An administrator must recognize the importance of maintaining able men and women on the college staff. This consideration should have priority over all others. In every selection, emphasis should be placed not only upon scholarship and teaching ability, but upon character, personality, health, family life, and affiliations. 8.

# The Importance of Teaching

#### Teaching Is a Faculty Matter

The teaching is done by the faculty. Standards of scholarship are fixed by the faculty, and the degrees are voted upon by the faculty. The president has little to do with actual teaching. It is not his job. However, he can do much to maintain and sometimes raise standards and improve the quality of teaching. With the support of the trustees and through the budget, he can also expand or limit the scope of the teaching offered. His greatest influence is wielded through the type of men he recommends to the trustees for appointment to the staff. Here he can emphasize character, research ability, teaching aptitude, personality, or whatever quality he regards as essential to the welfare of the students and the institution. He can do much to maintain the morale of the teaching faculty by the way he supports freedom of speech, tenure, faculty participation in management, the library, and all things highly valued by the faculty. Through his emphasis on its importance over the years, he can materially improve the teaching. The faculty will respond to standards and ideals which are steadily upheld by a president.

There is an old saying, "The stream never rises higher than

its source." This is certainly true of an educational institution. Such institutions have great inertia; with changes in administrative leadership the response is slow, both up and down. But the proverb holds. No college or department rises above the standards set by the president, by the deans, and by the heads of departments.

Character, scholarship, personal relations, culture, ideals, and home relations are affected by the attitude of those in authority. The president influences by his personal ideals everything in the institution and, among others, the teaching. This source of influence should be kept noble, meaning upright, unselfish, considerate, and discerning.

H.

#### Teaching Is a Faculty Matter

In the preceding comment on "Teaching Is a Faculty Matter," my colleague makes the declaration, "The president has little to do with teaching; it is not his job." The fact is that the president is much concerned with teaching, and he should be, for the leadership rests upon his shoulders whether he likes it or not. Certainly in the college of a thousand students or less the president is the director of all plans and purposes of education. When their president is without a clear philosophy of education, large institutions are likely to wobble in their course.

My colleague calls attention to the control of education by the faculty. His statement is true, but the faculty consists of men and women of special interests, organized in departments, divisions, and schools or colleges. Constant conflicts arise about courses, requirements, registration of students in classes, and other matters. Who is to direct the ship on its course? The answer is, the president.

It is stated that this officer is overwhelmed with budgets, building matters, public relations, money raising, and other affairs of importance. Unfortunately, that is the fact, but it indicates that the emphasis is on the wrong point. The whole tendency in modern life is to become entangled in the secondary, the maze of day-to-day events, and with gadgets, both material and visionary. It is no wonder that the president is overwhelmed with the business of keeping the place going, and in consequence cannot give what he would to education. Nevertheless, I still would say that the president's job is education. The man who fills the place should have a philosophy of education and understand what education means in our modern social order.

A case in point is that of the college of arts and sciences as it stands today. Little by little, the general purpose of the college is being depleted by the introduction of vocational training, as witnessed by the pre-medical and pre-nursing courses, and those offered to medical technicians. After a period of years the instructors in these groups want larger recognition and so fight for the organization of a school or college in which to carry on a larger and more specialized course of instruction. This sort of whittling down is going on everywhere, resulting in reducing and hampering the college of arts and sciences, supposedly the very center of the higher education program.

If the purpose of the institution is to vocationalize the education it offers, then the college of arts and sciences becomes a service college where instruction is limited to training in language, science, and mathematics covering a period of about two years. To this sort of instruction, a variety of vocational courses are tied, their teachers hoping someday to have a college or school of their own in the institution. Who is going to direct, modify, or stop this destructive drift? Will it be the faculty or the deans? Not likely. The problem will rest right on the shoulders of the president. Education is his job.

М.

#### The Articulation of Students

The pace of the first year in college is faster than that of the last year in high school. Competition is stiffer, as the proportion of able students among college freshmen is higher than in a senior high school class. Students who sailed smoothly through high school are often stranded in college before they are aware of it. The slight effort put forth in their high school days does not furnish enough momentum to carry them in college.

On the other hand, some high schools afford excellent training; their graduates on entering college often are obliged to repeat courses which they have already mastered. These students are among the ablest entrants, and such an introduction to college may have a most discouraging effect.

Stated another way, each entering student is an individual problem. His high school preparation should be carefully considered, with his assistance, and his college work should be carefully arranged in the light of what he has done and how he has done it. Repetition should be avoided, and the total load should be arranged somewhere between twelve or fourteen hours and eighteen or twenty hours, according to the individual's ability.

Far too often, especially in our larger institutions, student registration is a wholesale job with too little attention given to individual differences. Each applicant is fitted to an average schedule which may be right for 60 per cent, but is too light for 10 per cent and too heavy for 30 per cent of those entering.

No matter what policy of admission and registration is pursued, it remains a fact that some freshmen are extremely able, some, average, and some, poor. More effort should be made than is generally the case to differentiate between the students in these several classes. The best students should be enrolled in a superior group and excused from the more elementary subjects in which they already excel. By some method we should avoid boring these students with the repetition of work which allows them to make high grades without serious study. I am satisfied that nothing is more detrimental and discouraging to a brilliant mind than to be held back in a class of poor students moving at a slow pace.

If a student is to be properly registered, it is essential to consider what his occupation is to be, or at least in what broad field his chief interest lies. Yet students with brilliant minds, of which there are a considerable number, often find it difficult to limit themselves to any one occupation, as they are curious about, and interested in, many. However, they will usually know whether their chief interest lies in the humanities, in science and engineering, in art, or in some branch of agriculture. Even with this vague objective, it becomes clear that certain subjects should be taken in the freshman year.

Until a freshman states his field of interest, broadly or specifically, no one can counsel him wisely as to what courses he should take. We must add purpose to interest if we are to secure the best work from an individual.

In case a student remains uncertain in which field his occupational interest lies, he should be required to take a vocational aptitude test. This will afford considerable guidance to the professor in charge of his registration.

If adequate consideration is to be given to each individual freshman, certainly several thousand cannot be registered in one or two days. Freshman registration must be spread out over a longer period than is now customary. When we consider that the financial cost will be from \$800 to \$1,800 for the student himself, and \$300 to \$1,000 or more per year for the institution, and also that the care in registration may make or ruin the student's chances of success in college, a few days more of time seems of small consequence. Unfortunately, colleges, like people, have a strong inclination to do things the easiest way.

For many youths the *free* local junior college, similar to those in California, is the desirable institution of higher learning. Only those who averaged B in high school are well prepared to enter college; between 10 and 15 per cent of these fail. For those who average below B, the free local junior college is the ideal link between the high school and the college or university. The junior college allows the student to try out college at no higher expense than that of high school. It offers substantially the first two years of college and various terminal vocational courses. C average at the junior college level should admit a student to the university or to any four year college. If he is in earnest, the experience saves him money and in no way impedes his progress in college. If he does not succeed, he can transfer to a vocational course or drop out. We need the free junior college, and it will inevitably come into general use.

The articulation between the sophomore and junior years

also deserves careful consideration. In the main, the first two years in college are a preparation for the last two. Is the student fiinishing the first two years prepared to enter the junior year of the course he has elected? Do his college average and his grades in fundamental subjects indicate he is qualified? He certainly should not be promoted or allowed to enter the junior year unless his college average in his first two years is fully up to the average required for graduation. If the requirement for graduation is an average of 2.0, the student should be fully up to this average before admission to the junior year. The end of the sophomore year is the time to drop a student who won't work or who lacks sufficient ability. He may be halted until he repeats enough work to raise his average to the college requirement, if this seems advisable. Why encourage incapable or uninterested students to go further? It would seem, also, that for such students further inquiry should be made as to the wisdom of their selection of an occupation.

When we come into the senior college, the inefficient have been eliminated; the ablest stand out, and their objective in life is clearly defined, or certainly more clearly defined than was the case two years earlier. It is at this time that a large development in the student's intellectual life is to be expected. All students who are competent to enter upon graduate work or schools in the professional fields, such as medicine, law or theology, should be taking the required or desirable pre-training. Students in the senior college have by this time a pretty clear idea how to study; and while able teaching counts tremendously, it is not so essential with upper classmen as with freshmen and sophomores.

H.

#### Teaching

Of our 1,850 colleges and universities, 138 conferred the doctor of philosophy degree and 438 the master's degree in 1948–49. About 1,400 institutions confined their teaching to undergraduates as an essential objective. In the eight universities

conferring from 118 to 496 doctorates and from 940 to 4,793 master's degrees, research and graduate teaching are major occupations. In about 100 more institutions, research and graduate work require from one-tenth to one-third of the time of the staff, largely dividing the attention of many faculty members between teaching undergraduates and postgraduates.

While many believe that supervising graduate and research work improves the quality of undergraduate instruction, I hold the opposite view. I believe the division of interest tends to lead the teacher to neglect one or the other, usually the undergraduate group. Even in a great university where graduate work and research are matters of prime consideration, teaching still remains the leading purpose and problem of the institution. Even here it should be held of more importance than research.

Let us first admit, as we must, that in more than 1,300 colleges in which there is no formal recognition of research as an institutional objective, much of the teaching is far from inspiring. My estimate would be that from 5 to 10 per cent is unpardonably poor, and at least 15 to 20 per cent more is far less effective than it should be. This is due primarily to two things, the scarcity of good teachers and the fact that many students in our American colleges have no serious interest in scholarship. This lack of interest on the part of the student body discourages good teaching.

In our great universities and to a decreasing extent down through the leading 300 which serve graduate students, another factor enters. On the whole these institutions have ample funds to offer attractive salaries to the best teachers, but they generally require the doctor's degree and research ability as a requisite for employment. A really large proportion are employed on the basis of their publications and the excellence of their research accomplishments, with very slight consideration given to their effectiveness as teachers. This latter statement would by no means apply equally to all departments in any single institution. I am not alone in the belief that there is more or less poor and unskilled teaching in every college and university, and that the teaching in our great universities, especially in the freshman and sophomore years, is inferior on the whole to the teaching in our best colleges. A definite campaign should be maintained in every institution for improvement of teaching. Here and there in certain departments such a policy is energetically pursued, though rarely.

It is my opinion that a qualified person working out of the president's office should have as his chief duty the maintenance of teaching standards. Such a person, if fully supported by the president and if courageous, persistent, tactful, and persuasive, could make tremendous improvements in the teaching carried on in an institution over a period of years.

In most colleges there is a natural turnover in the staff of about 20 per cent each year; the percentage is less in small colleges and more in large universities where many assistants and graduate instructors are employed. The first effort of such an officer as has been described should be to check on the teaching ability, experience, and success of every person considered for appointment, and to veto those of whom he cannot approve. This pressure should be heavier on freshmen and sophomore teachers than on those whose teaching would be confined to advanced classes.

This officer's second objective should be to establish, in each department, in-service training of inexperienced teachers. Much could be done by assigning a young instructor to a staff member with a definite reputation as a good teacher, with the understanding that each would visit the other's classes and discuss teaching freely from time to time. Classes or seminars on teaching could well be conducted in large departments.\*

His third effort might be bent toward identifying the least inspiring, least capable and least acceptable teachers and, so far as possible, removing them from the staff, or at least from teaching. Employment could generally be obtained for these individuals outside the teaching profession. As soon as every department realized that the president was backing this movement for good teaching, there would be a response.

A sound salary policy to go with such a plan would be to pay the same salary to a first-class teacher who did no research as to a first-class research man who did no teaching or whose teaching

<sup>\*</sup> See interesting article by W. W. Charters, School and Society, Vol. 13, pp. 494-97.

was poor. The man who combined able teaching and brilliant research should receive higher pay.

During my service at Iowa State College I did all I could to promote good teaching, and some progress was made. Were I to start again where I started then, I would go much farther along that line. I regret keenly that enthusiasm and inspiration are far too often lacking in college teaching. Many deans and department heads fail to appreciate any effort made by a teacher to express enthusiasm or to inspire students. They support a policy of "take it or leave it." They favor teaching formally and giving the class the essential facts. Of course, many earnest, hard-working students do respond to average teaching, but they would certainly be more responsive and so would many other members of the class, if they felt the professor was enthusiastically interested in his subject.

The presence of numbers of indifferent, cynical and critical students in a class can kill interest. True learning can be acquired only by sitting at the feet of a master. Where a teacher is conscious of a critical audience, he becomes cautious, restrained, and guarded; enthusiasm is impossible. The best remedy I know for such a situation lies in a division of the class according to ability and interest. In each section the teacher's purpose will be clearer, and better teaching will be done. I feel that in every freshman class, at least, the most promising students should be taught separately and by the most capable teachers. Among these select students are those who will later be our ablest leaders; certainly they should have the very best instruction that can be provided. This policy is followed unswervingly on the athletic field; it is a sound policy in the educational area. I do not mean that other students should be neglected, but that the most promising should have the special attention of excellent teachers.

H.

#### How the Work of a College May Be Judged

Those in authority in nearly every college or university wonder from time to time just how well their teaching faculty is doing its job; but strangely enough, they are never able to find out. It is a rare administrator indeed who possesses anything like accurate knowledge either as to the teaching ability of the members of his staff or the quality of teaching done by his faculty as a whole. He may possess abundant information of other kinds concerning the men and women whom he has employed for this purpose, but his files will reveal nothing as to the actual efficiency of their work.

In part, the explanation lies in the fact that college faculty members as a group do not like to be supervised or, for that matter, observed by their superiors in the performance of their classroom work. It is not easy to justify such an attitude. A direct consequence is that many students in nearly every institution suffer constantly at the hands of poor teachers without that condition ever becoming known to the administrative officials. Obviously, some objective measure of the quality of teaching done by our higher institutions of learning is urgently needed.

A suggestion that seems worth considering in this connection is that the quality of teaching of any given institution, taken as a whole, may be judged by the proportion of its students who are found to be working at or above their indicated ability levels. It is not difficult to determine this with considerable accuracy.

It is quite generally agreed among investigators that two of the best indices of the ability of any given entering student are (1) his score on some standardized aptitude or mental test and (2) his average grade in high school. In some institutions, these two scores are combined, with one or both weighted; and the composite score so obtained is regarded as a fairly satisfactory index of the student's ability to do college work. It is true, of course, that there are many students whose subsequent work does not measure up to these early predictions.

It is likewise certain that many work below their true ability levels while in college, and this fact may account for the differences between their predicted and actual performance. It follows that the predictive scores may actually be more nearly accurate than is commonly thought to be the case. At any rate, it is feasible to divide each entering class of students by means of these predictive scores into five groups, A, B, C, D, and E, placing in each group the same proportion of the class as normally receive the corresponding average grade in their subsequent college work. If this should be done, it would become an easy matter to check each student's average grade at the end of each semester or quarter against his predicted average, and in this manner to determine how many have fallen below their indicated ability level.

The percentage of students making grades up to or above their predicted level would be a fair measure of the quality of the teaching of the faculty, taken as a whole. The justification for this is that really good teaching keeps a student working at or near the highest level of which he is capable. It is not unreasonable to say that the greater the proportion of the student body of any given institution to be found working below its ability, the poorer the quality of the teaching in that institution. Indeed, this assumption seems warranted even after full allowance is made for the fact that the predictive scores are themselves not entirely accurate.

In precisely the same manner and by the same figures, the efficiency of the respective major departments may be compared. That is, it would be easily possible to determine for each major department the percentage of its students who are working up to or above their indicated ability. There is reason to believe that some startling differences would be revealed among the major departments of nearly any institution in this respect, just as there would be among the institutions themselves, taken as a whole, if they should be compared in such a manner.

H.

### Lecturing

It has always seemed to me that the lecture method is greatly overrated. Especially in the elementary work generally offered in the first two years of college. There is little justification for lecture courses. Modern textbooks cover all subjects taught in elementary courses adequately, and class discussions with explanations at difficult points would serve more effectively.

Years ago, the head of the Economics Department at the University of Chicago, in discussing the value of the lecture system, said that when a new instructor was brought into his department he was always asked if he had any lectures suitable for use there. Usually the man had. If so, he was told to have them mimeographed and given to his class as a basis for quiz and class discussion. After having been used in this way, corrected and brought up to date, the material was printed in book form by the department. This plan usually did away with lecture courses.

On any campus there are few superior lecturers. The efforts of many are dull and uninteresting, in short not as effective as quiz and discussion with a good textbook. Most of us acquire information more readily through the eye than through the ear. So long as the lecturer talks, all the class can do is take notes which are rarely as clear as a text. If at the end of each class period the professor would sketch briefly the material in the next assignment giving some explanatory help on the more difficult points and arousing interest in the matter to be covered, the results would be much more successful than those obtained from the average lecture.

I am familiar with the stand taken that classes may be so large they can be handled only through the lecture method. This attitude is unworthy of a college professor. The large class should be broken down into sections small enough for class discussions. Even if the discussions were led by the ablest students in the class, more thinking would be done and more advancement would be made than in lecturing a mass group whose interest would be difficult to hold.

I am convinced that more thinking will result, a better mastery of the subject will be gained, and more interest will be inspired by a combination of quiz, discussion, and problem-working than by lectures. Probably one basis for judging the effectiveness of the work of a college or university would be to rate it inversely on the proportion of lectures given. There is no question but that it takes less effort on the part of an instructor to read a lecture, once written, to a class than to organize and direct discussion, quiz, and problem-working. If the ease of the professor is of chief concern, the lecture system should be strongly maintained.

H.

#### Lecturing

On a sunny morning in May when the windows of the academic buildings are opened to the gentle breeze, a visitor to a campus may not hear "the voice of the turtle in the land," but he will hear the voice of lecturers on every side. Now and then a few words come through to his ears, but they mean little. The visitor is concerned with the amount of talk that he hears as he walks slowly along the paths that cross the campus. The talkers are lecturing; they are talking for fifty minutes.

The lecture system has its merits, but as a method of instruction, it has been greatly abused, especially in undergraduate courses. Such subjects as languages, mathematics, and to a lesser degree the sciences do not use the lecture method of instruction, but the social sciences and literatures are steeped in it. When a professor is dealing with material that is scattered and not well systematized he has to rely on the lecture as a means of conducting his courses.

In subjects where there are good textbooks, the lecture is wholly supplementary; then instruction is best advanced by questions and discussions aided by assigned reading. In the graduate courses, the lecture is the thread, the connection holding data and conclusions together. After all, the center of the course is the student. He should be brought into the instruction process and given an opportunity to have a part in the development of the course he is taking. By such a method the teacher soon discovers how well his teaching is reaching the minds of the students in the classroom. Such teaching is a give-and-take method for both teacher and student.

# Visiting College Classes

In spite of the great prejudice against visiting college classes for purposes of judging the quality of the teaching, it still remains true that in no other way can it be determined.

As suggested elsewhere, this could probably be most agreeably done by assigning an inexperienced teacher to an able teacher and arranging to have them intervisit and discuss their teaching problems. The experienced teacher could learn the type of work the young teacher was doing and could report his findings intelligently to the department head or the dean.

At Miami University I arranged to devote the necessary time to some class visitation. I decided on visiting the classes in the social sciences; and at a meeting of the staffs in these subjects I explained my purpose and promised two things: First, if I visited one section of a man's classes, I would also visit the other classes he taught. So I would in every case spend three to five hours in each teacher's classroom. Thus no teacher would be judged by one class only. Second, I would enter with the students, sit in the back of the room, and remain until the end of the hour, leaving with the class. I believed these two conditions of visiting to be essential. No one took offense from these visits, and there were always enough complimentary things to be said that the edge was taken off such adverse criticism as was offered.

Today, with literally thousands of inexperienced teachers entering upon their work annually, there is no way to help them or to guard students from the effects of poor teaching without class visiting. And yet it is exceptional to find systematic visiting of classes in our colleges.

H.

### Fellowships for Promising Young Teachers

As we need from 6,000 to 10,000 teachers each year to fill the ranks of those who retire or die, every effort should be made to attract toward a teaching career all college graduates who have shown real aptitude and interest in the profession.

Many undergraduates are used as part-time instructors, and some show an exceptional aptitude for teaching. If fellowships for able teachers were offered in each department of the universities, those who accepted them would probably enter definitely into the teaching profession. Their research should be divided between the field of knowledge in which they are specializing and the department of education.

Most of our college teachers have gone through the graduate school with little or no emphasis having been made upon teaching. Usually their research is in their special field, whether it be of science or the humanities. Thus they enter their teaching experience after a period of absorption in the highly scientific objective of their thesis with no thought of the problems of teaching and with little enthusiasm.

If those definitely expecting to teach could prepare their thesis on some problem involved with teaching their chosen subject, if they could teach some classes in the subject, under supervision, they would be more interested in their profession. Fellowships in universities open to students who show definite promise of becoming able teachers would contribute greatly to the advancement of good undergraduate teaching.

H.

## The Doctorate as a Requirement for a Professorship

The bachelor's degree presumably indicates that the man or woman who holds it has attended college somewhere for four years. In the same manner the doctorate indicates that the holder of that degree has studied in an institution of higher learning for at least three years beyond his baccalaureate and has some understanding of the techniques of research. Presumably, he has a deep and wide knowledge in his particular field; and presumably, he can carry on independent research. However, neither of these presumptions is true in all cases. Many holders of the doctorate never attempt research after their theses are accepted.

This fact leads one to believe that the degree should discriminate in some way between the able research man and the man of creditable scholarship. It has been suggested that the degree be conferred "with highest honors" on the man truly able and eager to carry on independent research; "with honors" on the man of fair research ability; and the degree without embellishment on the man showing little promise of success in independent research.

There is also a wide difference of opinion as to what constitutes a satisfactory thesis study, with chemistry and physics at one extreme and sociology and education at the other. This difference is accentuated by the fact that a great majority of all entering for the doctorate in education are experienced teachers, advanced a number of years from their baccalaureate degrees. Practically all candidates in physics and chemistry enter directly from their baccalaureate degree. A large percentage of these plan to go into research later. On the other hand, nearly all candidates in education expect to continue teaching or to enter upon executive work in education: thus their interest in research is secondary. While there is a strong feeling in scholastic circles that the one degree, that of Doctor of Philosophy, should be the sole award for three or four years of advanced study, this conviction forces the degree to cover widely different types of scholarly endeavor, different in content and different in regard to research. There is much to be said for awarding two types of degrees.

The present attitude that no young person is fitted to become a college professor until he has won his doctorate is unfortunate. In some fields, such as those of chemistry or physics, this stand can be strongly defended. In English, literature, music, art, speech, elementary foreign language, architecture, landscape architecture, and other fields where native artistic endowment or literary appreciation are called for, the requirement seems rather farfetched. It raises the question whether the quest for the doctorate may not destroy or seriously impair the high qualities which fit the individual to lead and inspire. Teaching skill should be esteemed above degrees.

The engineering schools are now facing the problem of what weight to attach to the doctorate as a requisite for their professors. There are certainly some positions which require research technique and advanced learning in mathematics and physics and which should exact the doctor of philosophy degree. However, there are many others where the years required for the doctorate could be better spent in active engineering work, if the success of the students is to be the main concern.

All this, and the theme might be further elaborated, adds up to the fact that demand for the doctorate as a prerequisite for a full or associate professorship in every field is unwise.

At the same time, it appears that the requirements for the doctorate might well be raised. It is customary to admit as candidates only baccalaureate graduates who rank in the upper one-half or one-fourth of their class. However, too many students showing little ability in research are allowed to persist through four or five years when they are awarded the degree. Surely only men of outstanding ability and intelligence should be so honored. Men of less capacity would be sufficiently recognized by a master's degree. It is not easy to draw the line. Students admitted to fellowships who work faithfully for their major professors place the latter under personal obligations which the professors too often repay by recommending such students for advanced degrees.

Possibly the post-doctoral course as now offered at the Institute for Advanced Research and soon to be offered in other research centers will select very able men and produce great research workers.

Certainly the future of America, and indeed of the world, depends on the great creative thinkers who are developed. Of the 3,500 to 5,000 receiving the doctorate each year, perhaps 10 per cent, or 350 to 500, scattered over some sixty fields of knowledge, stand out as brilliant creative thinkers. We should certainly strive to graduate more of them. A study of the lives of the greatest American leaders today might point out some weaknesses in our college and university courses and degrees.

H.

#### What Does It Cost To Graduate a Student!

During a recent visit my brother brought up the question, what does it cost to graduate a student? To get his attitude, I may say that he is a successful lawyer, on the practical side. The question is one that comes up now and again, and will be raised more and more often in the future. Businessmen are inclined to challenge higher education by asking that question. Certainly more criticism is now directed toward education than at any time in my recollection. Real estate interests speak loudly about the cost of schools and demand reduction of taxes. In state and national budgets education faces a sharp competition for a share in the tax dollar. And privately endowed colleges compete with insistent requests for a share in the funds given by individuals to special causes. Consequently, when the question is asked, "Is it worth that much?" there should be an answer.

In reply, I requested further clearance of the subject from my brother, which elicited the statement that the amount must be around \$15,000. This sum is arrived at by interest and deterioration on capital invested in the college plant plus operation costs, the sum of which is then divided by the number of students graduated. We took a hypothetical case where the investment in plant and equipment amounted to \$5,000,000. The interest, deterioration, and repairs, if based at 8 per cent of cost, which is low, would be \$400,000. To this was added, say, \$600,000 more for salaries, supplies, and other expenses, all of which aggregate to the amount of \$1,000,000. A graduating class of two hundred would, with this kind of reasoning, bring the cost of the product (graduates) to \$5,000 for the last year. Counting a four years' college course, the total would reach \$20,000. To this must be added the student's living expenses. Thus the price of educating and graduating one student is \$25,000. My lawyer brother raised the question, "Is it worth that much?"

The large sum of \$25,000 cannot be charged against the two hundred graduates since there are twelve hundred other students in the hypothetical college receiving instructions at the same time. If the denominator is increased, the annual student cost drops to \$718, which is quite reasonable.

But my antagonist, who likes to bait an educator, declared that there are too many people going in for college educations. What are you going to do with them? My answer is that education may have, and often does have, a value in making life more interesting and useful whether one digs in a ditch or sits in the seats of the mighty. This placing of emphasis on vocations has many objections not clearly recognized. Education should not be limited to white collar workers. Yet there is a great pressure on all institutions to provide professional and vocational training. Sometimes this is done without a survey of the field or a careful estimate of the capacity of the occupation to absorb newcomers. The meaning is clear that our educational system is faced with a changing social order.

M.

#### What Does It Cost To Graduate a Student?

McVey's discussion of the cost of graduating a student appears to me to raise several important questions. It is important to know: How much does it cost? Is it worth the cost?

As close as I can judge, dividing the cost among all students in average attendance during the college year, the total cost to the colleges of the country varies from a minimum of about \$400 to a maximum of \$1,300. It is probable that the \$1,300 includes a considerable expenditure for research. The student fees among these colleges vary from \$125 to \$800, and the net cost to the colleges varies from \$275 to \$500 a year.

The minimum for room and board will probably vary from about \$450 to \$700 for the college year. Books will cost from \$35 to \$60—perhaps will average about \$50. All other minimum expenses, laundry, traveling expense, recreation, and incidentals, range from \$175 to \$500 or \$600. These approximate figures would make the minimum cost to the student, exclusive of clothing:

	Low	High
Tuition	\$125	\$800
Room & Board	450	700
Books (average)	50	50
Incidentals	175	<b>60</b> 0
	\$800	\$2,150

A student might attend a state institution for as little as \$800 a year and could attend one of our more expensive private universities or technical institutes for as little as \$2,000 to \$2,200.

If the student has a scholarship or works for wages while attending college, these figures will be reduced.

The cost to the institution, exclusive of the amount of tuition charged, as stated above, will probably vary from \$275 to \$500 a year. Adding their cost together:

	Low	High
Cost to the institution	\$275	\$500
Cost to student	800	2,150
	\$1,075	\$2,650

For the four years this would cost in total from \$4,300 to \$10,600. These would be minimum figures; perhaps we should say from \$4,500 to \$11,000.

The college student also loses what he could earn if employed. Taking this at \$2,400 a year and deducting room and board at an average of \$60 a month or \$720 for 12 months; and incidentals at an average of \$40 a month or \$480 a year, we have a total deduction of \$1,200, leaving a net loss of \$1,200 a year or \$4,800 for four years. We thus arrive at:

Low	High
\$4,500	\$11,000
4,800	4,800
\$9,300	\$15,800

In round numbers this amounts to \$9,500 to \$16,000 as the cost of educating a college graduate.

As the interest at 4 per cent on these sums equals \$300 and \$640 a year, it is evident that the individual who has received a college education must earn from \$380 to \$640 more a year than the average high school graduate to warrant the expense financially. It remains possible that, even if he earns no more, the cultural satisfactions and social connections may fully justify the expense. However, we believe that on the average the college graduate will earn more than the interest on the cost of his college education above the average of the high school graduate. We believe it does pay financially on all students who complete their college courses and are graduates.

There is, however, another factor that should be given consideration. A notable fraction of college graduates come to occupy positions of responsibility and leadership where all the training and knowledge acquired in college contributes to their success and value. These positions of vital leadership are essential to our national prosperity. They grow more difficult and burdensome each year, and college and university training for them is generally essential.

There seems to be no way to determine in advance which youths will develop into these vital leaders. The training of those who will give the nation great leadership is essential; so much of the cost of college training may properly be charged to training national leaders.

There is one other viewpoint on this matter of cost. Every parent considering sending a son or daughter to college should certainly consider the youth's high school average and, if available, his scholastic aptitude test grade. If these are unpromising, it is probable he will not complete a college course, and it probably will not pay to send him to college. This matter should be discussed carefully by the parent and child with the high school principal and with the admissions officer of the college. Unless the necessary money is easily available it might be wiser to save it. Today many families are denying themselves seriously to send youths to college who cannot or will not justify the expense.

H.