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June 6, 1955

Mr. Ira A. Tumbleson  
Newark College of Engineering  
Newark, New Jersey

My dear Mr. Tumbleson:

Attached is the finished draft of the history of the Newark Technical School and the Newark College of Engineering. It has been looked over and checked for content by President Van Houten and myself.

It is thought that you may have some suggestions, after reading it through. If so, will you please pass them on. If I can have it back by the first of September, I think that will be entirely sufficient.

Let me thank you for your help in the matter and hope that this thing will prove acceptable and in the last analysis be useful as well.

Very sincerely yours,



ALLAN R. CULLIMORE  
President Emeritus  
Newark College of  
Engineering

ARC:psj  
Att.

## PREFACE

In attempting a project of this kind it is, of course, much more than the work of one man. In the case of this history there are many of us who have contributed to the project.

Mr. Ira A. Tumbleson, our Librarian, contributed material which touched on events up to the Civil War.

Professor Charles J. Kiernan handled the development of industry in Newark and the vicinity, and the development of education along technological lines from the Civil War to the beginning of the Newark Technical School and did a monumental job in working much of the material into shape.

Professor Robert Widdop handled the material having to do directly with relationships of the school to industry.

Professor James A. Bradley wrote of the development of the Newark Technical School.

Mr. Daniel E. Hall contributed the material bearing on the relation of the vocational schools to the School and the College.

Professor Robert E. Kiehl handled the material which had to do with the development of Newark and its institutions from the founding of the school to the present day.

The Chairman, Mr. Allan R. Cullimore, handled the matter of his own administration and acted as a general unifying or integrating agent.

The material since 1948 and the material on the graduate school was contributed very largely by President Robert W. Van Houten.

Some of this material was set aside in separate chapters and some, for reasons of clarity, was integrated with the material of the history without any attempt to segregate it. This, we think, made for a better and clearer picture than if we had artificially divided the material into particular minor projects or discrete segments.

INTRODUCTION

Things move fast in America. Forever the picture changes in industry, in education. Things are never static. So in reading this history perhaps it is well to recognize that in the old Technical School in the olden days plumbing was taught simply because at that time sanitary arrangements and bathtubs seemed to be fundamental in our conception of a high culture and a good thing for the American people. We needed plumbing then. We needed good plumbing and somebody had to be taught how to be a good plumber. That wasn't so many years ago, but at the present time the scene has changed. Bathtubs have become commonplace, at least in America, and our attention is turned to other things which are highly necessary to our development and our survival—automobiles, radios, television, automation. All have required sequentially more training on the part of those who develop and equip these services to mankind so that this little history should be judged on that basis as a history of change.

In Newark we have developed a type of education and a type of training which is designed to be helpful to the citizens of Newark and our community so that we may enjoy and profit by those things which make for a higher level of culture and which make it possible to live a more abundant life. This is by way of saying that education cannot be split up into small pieces, one segregated from the other, but the development of the human body and the human mind requires many types of training and of education. To provide one phase of this development is our problem, realizing that in the development we must not lose sight for a moment of the broad factors which cover and make necessary education in all fields.

So that this is intended to be a history of an institution which in its own sphere has tried and is still trying to meet the basic human problems of its locality and to make the community not only good, but always a better place in which to live.

In studying the development of American education as paralleling the cultural development of the people, it is almost impossible

to draw a reasonable line of demarcation between the types of our American institutions. Our denominational colleges and our parochial schools and colleges with all shades of religious background have worked together in surprising harmony throughout their lifetimes. Their general philosophy with respect to their public responsibilities is in most cases parallel to the responsibilities of the state and publicly supported institutions.

Perhaps the word free public education should finally apply only to those schools which were constitutionally provided for, but the actual facts of the matter are that the free public schools, the vocational schools, state universities, and colleges of all kinds properly make up what we might call in the broad sense public education. In any case, whether a school is totally supported by public funds or partially supported, or its funds are augmented by public grants, or even if it only partakes of the public money through the avenues of research, it is still, for the purposes of discussion here, to be listed as a public school.

Most of our so-called free schools charge tuition for outsiders. Geographical limitations are sometimes the determining factor in the amount of support and we find ourselves confronted with a very real and practical dilemma when we try to speak of our public school system as consisting of free public schools rather than simply as public schools.

So that we may say, and I think with truth, that all of our American school system is at the present moment interested in developing and educating all classes and conditions of men and women, independent of their social position or of their financial competency, or even of their religious affiliations. It's well to realize this and we believe it to be a much sounder point of view than to assume a dividing line which in fact does not exist. By means of scholarships, loans, and other grants the way has been opened in most institutions to students of superior ability and it is almost impossible to say that in America a student may not secure an education if he's particularly gifted. This is not to say, however, that there

are not many students of moderate attainments or above the average attainments who cannot secure a college education; but it seems most certainly true to say that there is nothing in the way of a gifted person to follow either a general or a professional education.

Perhaps all that it is necessary to do is to indicate briefly what part this type of American education plays in the industrial, economic, and material progress which is characterized by the development of America and our modern industrial system on a nationwide level. This is a thing that has developed progressively from decade to decade. It is characteristic of America. <sup>SEE INSERT ATTACHED</sup> I think those who have traveled abroad immediately sense <sup>THIS</sup> the fundamental differences between the philosophy which characterizes the education in various European countries and the philosophy which animates us here in America. In individual situations here and abroad this is not, perhaps, too evident; but if a thorough search and a thorough investigation is made with eyes open and ears attuned to all levels of financial competency and to all kinds of educational projects, we

Here in America we take education for granted. This great system of public education extends through all the formal ranges and now we could almost say, that with our programs of adult education, it extends from the cradle to the grave. We take for granted too our great American heritage that we look for education primarily for our success. It is a part and parcel of everything that we do. Instead of being picked individuals for one reason or another, our great system here in America extends to all classes and conditions of men and women and one of the most astonishing things we notice in our immigrant population is their appreciation of this point of view and this philosophy and we are surprised at the alacrity with which they take advantage of a public education as offered in America.

Of course the various countries differ widely as to the opportunities for education but it can be said without fear of contradiction that overall and in all phases in no other country has the educational picture been as favorable to the people as it has been in America.

find that the people of America are particularly sensitive to the part that education has played in the development of their country and in their thinking and are in the main desirous of not only higher standards of living, but higher standards in the field of the intellectual and moral; and there is, I think, with us a growing realization, if we stop to think about it, that one of the primary factors in our material, moral, and intellectual progress rests in our systems of schools.

Until very recently it has hardly occurred to some Europeans and perhaps very few Asiatics that a high standard of living is possible for all the people in their countries. A very considerable mass of the people have been used to very humble circumstances; and while not altogether satisfied with their environment, it has never occurred to them that it can be changed through themselves and by their own efforts. These great masses of people seem to be entirely ignorant of what a high standard of living entails with respect, particularly, to personal energy and responsibility. They are not aware of the advantages of not only material progress, but of intellectual

and moral progress; and while some people in some Asiatic countries perhaps even excel us in their concepts with respect to morals and religion and things emotional, a very low standard of living makes the attainment of these things and their cultivation on the part of all the people extremely difficult. They see or they pretend to see some of the disadvantages of a high standard of living and do not appreciate that intellectual, emotional, and moral values should be shared by everybody from the bottom clear to the top. The old class consciousness is hard to break down and the whole picture and the relation of its various factors was never brought home to them through a system of education which touches all the people.

In writing a modest history of any kind there should be a definite reason for it which is apparent and which serves as a motive to crystallize the material. In this case we want to show how in this particular metropolitan section of New Jersey--and perhaps in the state as a whole--the Newark Technical School and the Newark College of Engineering have been active and potent factors in the overall

development of the community. There seems to be a little misunderstanding as to the role and as to the contribution of projects of this character as sometimes springs up between different types of educational projects, and we want particularly in this history to point out that this seeming antagonism *As between arts and engineering* is not only unwarranted, but not based really in fact.

There seems to be a feeling in some quarters that the arts college is different and has objectives some way antagonistic to technological institutions. As a matter of fact, they are both simply phases of the same general problem which faces our American culture and our American way of life. We may learn from our church, from our college, or from any other source, of the things which are worth most in this life and which we ought to cultivate. We can learn something of the background and the philosophies which activated the founders of America to pledge "their lives, their fortunes, and their sacred honor" to this way of life; but from whatever source this information and this inspiration for a broader and better life comes, there must

be someone who points out the way to a fulfillment of this dream or this desire. How do we get the thing we want? What is the price of our liberty? We must recognize that one of the most fundamental things is to relieve people of some of the intolerable physical burdens which bear down so heavily upon great segments of the human race. We must have things to eat; we must have things to wear; we must have housing; and unless these needs are met, real cultural development is not possible. How they are to be met in our developing and expanding economic scene is the problem which comes to a technological institution. There is nothing in this philosophy at variance with the college of arts or with any other agency striving to sensitize Americans to their duties and their responsibilities.

It is a far cry from the old slavery of the Greeks and the Romans where the needs of the people were largely met by inefficient human labor with all its economic and moral drawbacks to a situation where the mind of man has managed to design and invent and perfect means which furnish to a very considerable number of the people luxuries not

only comparable, but much superior to those enjoyed, for instance, by the most favored of the Greeks and the Romans. It does not change the picture at all to realize that while the level of culture of a favored few in these countries was high, and while the culture of a favored few is at an extremely high level in many of our Asiatic countries now, that we with our Western civilization are the first to make it possible for a great mass of the people to enjoy freedom from slavery.

This is not a simple matter and has not been a simple matter; and as the wants and even the needs of the people increase, the question of keeping pace with the material needs increases at an amazing rate. The work of the scientist and the engineer is primarily concerned with the problem of not only increasing the number of kinds of material machines, but also increasing their productivity so that their output may be more widely distributed. The importance of this is sometimes overlooked but we have accustomed ourselves to a general way of life which is absolutely dependent upon the facilities which

have been made possible by technology. We need only to envision a long continued failure of our public utilities with no light or heat possible, the failure of our transportation system, and perhaps worst of all, the failure of our water supply and sewerage disposal. These things which are unknown to some parts of the earth have become commonplace with us and the engineer finds himself concerned primarily with the development of problems of this character which in the last analysis free a considerable number of the population by means of developments which vary through a very wide field.

On the material side there is a certain degree of fatalism about some of our neighbors which has grown up for centuries and is perfectly understandable when we think of the external environment, but this makes them rather insensitive to the fact that they have a right to the same living conditions which surround a family in a much higher income bracket. To be true, this right perhaps is not inherent in their mere existence, but in their capacity to contribute to the material and intellectual welfare of their communities. It

seems to us, as we view the foreign scene, somewhat pitiful to see children who have grown to manhood and womanhood without the slightest chance to develop either themselves or join in the development of their communities or states.

There are three things which probably should be mentioned in connection with our school system. The first is that it is self-imposed. It is of our own choice. It encompasses all of us to a greater or lesser degree. It is something in which every taxpayer joins. It is not externally imposed but it is the essence of the American way of life, the American way of thought. It operates on the principle that in America brains are where you find them, ~~that they come up from the bottom as easily as they come down from the top and~~ It is tremendously important to us on all fronts that we attempt to use from the bottom clear to the top all the brains that we have in America. If we are to stay in the forefront of world economy, we must utilize every ounce of brains which are available no matter where they may be found.

So that, in the first place, our system of education as a whole brings to the people at large not only some of the higher and better things of life, but a knowledge that socially they have a right to shape their own ends and to enjoy, if they have a reasonable supply of energy, judgment, and competence, the right to considerably more than a bare subsistence.

We often hear it said that every boy in the United States is brought up to believe that he can be President. While this, it would seem, is literally true, and while it may have its disadvantages, it has tremendous advantage, particularly in the motivation and the morale of all our citizens. It keeps alive in their minds the possibility of moving from the low to the higher brackets of income and of intellectual pursuits and of moral stature as a perfectly normal procedure. The creation of this desire, the knowledge that there is a fair chance of fulfilling the desire, and the continued motivation and spurring of an American to his greatest endeavors has had and we hope is having a tremendous effect on the whole economy and on the spirit of our people---

upon their aggressiveness, their industry, upon their intellects, and their morals. This has characterized us from pioneer days. This in itself is a tremendous factor, a wonderful heritage, sure to be defended at all costs.

In conjunction with it we have seen and come to realize that with this promise of a higher standard of living we must do something to fulfill it. We must implement our people, our organizations of production and distribution, so that they can reasonably realize what has been promised and what they hope for; and hence we supplement our primary and secondary education by professional education, by business education, by courses in economics and curricula in other fields which attempt not only to develop the material, but the moral, intellectual, and spiritual side of life.

We have vocational schools on the secondary level, colleges and universities, technical schools, parochial and denominational schools, and these all have for their ideal the utilization of every ounce of brains we have available. This multiplies manyfold the potential

capacities of our youth who finally turn into captains of industry, doctors, lawyers, engineers, teachers, and what not. It multiplies manifold the ease with which we implement our great economic and industrial machinery. In other words, by this education of our own choosing which touches us all, which is a part of our way of life, which is not imposed by any external factor, by this education we create the desire, we point out the possibilities—the possibilities of every man, woman, and child to raise his standard of living far beyond anything that was dreamed of half a century ago. We show them that there is not only a chance for life, but a chance for living abundantly. Then by the same system we make it practically possible to attain the thing which we have promised. We not only make it possible, but we point out the most direct, efficient, and effective ways to do this. It seems that the position we hold in the community of the world has been made possible directly by our system of education. The position we hold is, of course, the cause for much jealousy and perhaps it is entirely reasonable to suppose that we are looked down upon as material because we possess the material things in a great degree, but this does not preclude the possibility of the possession of other advantages in other fields.

This is not a situation limited to some parts of America—it is something that characterizes almost all of our communities. Some of us perhaps are a little more backward and need a little spurring, and some of us have gone forward and outdistanced our neighbors; but we are all sharers to some extent in this situation. So in developing some of the interesting things that have characterized the industrial and commercial development of Newark, it seems not only wise, but actually necessary, to link closely with its people, its industry, its commerce, its culture, and its way of life a thing which we must consider to be most important and that is its educational system and the correlation of that educational system from top to bottom with the material, economic, emotional, and moral development which has characterized this locality, remembering that this is not unique, but that the story here is the same as the story in many places. The story is, however, with us, in a sense an individual one—it involves certain people, certain industries, certain unique developments which have taken place here and which give a community its form and color. We have helped to make Newark and its subsidiary community what it is today, and the effect of our institution on the State as a whole has not been inconsiderable.