

THE BUSINESS COMMUNITY AND EDUCATION
Speech by Darryl R. Francis, President,
Federal Reserve Bank of St. Louis, at
Dedication of Edwardsville Campus,
Southern Illinois University,
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It is a personal delight to have this opportunity to join you at this dedication of the Edwardsville Campus of Southern Illinois University. It is especially good to welcome another great university into the St. Louis Metropolitan Area. I am sure that the area will be greatly benefited by the presence of another major institution of higher education.

This new campus demonstrates the fact that we in the United States believe that all citizens have the right to obtain a general education. This right, however, was not always the case. A backward glance indicates the uniqueness with respect to education of both this nation and this age. Recognition of need for mass education for all citizens is a relatively recent thing. Until the Nineteenth Century, education was essentially a privilege of the aristocratic groups in most nations of the world. Some of our own states had compulsory education systems as far back as the 1850's, but it was not until the close of the First World War that all states of the union had passed compulsory education laws.

We in the United States lagged much of Western Europe in recognizing the need for some education for all citizens. The first compulsory national education system was instituted in Prussia^{1/} in the mid-1700's. Most other Western European nations followed with compulsory school systems about 100 years later. Thus, by 1918, when education finally became compulsory throughout the United States, most of the great commercial nations of the world had decided that all citizens should have some schooling.

The educational system in the United States, however, developed differently from systems in Western Europe. In contrast to those systems where elementary education was designed for the lower classes and higher education for the upper classes, our system developed along a ladder-type structure. Beginning with the first year of schooling, it extended through graduate and the professional levels. Every child is free to begin at the lowest level and progress through the grades and schools as far as his abilities and ambition will take him.

This idealistic program is indeed a heroic assignment for our educational system. We have taken into the school system a greater proportion of our children and kept them there longer than any other

1/ Source: The Encyclopedia Americana.

nation. While our population has increased 4 times since 1880, our enrollment in secondary schools and colleges and universities has increased more than 80 times. Of our population in the 18-to-21 age group, more than 30 per cent were enrolled in institutions for higher education in late 1965. In comparison, only 10 to 12 per cent of this age group in other advanced countries enrolled in higher education in recent years. Our land grant colleges became symbols of equality and a means of realizing an ideal -- so did the hundreds of other colleges and universities that sprouted and grew all over the country.

This approach to an education for all the people has been criticized by intellectuals both at home and abroad. Many critics have contended that we have sacrificed quality for quantity. Europeans are often bewildered by our great multitude of colleges and universities lacking uniform standards for admission or graduation and varying in quality from very high to very low. We doubtless have been guilty of overlooking some quality aspects of education in the pursuit of our goals of equal access to educational facilities and a maximum education possible for all citizens. Nevertheless, we are rapidly approaching our goal which is that anyone who has the ability and ambition can say that he or she has received a college degree. According to the U. S. Department of Health, Education and Welfare, more than 550 thousand students in the nation earned degrees in 1963, and this number is

expected to double by 1975 when about 1.1 million are expected to receive degrees either at the first, second, or doctorate level.

We are not embarrassed because of our efforts to educate all the people. We recognize that wide disparities exist in the quality of our colleges, universities, and our college graduates. Nevertheless, we have decided that this disparity is not totally incompatible with the achievement of excellence which is said to have been so devoutly pursued in Western Europe. We have discovered that we can achieve both high quality and mass education with our diversity of institutions. Our best colleges and universities compete in quality with the finest that Europe can offer. On the other hand, the remaining schools carry the rest of our students to the maximum of their abilities.

We have for many years recognized the close association between individual training and levels of income and welfare. Numerous studies have been made which indicate the wide difference in earnings between college and high school graduates. One study by Morgan and David using 1959 data^{2/} indicates that the value of a college degree is about \$1.00 per hour to those in the 35-44 age bracket and \$1.50 per hour to those in the 45-54 age bracket. Translated into annual wages, this amounts to \$2 thousand to \$3 thousand

^{2/} Quarterly Journal of Economics, August 1963.

per year. On the basis of these data, a person during his (her) 40 post-college years of productive work will earn \$80 thousand to \$120 thousand more with a college education than would be earned by entering the labor force with only a high school diploma.

These studies recognize the problems of measuring the influence of educational achievement on income. Those entering college generally have higher intelligence test scores and are perhaps more ambitious than those who do not. Also, college graduates are on the average from families having greater wealth than other families. In such cases parents can often place their graduate sons and daughters in higher paying positions than would be possible for less fortunate individuals. Allowances were made for all such factors in the study cited.

Although the benefits to the individual alone would appear to justify all our efforts on behalf of education, more recently another benefit from education has been recognized which focuses the world's attention more than ever on America's mass educational experiment. That benefit is the part which education plays in the over-all rate of a nation's economic growth. In studying the growth patterns of firms and nations, economists have long recognized the parts that are played by the basic factors of production; namely, labor, management, and capital -- including land. We have noted

that some firms can combine these factors of production in such a way that they will grow substantially faster than other firms. We have also observed that some nations, while apparently using the same factors of production, will grow at a significantly greater rate over a long period than will other nations.

In the past it was assumed by most scholars that a large part of the disparity of growth rates among nations could be accounted for by the diverse rates of capital formation. When one compares growth patterns of two nations of similar people, the average level of management of all firms combined will apparently be about equal for both nations. Most such comparisons, however, have left much of the national growth pattern unexplained. When analytical tools are applied to growth, using the usual production inputs to make estimates of growth rates, there remains a substantial unexplained residual. This leads to the question: What is being omitted from the growth problem that leaves so much unexplained after all labor and non-human capital have been accounted for?

This questioning has led to the conclusion that a unit of labor is not the same from one person to another or from one nation to another. There is a wide difference in the average productivity of labor from one nation to another. Such differences in labor productivity, according to leading analysts, are related to the

acquisition of useful skills and knowledge, including formal education, and not so much to differences in muscular strength and willingness to work.

Thus, before any over-all measurement of a nation's productive capacity is possible, we must have measures of the skills and knowledge of the labor force, including its educational achievements. In this sense, labor has become an important part of a nation's capital stock. It has acquired skills that have economic value. The value of these skills is not of a trivial nature. It is sufficient to alter the patterns and over-all level of wages and real income of a nation.

Carrying this idea of investment in humans one step further, schools are a major means by which such investments are made. If we look upon our schools as a means of investing capital in humans, thereby increasing productivity, we can better understand our attainment of a long uninterrupted period of relatively high growth and our current high level of income which is the envy of the rest of the world. Also, as education is being more closely tied to economic growth, our system which provides for educating all citizens to the maximum of their abilities is receiving more intensive study, especially from our Western European friends.

This recently-discovered link between education and economic growth has greatly broadened the base of support for education in both our own country and the rest of the world. Professional

educators have always been major supporters for learning, perhaps primarily because of its cultural, moral, and political values. The aristocratic groups of Western Europe have supported the higher education of a limited number as a means of perpetuating class distinction. In our own zeal for equality we have given support to higher education for all people in order to further a truly classless democracy. At the same time, we have recognized its value to the earning power of the individual. Now, however, we have a much broader objective in supporting maximum schooling. It is a great social investment of capital in human resources from which the entire nation reaps the gains through higher output from the nation's factories, mines, farms, and all the supporting marketing and transportation facilities.

How well does our investment in schooling pay off? Professor T. W. Schultz, of the University of Chicago, one of this nation's outstanding economists, reports that education directly accounted for one-fifth of the nation's growth from 1929 to 1957.^{3/} Another one-fifth of growth during this period is estimated to be a consequence of basic research, approximately half of which is carried on within the educational establishment. In the field of agriculture, with which I am personally familiar, research has been especially productive.

3/ The Economic Value of Education, page 44.

The Land Grant College Experiment Stations have made many major contributions toward a rapidly advancing farm technology. Indicative of the speed of agricultural advancement is the rate of decline in the size of our farm labor force. During World War I, 13.5 million workers were employed on the nation's farms. During World War II, only 8.9 million farm workers were required, and today the farm work force totals only 4.6 million. One farm worker produced food and fiber for 7.7 people during World War I, for 15.5 people during World War II, and for 42.4 people in 1965.

Back to the Schultz study, our growth in real output per capita attributed to schooling and research during the 1929-57 period was greater than that attributed to the addition of material capital to the economy. Furthermore, Dr. Becker, an outstanding economist at Columbia University, estimates that the rate of return from our total investment in schooling at least equals and perhaps exceeds the rate of return on material capital investments.

The businessman, however, is interested in schooling not merely from the standpoint of national growth; we have a direct interest in both the research products and human products of our higher educational institutions. Within the Federal Reserve System we are in regular contact with colleges and universities relative to problems within our limited field of interest; namely, monetary policy and other problems associated with our bank supervisory functions.

I am sure that other firms and government agencies likewise have close working relationships with university research people relative to their mutual fields of interest.

It is to your other area of activity, however, the improvement of young men and women, that I would like to address the remaining portion of my remarks. Basic to these remarks is the fact that administrative and managerial responsibilities in business are becoming more and more complicated. Automation has greatly increased the upward pressure on skills for all levels of our work force. In all firms the level of competence required is constantly increasing. Only a few years ago it was unusual for us to hire a college graduate at the Federal Reserve Bank of St. Louis. In contrast, today a substantial per cent of our new employees are college graduates. Furthermore, we are vitally interested in the type of college education that the job applicant has received. That brings me to the core of this discussion; namely, the type of training that we would prefer for those whose energy and abilities are sufficient to take them to senior positions in business firms.

No longer is excessive specialization desired. In fact, undue specialization in one or two disciplines may well lead to a dead end rather than provide an avenue to deeper and broader understanding and greater responsibilities. I am thinking primarily of the tendency in some colleges of agriculture, business, and education to load their curricula with their own special courses. In turn, their students are perhaps denied the opportunity of obtaining a general education. A broader educational background than that provided by most of these specialized

colleges is urgent.

Many college courses in agriculture are designed to provide skills needed for functions on the farm. Agriculture, however, is becoming less and less a function carried out on the farm.

Most college programs for training school teachers are subject to similar criticism. A recent special studies report of the Rockefeller Brothers Fund found that programs for the preparation of teachers are rigid, formalistic, and shallow. It also indicated that the requirements for teacher certificates were so technical and trivial as to make it unlikely that the better liberal arts students would attempt to enter the teaching profession.

A recent report by the Committee for Economic Development recommended that business school curricula be pruned to reduce vocationalism and over-specialization. The report further suggested that courses in typing, shorthand, elementary bookkeeping and other narrow vocational courses had no legitimate place in a 4-year college program.

I am sure that similar problems exist in other colleges. The college graduate of the future should be more than a specialist in a narrow field. In other words, the colleges should move away from the trade school concept of education. I recognize that deciding what is important and what is not important in education is a very difficult problem. Yet, it is an extremely vital one, particularly for the more able students.

I believe that I am in tune with a substantial portion of the business world in wanting to see on a college graduate's transcript, regardless of his or her major field of interest, a sizable number of courses in the basic sciences, mathematics, statistics, English, and the social sciences. Such training enables one to interpret what goes on in the surrounding world. It provides the basis for a well-rounded, imaginative, and intelligent human being. A large portion of our technology becomes outdated within a decade. It is extremely wasteful for the better students to spend four years or more learning current techniques and methodology that are so short lived, when the opportunity is available to equip them with the basic mental tools for the much greater variety of tasks in modern business management. To be more specific, for the better students, I strongly favor a liberal arts program of training during the undergraduate years, with specialization to be "iced on" at the graduate level. On the other hand, the less capable can be sorted out mercifully by encouraging them to take the more routine type of courses. In closing, I would like to read to you a paragraph from a booklet published in 1958 by the Rockefeller Fund entitled "The Pursuit of Excellence."

There is a danger of training scientists so narrowly in their specialities that they are unprepared to shoulder the moral and civic responsibilities which the modern

world thrusts upon them. But just as we must insist that every scientist be broadly educated, so we must see to it that every educated person be literate in science. In the short run this may contribute to our survival. In the long run it is essential to our integrity as a society. We cannot afford to have our most highly educated people living in intellectual isolation from one another, without even an elementary understanding of each other's intellectual concerns. Such fragmentation must lead to a loss of social purpose.

I heartily concur with these comments. However, in addition to the moral and civic values of a college education, I would like to emphasize again that the college or university also has another function. It is a place where young men and women can add to their capital stock of skills and knowledge, thereby enhancing their future earnings. Furthermore, from a social point of view our colleges and universities might well be looked upon as factories which add to the nation's productive capacity in the form of an enlarged stock of human capacity to produce. In this context this new SIU campus is the equivalent of another permanent stream of high earning capital which will produce a continuing flow of income into the area it serves.