average master's essays. The requirement gives the

student something to look forward to, a goal, a climax of his undergraduate career. Its relation to flexibility is obvious. By setting different levels of expectation for students with different levels of ability, it is possible for even the C student to find his level of independent work and perform adequately. At the same time, the genius can be challenged by a more difficult thesis assignment.

Reed also has independent reading courses in most departments, thus providing another type of flexibility of the independent study type. In an experiment to introduce independent work projects in all courses, the instructor in each course takes a minimum period of 1 week per semester in which special work, group projects, extra papers, conferences, or tutorials are scheduled instead of formal classroom attendance. In some cases the period of out-of-class independent work is as much as 4 weeks a term. The independent work projects in each course are designed both to conserve instruction time and to stimulate student initiative. They also, of course, reflect vigorous faculty interest in experimentation and in improving upon the traditional lecture course that has long been the hallmark of American higher education.

There is a strong feeling on some campuses that there is no such thing as independent study, that programs such as the ones described might well be called "individual" study since they require the assistance, advice, and cooperation of a faculty member. Some administrators believe that the staff requirements for independent study are too expensive to justify. There is also some feeling that independent study is a fad, made attractive in these days of rising enrollment as an easy solution to the problem of bulging classrooms and pending teacher shortages. There is some feeling among segments of college faculties that most students are not mature enough to take advantage of the opportunities of independent study and that nothing can really take the place of the lecture Mondays, Wednesdays, and Fridays at 11. Those who hold this point of view take the position that the place for the undergraduate is in the classroom rather than the library, listening to a lecture rather than reading and writing on his own; that the important role of the college teacher is as a stimulator of young minds rather than as a source of encyclopedic information or an editor of ill-considered, hastily written adolescent prose.

Be that as it may, the critics of independent study may tend to overlook the deficiencies of the traditional lecture system and to minimize the capabilities of a portion of the undergraduate student body. Independent study is as old as colonial times, and today approximately a quarter of the 4-year colleges and universities have

some type of independent study plan.[9] Although organized independent study programs seem to have touched a relatively small proportion of the total enrollment, the teaching-learning techniques fostered by the independent study type of instruction seem to be an effective way to achieve some measure of flexibility in course structure and class time and to encourage students to greater achievement. However, if independent study is to function well, there must be adequate library facilities available, and teachers must use this instructional system as a result of conviction rather than as a result of administrative decree.

At this point, it is important to consider whether the traditional procedures in college poorly prepare students for independent study or even discourage independent study practices. A freshman comes to college full of enthusiasm, expecting something new and different. His enthusiasm may be dulled by attendance at dull lecture classes, his love of learning diminished if he is forced to follow a slow routinized pace. Perhaps the strategy to try is to start with freshmen and give them independent study assignments at the very beginning, before they get bogged down with routine formal course work. This has been done in some freshman honors programs. To the extent that it can be proved that independent work has merit for freshmen, then it can be applied at all levels.

Honors programs.- Of all the special arrangements to get more flexibility into the curriculum, honors programs appear to have won most general approval and to be the most productive at this time. In fact, honors programs usually include various combinations of the types of flexibility discussed in this booklet, with special emphasis upon service for superior students. In many institutions, certain types of flexibility are used first with honors students and later extended to other students to the extent that they seem appropriate.

Because honors work is confined primarily to superior students, it wins the approval of those critics of independent study who hold that average students are not prepared for independent work. The fact that honors work is now offered in many cases in 4-year programs and sometimes in 3-year programs, rather than traditional upperclass and senior-year programs only, wins the approval of those who favor the equivalent of a multiple track approach with liberal amounts of independent work early in the college career for those who can benefit by it as a basis for developing a continuing momentum in their learning. Many persons view honors work as being excellent for the able student regardless of vocational objective or field of specialization.

[9] Bonthius, Davis, Drushal, *et al.*, *op. cit.*, p. 28.

One of the most significant developments since 1957 has been the establishment of the Inter-University Committee on the Superior Student, whose newsletter, *The Superior Student*, reports on various honors programs, especially those in publicly supported institutions, where there appears to be an increased interest in operating special programs of study leading to the awarding of bachelor's degrees with honors. The 1960–61 "Honors Inventory," which is a progress report of ICSS and not an exhaustive survey, lists 196 institutions with definite operating programs and 43 with proposed programs. More than half of the operating programs were inaugurated since 1958. Approximately half or more of the institutions in the "Honors Inventory" indicated specific provisions for one or more of the following: independent study, senior thesis or research project, advanced placement, comprehensive examinations, requirements waived, credit by examination.[10]

The Inter-University Committee on the Superior Student makes the following recommendations regarding the major features of a full honors program:

1. Identify and select students of higher ability as early as possible. This involves far closer cooperation than has hitherto been the case with high schools and preparatory schools. The proper uses of predictive techniques, past records, entrance tests and interviews, and studies of aptitude, motivation and achievement are now being explored and much experience is being canvassed.
2. Start programs for these students immediately upon admission to the college or university and admit other superior students into these programs whenever they are later identified by their teachers.
3. Make such programs continuous and cumulative through all four years with Honors counseling especially organized and equally continuous.
4. Formulate such programs so that they will relate effectively both to all the college work for the degree and to the area of concentration, departmental specialization, pre-professional or professional training.
5. Make the programs varied and flexible by establishing special courses, ability sections, Honors seminars, colloquia and independent study. Advanced placement and acceleration will serve in a contributory role.
6. Make the Honors program increasingly visible throughout the institution so that it will provide standards and models of excellence for all students and faculty, and contribute to the substitution of an "Honors outlook" for the "grade outlook."
7. Employ methods and materials appropriate to superior students. Experience has shown that this involves:
    a. Bringing the abler students together in small groups or classes of from 5 to 20 students.
    b. Using primary sources and original documents rather than textbooks where possible.

[10] "Honors Inventory, 1960-61, Programs and Provisions in Four-Year Colleges and Universities," *The Superior Student*, Jan. 1961. Under the editorship of J. W. Cohen, this newsletter is published monthly during the academic year by the University Honors Information Service of the Inter-University Committee on the Superior Student, University of Colorado, Boulder, Colo.

c. Less lecturing and predigesting by the faculty of content to be covered; approaching selectively the subject matter to be covered; discouraging passive note taking; encouraging student adventure with ideas in open discussion—the colloquium method with appropriate modification of this method in science and professional schools.

d. Supplementing the above with increased independent study, research and summer projects.

e. Continuous counseling, in the light of the individual student's development, by teaching personnel, not by full-time nonteaching counselors.

f. Giving terminal examinations to test the Honors results.

8. Select faculty qualified to give the best intellectual leadership to able students and fully identified with the aims of the program.
9. Set aside, where possible, such requirements as are restrictive of a good student's progress, thus increasing his freedom among the alternative facets of the Honors and regular curriculum.
10. Build in devices of evaluation to test both the means used and the ends sought by an Honors program.
11. Establish a committee of Honors students to serve as liaison with the Honors Committee or Council. Keep them fully informed on the program and elicit their cooperation in evaluation and development.
12. Use good students wherever feasible as apprentices in teaching and as research assistants to the best men on the faculty.
13. Employ Honors students for counseling, orientation and other academic advisory purposes in the general student body.
14. Establish where possible an Honors center with Honors library, lounge, reading rooms and other appropriate decor.
15. Assure that such programs will be permanent features of the curriculum and not dependent on temporary or spasmodic dedication of particular faculty men or administrators—in other words, institutionalize such programs, budget them and build thereby a tradition of excellence.

As pointed out by ICSS, the inauguration of an honors program need not await full implementation of all of the above features but can be started where feasible and move in the direction of a full program. Honors programs at the 13 institutions in this study seem representative of the variety of such programs at other institutions.

One of the most interesting interdepartmental honors programs in operation is that offered in humanities at Stanford. A student enrolled in this program takes work in a wide area of the humanities and also completes the major requirements in a single department. He graduates with a major in a departmental subject and with honors in humanities. The program includes courses in humanities in excess of Stanford's general studies requirement, plus certain special seminars, four in the junior year, two senior colloquia, and a senior thesis which is an extended piece of critical

writing and which is considered the most important part of the requirement. More than 100 students annually are enrolled in the honors program in humanities.

Oberlin has reinstituted an honors program to replace its organized independent study arrangement. Departments invite students to undertake honors work in the middle of the junior year, during which they may "try out" for such distinction by doing individual work which is closely supervised and directed. The successful participant in the program receives the A.B. degree with honors in the subject in which he has concentrated.

Each department determines its specific requirements for honors, including whether or not honors students are released from certain course work. An Honors Committee supervises the program and passes on to the faculty the departmental recommendations for the program. Between 10 and 20 percent of the senior class undertake honors work. Through this program and the increased flexibility in the number of required class meetings in general course work of all students, Oberlin hopes not only to preserve all the values of the organized independent study program which it has abandoned, but also to enlarge independent study opportunities for those who can profit most by them.

The College of Literature, Science, and the Arts of the University of Michigan has had a program of departmental honors since the 1920's. In 1957, however, in recognition of the fact that departmental honors provisions came too late in the undergraduate career to stimulate able students to higher achievement, a College Honors Program was established in which freshmen might participate. This was instituted after a year and a half of preparation, committee work, and faculty discussion. Approximately 100 of the brightest freshmen in the college, representing the top 5 percent of the 2,000 new students, were invited to participate. Selection was based on standing in the top tenth of high school class and on College Board and placement test scores. These freshmen were designated honors students, were provided with special counseling, and were enrolled in special sections in some courses. In addition, special courses in some fields were instituted. Most of the group found themselves in two or three honors sections. In psychology and sociology, special discussion sections of the courses were set up for them. Efforts were made to give them individualized attention. In addition, three inter-disciplinary college honors courses, one each in the humanities, the social sciences, and the natural sciences, were made available to the group. At the end of the first term, another 45 students with good records were admitted to the program.

At Michigan, an Honors Council with representation from each department discusses policy questions connected with the college honors program. There is also an executive committee of the Council which has authority to approve the details of operation. On the whole, departments have assigned senior staff and experienced junior staff to teach the special honors sections. A meeting of all instructors involved in teaching honors sections is held in the fall to provide briefing about the program's place in the enrichment of the superior student's education. Instead of remaining in the regular counseling program, the students enrolled in the honors programs receive special counseling by faculty members who volunteer to assist an average of 10 such honors students each.

The College Honors Program does not replace the various departmental honors plans in the junior and senior years, but supplements them at the freshman and sophomore level—students going from the College Honors Program into one of the departmental honors sequences. There were problems initially connected with dovetailing the new operation with what the departments were already doing in the way of honors work. Implicit in the attention given to honors at the University of Michigan is the need to identify promising students early in their collegiate careers. Both faculty and students have been favorable in their reaction to the College Honors Program. The few students who have not done well seemed to have had emotional problems rather than academic deficiencies.

Yale has four kinds of special or honors programs: the scholars of the house plan; small seminars for honors candidates in their major fields of study; sophomore seminars, in the residential colleges, which may be taken in lieu of a regular lecture class; and the directed studies program of general education which is limited to the top quarter of the student body. All of these programs are well supported budgetarily. The directed studies program, for instance, has an annual budget of over $130,000.

The scholars of the house plan differs most from typical honors programs and Yale takes great pride in this device which permits outstanding seniors to be on their own. They are permitted to audit any course, are freed of class attendance requirements, and have a unique status in the eyes of the faculty. This device appears to work best in the creative arts or in fields cutting across the traditional disciplines.

Included in the cost of the scholars of the house honors program at Yale is one-third of the salary of a director, plus a drawing account which pays for certain scheduled meals of the honors seniors. The faculty member who serves as an adviser to honors candidates also receives a stipend. Although the number of stu-

dents enrolled in this honors program is small, it apparently has considerable influence on the campus.

The general honors program at Yale has several worthwhile features. An honors candidate is assigned to an adviser who meets with him once or twice a week throughout the year. Honors students have at least two seminars. In their senior year, each writes an essay. Some of these have been of such quality that they have been published.

Students in the scholars of the house program meet for dinner every other week, one or two of their number reporting on their progress. There are less frequent dinners for honors students in divisional majors.

In the directed studies programs at Yale, a qualified freshman may choose a carefully designed total program, taught mainly in the seminar method, with opportunity for an unusual amount of independent work. The purpose of the directed studies programs is twofold: (1) to introduce the student to an advanced level of study in his first year and so prepare him as speedily as possible for independent work in upperclass major and honors programs, and (2) to take full advantage of the opportunities for understanding relationships among fields of study which arise from a carefully organized combination of specially designed courses. Implicit in both purposes is the goal of providing a broad and firm basis for later specialization.

For a special limited group of freshmen with exceptional preparation, studies of the first year take the form of interdepartmental studies, emphasizing (by a variety of formal and informal techniques: discussions, essays, tutorials, research projects, laboratory procedures, audiovisual aids, independent work, etc.) the interrelationships of literature and the visual arts; of history and philosophy; of the sciences and mathematics. Freshmen in this group who successfully complete the work of the first year in the program of interdepartmental studies may normally achieve the B.A. in 3 years, if they so desire and make application to the Dean. All directed studies freshmen who complete the work of the first year *with distinction* are eligible for similar consideration.

Freshmen in the programs who wish to continue directed studies in the second year must make application and be approved by the Committee on Curriculum. In the second year, the principle of interdepartmental studies is applied, with special reference to the twentieth century, its values and its problems. In addition, each term one philosophical precept of 20 lectures by distinguished scholars is offered. The precept represents one of the three major

divisions of human activity—the humanities, the social sciences, the natural sciences.

At Hiram College, the 4-year general honors program planned to go into effect in September 1962 has the following provisions: Between 25 and 30 members of each entering class are to be identified as candidates for honors prior to registration. Those students who have attained an average of 2.75 at the end of the freshman year and who continue to be motivated for honors work may continue in the honors program, and others identified as superior students (average of 3.0) may be admitted at the beginning of the sophomore year. Similarly, a 3.00 cumulative average is required at the end of the sophomore year for retention in the honors program and a 3.25 cumulative average qualifies "late bloomers" to enter the program at the beginning of the junior year. A passing grade in the honors colloquium is required for retention in the program at all levels.

Each section of the honors colloquium is to consist of no more than 15 students and will be assigned 3 faculty members who will remain with the group for the entire year to lead discussions of issues and ideas contained in a series of important books. Brief synoptic papers based on the readings will be submitted by each student at each session. Candidates for general honors who have participated in the program for the entire 4 years will be expected to have taken not fewer than six of the honors courses available during the first 3 years in addition to the honors colloquia. All honors courses meet general distributional requirements for graduation. This requirement will be prorated for honors candidates who enter the program late. In the senior year, each honors candidate takes the course in Senior Liberal Studies. Candidates for general honors may be graduated *cum laude* if they have a cumulative grade-point average of 3.25, and those whose senior honors papers are deemed especially worthy by the Honors Board may be graduated with special honors.

At Brandeis University, an honors program is available in each department. A student with a B or better average who becomes a candidate for distinction is obliged in most departments to write a thesis. This usually takes the form of a substantial paper and is the result of an intensive study. The requirements for honors work in the science departments are quite flexible. In some cases graduate level courses are taken by the honors candidate. The faculty encourages promising students to undertake honors work, and 25 to 30 percent of the student body have done so in the past. Those students who do are usually those who have serious graduate school ambitions.

M.I.T.'s department of mechanical engineering has an honors course which is worth mentioning. At the end of the junior year the top 7 percent of the class, those with the greatest professional promise, are invited to enter the honors course. If they accept, they commit themselves to 2 years of study after which they receive the B.S. and the M.S. degrees simultaneously. In their fourth year, instead of writing a thesis as other students do, they take more mathematics and other course work preparatory to the fifth year, which is primarily engineering science. The student has a great deal of freedom in selecting his courses. In addition, the honors students are invited to dinner meetings at which guest experts in the humanities discuss nonengineering subjects. There has been favorable student reaction.

Admission to the Honors Course extends two privileges to the student: it allows him to combine his senior and master's theses into a single, longer work, and it essentially guarantees admission to graduate school, and thus enables him to plan a coordinated program through the master's degree. The Department of Aeronautics and Astronautics and the Department of Metallurgy have honors courses similar to those in the Department of Mechanical Engineering.

In addition to the undergraduate honors course, the Department of Mechanical Engineering also has the Advanced Undergraduate Program. At the end of the sophomore year, students are selected who, the department feels, would benefit by direct substitution of graduate courses for most of their remaining undergraduate courses. These men are also automatically members of the Honors Course. However, the fact that they have been put into graduate courses earlier in their academic careers means that by the time they acquire a master's degree they are probably a year or more beyond the master's level in terms of course work and are in a unique position to pursue further graduate work.

Since 1951, the College of Letters and Science at U.C.L.A. has administered an honors program for the benefit of its superior students. The chief purpose of this program is to release the exceptionally able student from the pace of study adapted to the average U.C.L.A. undergraduate. Participating students are given library stack privileges and are allowed to meet many of their general degree and major department requirements by (1) taking courses more advanced than the usual ones, including graduate courses taken for undergraduate credit, (2) receiving credit for courses taken by examination without class attendance, (3) taking courses on a "passed-not passed" basis, and (4) engaging in independent study or research. In the spring of 1962, there were

231 students in the program. The departments of English, History, Mathematics, Political Science, and Psychology now have special honors budgetary support and have established departmental honors programs which include small, seminar-type honors classes.

In September 1957, 95 new U.C.L.A. students who scored high in general scholastic aptitude were invited to participate in counseling and testing services offered by the Student Counseling Center. The program has been continued with more restrictive selection processes. Members of these groups are closely followed to see what effect such a counseling, interviewing, and testing program will have on gradepoint average, general adjustment to college work, and progress toward a degree. Students in the program have been given special course and curriculum privileges similar to those for members of the honors program. As of February 1962, 374 students were registered in this program.

Each semester, beginning in September 1957, a number of entering U.C.L.A. freshmen have been designated as entitled to Honors at Entrance. The Admissions Office makes the initial selection based solely on academic performance of the students in high school. The college provides special counseling facilities for these students. In the spring of 1962, 562 students who were selected for Honors at Entrance were in attendance at U.C.L.A. in the College of Letters and Science.

When a student enters a field of concentration at the beginning of his sophomore year at Harvard, he is automatically considered to be an honors candidate unless his field is the natural sciences, architectural sciences, or music, which are not considered well suited to the tutorial method characteristic of the honors program at Harvard. The student meets regularly with his tutor, either alone or in a small group and usually in his own House. Those who qualify at the end of the year to continue as honors candidates go on working with their tutors in their junior and senior years and may receive course reduction and do independent work. In the senior year, each honors candidate writes a thesis for which he has done intensive research under his tutor's supervision. It is estimated that these seniors spend between a quarter and a third of their time on the thesis, which gives them an opportunity to learn what a research problem involves and requires them to make their own analyses. The thesis experience is considered excellent preparation for writing a master's essay or a dissertation. Theses are read by at least two faculty members and, in the case of students considered for the degree summa cum laude and for those whose records are marginal, there is an oral defense of the research paper.

In assessing honors programs, the advantages appear to out-

weigh the few disadvantages. One important byproduct of an effective honors program is that the individual student receives more personal attention from the faculty than he would in a standard course of study. Some students, however, see themselves in a highly competitive situation and subjected to various anxieties. If additional demands are placed upon them in an honors program, many of them believe they must weigh the risks along with the gains. In the face of this reluctance, some incentive is necessary both in secondary school and college to develop an esprit de corps among individuals of ability and promise.

The University of Michigan in its College Honors Program has endeavored to develop a spirit among its honors freshmen by allotting them a special reading room in the new undergraduate library and by encouraging them to take an active interest in the shaping of the new honors plan. Honors students have much in common. Encouraging them to meet together can serve to foster this needed esprit de corps.

It is equally important that faculty members and administrators express an interest in the student who has embarked on special programs or honors work. The encouragement of the classroom teacher is still the most important ingredient in the success of special plans for the exceptional student.

The senior thesis in an honors program seems to be an especially appropriate requirement for the exceptionally bright undergraduate, particularly for those planning to do graduate work. However, it must be remembered that some capable students can best demonstrate their competence in other ways, that abilities of some may lie in directions other than writing. As a type of flexibility for the superior person, therefore, the senior thesis should not be considered a universal solution to the problem.

In the past, there appear to have been several reasons why more students were not willing to do honors work. Apparently some bright students shied away from the honors opportunities because they were concerned over maintaining as high an academic average in college as possible and feared that the demands of honors work would prevent them from getting high grades. It is possible also that some faculty members have been reluctant to take on additional honors candidates because of the extra work involved. As more and more programs have been established, and as climates appropriate to them have developed, the negative considerations have generally been replaced by genuine interest and commitment, both by students and by faculty. However, some students of high ability report that they feel the concentration required by honors

programs restricts their programs too much, and that they prefer to sample areas and professors they otherwise would have to miss.

Tutorial work.—One curricular variation outside the traditional formal course requirement which is closely related to independent study is the tutorial plan which a number of institutions have adopted to advantage. In a tutorial arrangement the student does considerable reading and writing on his own but under the more or less close supervision of a faculty member. The consultation between student and teacher on an individual basis, or in small groups, is considered extremely valuable by those institutions which have adopted tutorial programs. Although some institutions prefer the colloquium or seminar type of instruction because it is less costly and provides opportunity for group discussion, others prefer tutorial programs for providing a certain type of tailor-made higher education for the serious minded, well motivated student, especially for certain types of specialization. Tutorial programs at the institutions in this study seem typical of those elsewhere.

One type of tutorial arrangement is represented by the system at the University of Michigan where in some departmental honors programs a student is assigned to a tutor in his senior year. The tutor, who has no more than one student whom he carries over and above his regular teaching and research load, usually sees the student once a week in order to help him with his essay and to coordinate the work of his junior and senior years.

At the University of Chicago, the tutorial program is designed for the student who wishes to pursue more thoroughly an individual interest, discovered during his first years in the college, that does not correspond to any one field of academic specialization. Although those in tutorial study usually have good academic records, the program is not designed exclusively for the brilliant student. It is designed rather for the person who wants to follow his own special line of inquiry while developing skills and acquiring perspective in the liberal arts and sciences. Originally, the tutorial program was thought of as a terminal experience, but it has also fulfilled another objective, namely to enable a student to see whether he likes the sort of independent work required in more advanced scholarly pursuits.

Not later than the end of his sophomore year in the college, the tutorial candidate outlines his individualized program in consultation with the Council on Advanced General Studies. The program must include a year of work distributed broadly over the curriculum and a year of work divided in approximately equal proportions among the writing of a bachelor's essay, the taking of courses

having special interest, and reading and other investigations planned in consultation with his tutor, but not subject to direct testing by the Council on Advanced General Studies. The individualized tutorial portion of a student's program may be divided between his last 2 years in the college, or it may be concentrated in the last year, depending upon the nature of the special interest and the stage in his career at which the interest becomes fully defined. In any case, the major part of his time in his last year must be devoted to independent work supervised by his tutor.

In the year of work which includes the preparation of the essay, the taking of special courses, and reading and other investigations not subject to direct testing, the latter portion of the program which has been called "planned intellectual leisure" or "the free third," may take the form of additional course work, collateral reading, or participation in some other kind of intellectual activity. Prof. William Bradbury, writing on "the free third" of the tutorial plan has asserted that a principal reason for including it in the program was the belief that it might contribute to the student's habit of choosing intellectually significant leisure activities and of viewing all his activities as offering scope for intelligence. Opinion is divided as to the success of this part of the program.

In addition to writing an essay in his tutorial study at Chicago, the student takes a 1-hour oral examination and a 6-hour written examination which ranges over a wide field and which is constructed for that particular student by the Council on Advanced Tutorial Studies. The tutor normally serves as one of the panel of three who prepare and grade these examinations. Members of this same panel also serve as readers of the bachelor's essay. When he graduates, a tutorial student receives the Bachelor of Arts in Tutorial Studies.

In practice, a student enrolled in the tutorial at the University of Chicago is assigned to a faculty member who agrees to become his tutor. Theoretically, the student spends between 1½ and 2 hours with his tutor every other week. However, since the tutorial activity is engaged in by a faculty member in addition to his regular teaching load, it is done as a labor of love. Even though most instructors consider tutorial work a privilege, there is a limit to what can reasonably be demanded of any staff member. For this reason, some financial and professional recognition of the tutor's contribution would have to become an inherent part of any tutorial program if it were expanded to include a large proportion of the student body.

The tutorial program at the University of Chicago is small and probably should remain so. Some students with graduate ambitions

are deterred from entering it because they fear that taking it may adversely influence their chances for admission to graduate school. Some departments, it is evident, are likely to consider those in the Chicago tutorial program as somewhat deficient in the quantity of specialized preparation they take. As a terminal intellectual experience, particularly for the nonconformist or the student with interests that cut across two or more disciplines, the tutorial plan is probably quite satisfactory. As Bradbury has reported, "those who have served as tutors agree that there is no comparable way of learning about students, and . . . the tutorial system is ideally adapted to achieving the best results of which each student is capable."

While Chicago's tutorial program is limited to a few students, Harvard's program has traditionally been considered a compulsory experience. It was established more than 45 years ago in the belief that tutorial work enables a student to broaden and deepen his understanding of his own field, supplements his course work, gives him an opportunity to pursue topics in his field, and provides an ideal basis for a close individual relationship between teacher and student. At the beginning of his sophomore year, each student is assigned a tutor in his field of concentration unless that field is one of the sciences which is not well suited to the tutorial method. Honors candidates continue working with their tutors in their junior and senior years when they may do considerable independent work in lieu of course requirements.

The initial tutorial experience at Harvard is characterized by complete informality. The degree to which the student makes use of it is left largely to individual initiative. As a result, there is a wide range of quality in the work done. Failure of a tutorial does not prevent a student from getting the degree; on the other hand, the tutorial system provides highly individualized instruction for all who take advantage of it and encourages the student to read and think for himself, to express his own ideas both in writing and orally, and to have his ideas criticized by fellow students and teachers.

At Harvard, all entering students are considered honors candidates, subject to passing qualifying examinations in the field of concentration at the end of the sophomore year. Those who pass these examinations continue as honors candidates and receive additional tutorial work. Another qualifying examination is given at the end of the junior year, and a comprehensive examination covering the whole field of concentration is given in the spring of the senior year. In the senior year, each honors candidate writes

a thesis for which he has done intensive research in his tutorial program.

Apparently, the intention at Harvard is to stimulate interest in honors work by giving all students experience in the tutorial program in order to familiarize them with this type of highly individualized instruction and challenge them to continue in it. Although this approach may widen the gap between honors and nonhonors students, it should result in increased and more purposeful participation in honors work. At present, about 50 percent of the students are honors candidates.

In general, there is one troublesome aspect of the tutorial system which must be considered. The tutor may be of any faculty rank, from teaching fellow to professor, and the expense of this highly individualized instruction for large numbers of students may result in relegation of the bulk of the tutoring to junior staff members. At the same time, good tutoring, because it is a relatively private operation, is not likely to receive as much recognition as outstanding lecturing. For this reason, some of the better or more ambitious teachers may prefer lecture courses to tutoring.

The essay which is written in the tutorial program can best be described as a piece of writing of a liberally educated person addressed to a liberally educated audience. It is not supposed to be a facsimile of a master's essay. There is sometimes a tendency for the student to attempt to do too much in his essay. Frequently, the tutor must curb the scope or extent of the written project. However, this is a minor difficulty, and the fact remains that there is probably no more ideal way in which to learn to write.

Other Types of Programs

Seminar-type programs.—The senior colloquia recently established at Stanford are among the special devices available for seniors. A.B. degree candidates beginning with the class of 1960 are required to take two senior colloquia in fields outside their major. The only exceptions are students entering law or medical school after 3 years and those following interdepartmental honors programs. These colloquia, taught by senior faculty members who select subjects somewhat removed from their own specializations, are kept small in size and demand considerable student participation. They are centered around an important contemporary issue or a major work or writer of abiding significance and designed to stimulate serious thought on a provocative subject through the reading and discussion of challenging and sophisticated materials. They also demand a high level of teaching, for the instructor in a

senior colloquium is not able to hide behind dog-eared lecture notes or a facade of lofty objectivity. Essays are required instead of a final examination.

Some of these senior colloquia were originally offered on a voluntary basis, preliminary to establishment of the program. In the colloquia such topics are used as: "Discovery, Invention, and Creation," "Freedom of Speech," "The Making of Decisions," "Man and the State in Modern Drama," "Faith and Scepticism in English Writers," and "Genesis and Geology." Many of the faculty at Stanford apparently regard the colloquium requirement "as the most challenging and significant of the changes introduced" recently at the institution.[11]

The staff participating in these colloquia are likely to profit as much as the students, since this teaching assignment is a novel intellectual demand on them. It should result in a widening of perspectives, a breaking forth into new frontiers. Only time can determine the extent to which Stanford can meet the pressing staffing demands which this requirement imposes on the faculty and whether staff members will be satisfied with the professional recognition given for participation in this new endeavor.

The senior symposium at Reed is another special program worth mentioning in detail. This course, taken on a voluntary basis, is divided into sections of 12 students each. Each section is taught by two or three professors. The general purpose is the exploration of value problems (social and psychological, moral and religious, scientific and artistic) that confront contemporary man, through the critical analysis of books that take significant positions on these problems. Students read a book a week in a wide range of fields throughout the year. The class meets one evening a week and discussion is at a high level. The course is considered especially valuable for the science majors at Reed, for it gives them an important breadth of study to supplement the depth of their individual specialty. During a typical academic year, the readings ranged from Miller's "Death of a Salesman" and Whitman's "Democratic Vistas" to Niebuhr's "The Meaning of Revelation" and Whitehead's "Concept of Nature." Philosophical works, sociological treatises, fiction, and scientific books are about equally represented. An important criterion for the inclusion of any title on the reading list is its "teachability" and its usefulness for provoking discussion of value problems. The senior symposium is considered one of the major strengths of the Reed program.

[11] Robert Hoopes and Hubert Marshall, *The Undergraduate in the University*, A report to the Faculty by the Executive Committee of the Stanford Study of Undergraduate Education, 1954-56. Stanford, Calif., Stanford University Press, 1957. p. 55-56.

In "Undergraduate Seminars" at M.I.T., which were first offered in September 1961, small groups of freshmen are brought into seminar contact with established senior members of the faculty. Lists of topics displaying areas of faculty interest are provided to help the student select a particular seminar from the wide range of topics available. To enhance the informal environment, letter grades have been waived in favor of "pass" or "fail." During the first term, 25 percent of the class had a seminar as an elective; the second term, 31 percent did. Groups were kept small, averaging between 5 and 6 students per seminar. About a third of the groups did some work in the laboratory as part of their investigations. It is expected that these seminars will have a lasting effect on career direction and on the vigor with which the participants later pursue independent work as upperclassmen.

Still another approach can be seen in the preceptorials offered at the University of Chicago. Certain preceptorial classes are given in which a student tackles a special problem based on the materials of a course in general studies. He meets in a seminar and writes an essay in the spring quarter. The essay is the equivalent of between one-half and two-thirds of the comprehensive examination in the course. Preceptorials are limited to those students who have all-round good records.

The single course plan.—Thus far, all the special programs and courses described have fallen into the traditional framework of the academic year in which students carry four or five courses simultaneously. An unusual experiment known as the single course plan has been in operation at Hiram College and is worth examination as a variation in flexibility. At Hiram, until the program was modified in 1958, every student took only one course and in this fashion completed five courses during the year. The single course plan was designed to enable the undergraduate to learn a college subject freed from the distractions of other courses. By concentrating a year's work into 7 weeks, it was thought that the student's learning would be enhanced.

The single course plan has several obvious advantages. If uninterrupted intensive study has any value, the single course plan encourages it to the fullest. Students can enter and leave the institution at more points during the academic year. It appears to be especially useful for the rapid learner on the one hand and for the weak student on the other. It is easier to schedule off-campus trips during the year under the single course plan. Indeed, it is even practicable to plan trips abroad for classes under the single class plan.

Unless an institution has a highly homogeneous enrollment, the disadvantages of the single course plan appear to outweigh its advantages when it is used exclusively. The problems of adjustment to college are intensified under it. Freshmen find it difficult to adjust to the rapid reading pace required in a single course arrangement. It limits the amount of extra work a student can take. The undergraduate cannot very well carry a heavier than normal program. It takes time to learn some skills. Some students cannot master all of the subject matter of a course in 7 weeks. The assimilation is particularly difficult in courses with heavy reading lists. Furthermore, if a student misses a few days because of illness, it is difficult for him to catch up. The plan appears to be expensive administratively.

In 1958, the faculty at Hiram voted to modify the single course plan to give freshmen the traditional type of 5-course program, and limit the single course plan to the other classes. Each term was lengthened to 8 weeks and there are 4 instead of 5 terms in the academic year. The Hiram faculty hopes that this revision will enable it to preserve the best features of both systems. It is expected that the revision should improve the curriculum for the superior students and at the same time assist the weaker ones in getting accustomed to college-level courses. The new plan also should provide for a greater flexibility in the course offering, a greater variation of teaching loads, greater flexibility in student programs, a better system for postponing some subjects, and a reduction in the flow of students in and out of the college during the year. It is likely to make for easier scheduling and for easier adjustment of the majority of students to college.

Television.—Is there any flexibility to be gained through the use of educational television? This is an obvious question in view of the advances which television as a teaching medium has made in recent years. San Francisco State College produces and transmits a TV program for gifted high school students. The high school student takes the same final examination as other students and if he passes receives a certificate which may be turned in for college credit at San Francisco State.

This might be considered a combination of credit by examination and controlled advanced standing. However, San Francisco State College has not been content to let the TV programs be merely lecturing. Weekly meetings of discussion groups have been included both for regularly enrolled students and for the high school seniors, to retain the values of face-to-face contacts between students and an instructor. Discussion leaders for high school students were teachers who had worked in a special seminar with the in-

structor of the course; and in most cases the TV instructor himself met occasionally with the high school group so that he became something more to them than a TV personality.

One of the common denominators of most programs for getting flexibility into the curriculum is deviation from the routinized lecture in an effort to emphasize individualization. Teaching by television is, by and large, lecturing. No matter how skillfully, how entertainingly, how histrionically it is done, it is still lecturing. Critics maintain that teaching by television is the replacement of one lecture device by another, that in terms of flexibility it holds little promise except as an accessory, an accoutrement to learning. Proponents of teaching by television, however, maintain that it can be used to supplement the work learned in class or in the library, that it can extend the audience of good teachers beyond the usual classroom capacity, that it can bring closeup views of demonstrations to hundreds of students simultaneously, and that it can free teaching time for assisting individual students. Like any other form of one-way communication, its widespread use as a substitute for other teaching-learning activities could serve to bring about increased conformity and increased regimentation, unless teachers recognize its limitations and compensate for them.

Other new educational media, such as self-teaching machines and language laboratory equipment, are being introduced to enable each student to proceed at his own pace and to free the teachers' time for assisting individual students. Regardless of the media used, however, the instructional material itself must be appropriate to meet student and program objectives. In the final analysis, then, the degree of flexibility resulting from the use of educational television and other new educational media depends upon the philosophy of the individual institution and the way in which the media are used with other learning activities.

Off-campus study.—Although programs of study abroad have received considerable publicity, other off-campus programs also are growing, both those offered during the regular session and those offered in summer.

A unique experiment in flexibility at Oberlin involves off-campus summer study. This is an area for flexibility which is likely to develop in the future as more colleges and universities expand their summer sessions and move to year-round programs. Departments at Oberlin may now give course credit work which students do on their own away from campus over the summer vacation. The arrangement appears to be more feasible in the language fields than in others. For example, a student may enroll in a French course,

go to France for the summer, and take an examination upon returning to campus the following fall.

At Stanford and Hiram, off-campus study is more formalized, with classes traveling or studying together. For example, Hiram students may have an 8-week winter period of off-campus study in an advanced foreign language course. At Stanford, selected undergraduates may spend two quarters at one of several Stanford study centers overseas, where courses are given under the supervision of resident Stanford faculty members. Programs are designed with special reference to the country in which the center is located, and full academic credit is given.

Another approach to off-campus summer flexibility is seen in the University of Chicago's Humanities I course offered at Aspen, Colo. A year's work in humanities is condensed into a 10-week summer course dealing with music, art, and literature. The course is limited to 20 students, who have access to concerts at Aspen. This arrangement seems popular with the student body.

At the University of Michigan, a program of summer reading has been in effect for several years. Under the auspices of the Honors Council with the cooperation of the Extension Division, students may fulfill a prerequisite or explore a new field and obtain credit upon completion by examination or submission of a thesis. The course of study for summer reading is individually planned by the student's adviser with the approval of the departmental representative.

Curricular flexibility can also be achieved through special off-campus programs for residential students. In the academic year 1961-62, Lafayette College instituted a College Scholars Program. Under this program 25 juniors and seniors, selected on the basis of ability and creative promise and coming from different disciplines in the arts, sciences, and engineering, resided together near the campus and, in addition to carrying normal academic programs, participated in weekly colloquia and seminars at which faculty members, visiting scholars, and the students themselves read and discussed papers on various scholarly subjects.

Many institutions also have off-campus programs in cooperation with business and industry.

Administrative and Staff Problems

In the preceding sections, the reader has considered the rationale for curricular flexibility in terms of its contributions to institutional progress, faculty growth, and student learning, and its

effects upon admissions and attrition. Attention also has been given to examples of flexibility at 13 selected institutions, examples which are representative of the variety of practices at other institutions as well. Some of the administrative and staff problems which are inherent in providing flexibility in student programs in higher education follow:

Budgetary Flexibility

If curricular flexibility is to be provided to any appreciable extent, there is need for another and different type of flexibility, budgetary flexibility. Administrators need financial freedom in order to take effective action to improve the curriculum. Leverage is needed so that additional sections or special programs may be added when the need arises. One way in which budgetary flexibility can be achieved is through the device of a contingency fund. Such a fund could be used to set up a special section of a large lecture class or to provide extra compensation for research assistants in order to secure the services of outstanding faculty members. At Hiram College, for example, the president has a discretionary fund which can be used to secure additional teaching assistants as the need arises.

It is too much to expect overworked, underpaid staff members to undertake extra tutorial work or provide additional instruction for many top students just for the love of it. Curricular flexibility should not be achieved through exploitation of the faculty. If special programs for the gifted students are to be put on a firm footing, there must be adequate compensation for the faculty members who are asked to teach them. At Stanford, for example, the senior colloquia are counted as part of the normal teaching load responsibility. In addition, the Honors Program in Humanities has a financial grounding which is essential to its success. The program buys instructional time from the departments.

On the other hand, at Reed where classes are smaller, the thesis work with students is taken into account in planning the total program for faculty members. In this case, professors carry seniors writing theses under their direction as part of their regular teaching load. This work varies in its incidence from department to department, from man to man, and from year to year, so that it cannot generally be calculated in advance. Apparently most professors regard the thesis as one of the most successful aspects of the Reed program and accept responsibility for this work as part of their regular load.

In the final analysis, it is sufficient to point out that both financial support and professional recognition are essential for the success of special programs, whether these programs require additional staff or additional service by regular staff.

Importance of Guidance

One important adjunct to curricular flexibility is an adequate guidance system, one which gives sufficient time and attention to the above-average student as well as to the marginal one. At many institutions, the lowest third of the class gets guidance attention from faculty and administration because it is relatively easy to justify remedial programs or special services to salvage the weak, and results can be evaluated in terms of prevention of failure or dropping out. Frequently, much more effort is expended on the marginal students than on those with ability who, while doing satisfactory work, are nevertheless not working up to capacity. Because the fruits of one's labors with students of high ability are not always readily discernible, some institutions seem reluctant to spend money on guidance for the gifted, and individual faculty members leave above-average students to their own devices in the press of demands from marginal students whose needs are more obviously urgent.

One weakness of many advisory programs is the large number of students a faculty member is assigned to counsel. At the University of Michigan, faculty counselors are released from a third of their teaching or department duties and assigned from 150 to 180 students for freshman and sophomore counseling. The value of guidance for the gifted is perhaps best seen at Reed where the student gets more attention from faculty members than is possible at many larger institutions. Harvard strives to get a certain amount of flexibility into its freshman advisory system by assigning the best students to the best advisers. However, the turnover among advisers at Harvard and elsewhere is inordinately high and such turnover is another weakness evident in most advisory programs.

Recently U.C.L.A. established a special program for identifying and guiding exceptional students in the freshman class. All entering students were given some 14 hours of aptitude, achievement, and personality testing. As a result, approximately 10 percent of the freshman class, whose high school records had not revealed it, were uncovered as possessing unusual abilities, placing them in the top half of 1 percent nationally. This gifted group was assigned a

special counselor who gave each person an hour conference during which the test findings were discussed. After that, additional counseling was available to the student when and if desired. The group also were encouraged to accelerate or to take more challenging courses than they ordinarily would have done. In addition, the college planned a continuous research program with this group in order to ensure that they get the most out of their education. The U.C.L.A. experiment points up the fact that abilities of many capable youth are not revealed by their high school records, either because some students have not been challenged to demonstrate their proficiencies or because some high school records do not provide adequate evaluations of abilities.

The fact remains that attention to guidance in many institutions lags considerably behind attention to instructional programs, that many faculty members who are quite proficient in their subject areas have neither the training nor the inclination to undertake extensive guidance of students, and that the diversity of student characteristics demands more than perfunctory attention to the guidance function in programs purporting to offer flexibility in rate or depth of student learning.

The Teacher's Role

Little has been said thus far about the crucial role which the individual teacher plays in providing flexibility in the curriculum. Where classes are small, the instructor can frequently put the level of work as high as the abilities of the students warrant. In a small class the instructor is more easily able to gage the effectiveness of his presentation than he is in a large lecture class. Teaching by a discussion method with provision for independent study may enable the instructor to move a class ahead as rapidly as they are able to go, to take them as deep in a subject as they are ready to be taken.

The effectiveness of the classroom teacher at an institution such as Reed is eloquent testimony on behalf of small classes. The fundamental teaching method at Reed is the conference approach. Classes are kept small enough to allow each student to get the optimum individual attention. Passivity is avoided. Participation and involvement are at a premium. Reed maintains that a good conference can go far to stimulate a student to work to greater heights, that it can produce an identity with and commitment to an intellectual discipline which even the most eloquent lecturer cannot accomplish. In the long run, a small class discussion in the hands of a capable

teacher may be the most productive yet most elusive type of flexibility obtainable.

Actually, regardless of the teaching-learning techniques advocated by an institution, the degree of flexibility in rate and depth of each student's learning is determined largely by the philosophy and practices of the individual teachers with whom he has his work.

Conclusion

In the final analysis, flexibility depends much more on the willingness, personality, and interest of the faculty than on the formal requirements and procedures of the institution. In other words, men are more important than methods. Much depends on the environment, the atmosphere of the campus, the quality of instruction, and the student body. Little is likely to be accomplished by artificial devices.

As a result of visits to the 13 institutions represented in this study, and the study of practices at other institutions, the following conclusions seem appropriate:

1. Advanced placement, independent study, and honors programs seem to be the most promising types of curricular flexibility at this time. They should be encouraged, extended, and given adequate financial support.
2. Guidance, especially for gifted undergraduates, needs to be expanded and improved.
3. Library facilities and their use play an important part in facilitating the effective operation of special curricular programs.
4. The traditional attitude toward academic bookkeeping should be re-appraised and probably revised. There is great need to eliminate the ruts in higher educational procedures, so that individual students are not required to conform to group rates of progress and group curricular patterns. Departmental autonomy, when it is tradition-bound, should be reduced.
5. Undergraduates should be permitted, encouraged, and required to assume greater responsibility for their own education.

At the same time, a certain amount of constructive criticism may be healthy to the higher educational scene. Actual practices in providing flexibility seem to be lagging behind lip-service to the

philosophy on which such practices are based. The programs which are really challenging students to produce at their maximum touch a minority of students. Too many collegians are "coasting." Too many are limping; attention is focused almost entirely on the average. Too many faculties are too overworked and underpaid to provide that extra instruction, inspiration, and guidance which the serious students on our college campuses need to have.

Let us conclude with the same question with which we started: Why Flexibility? Is it worth the extra expense, time, and effort? Do today's undergraduates deserve more of an education than they are getting? Perhaps not all of them. But every campus has a large proportion of serious students who deserve the best we can give them. For this group, flexibility seems to be the answer—flexibility which permits escape from the Procrustean textbook to a variety of reading materials, opportunity for choices among alternatives, and search for materials and answers on one's own.

These, then, have been the random observations of a traveler who chose to visit some of the best colleges and universities in the United States in 1958 and who has since had time to evaluate the programs observed. One returns from such a trip impressed by the sense of ferment on college campuses. Promising experiments are being tried; fascinating ideas are being expressed. Educators are wrestling with the problem of curricular improvement; they are seeking to push out the frontiers and to make higher education more effective than it has been. An increasing number of them are concerned with extending flexibility in the curriculum so that all students are encouraged to work up to capacity, so that the educational pattern has relevance for the individual's abilities, interests, and objectives.

So long as America is in need of manpower trained in the sciences, in industry, in the arts, and in world affairs, institutions have an obligation to provide programs with sufficient flexibility in the rate of progress and depth of study to permit each individual student to develop to his maximum capacity the qualities needed for scientific and social progress. In a nation rich in natural resources and intellectual potential and entrusted with major responsibilities for world betterment, we can and must afford to expend whatever money and effort are necessary for maximum development of individual human resources.

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