

of \$180,000 more than individuals with only a high school diploma, while the lifetime earnings of high school graduates average \$68,000 more than those of persons with only an eighth-grade education. To the degree that individuals living in certain regions or belonging to certain groups do not have the opportunities to attain higher levels of education, their potential contribution to the economic system and their potential share in its benefits cannot be realized.

The gross differential of \$180,000 for college graduates' earnings is noted in several of the separate statements for higher education programs. These refer to the Department of Labor as a source for estimates that lifetime earnings of male high school graduates are \$272,600, whereas those of college graduates are \$452,000.

Census data assembled in a recent report of the Department of Commerce likewise associate large differences in individual incomes with differences in education. In 1964, the median income of males, 25 years of age and older, was \$3,983 for those with only 8 years of elementary school, \$6,266 for those with 4 years of high school, and \$8,805 for those with 4 years or more of higher education. The median amount for each group was much higher in 1964 than in either 1939 or 1949, but the rate of increase was considerably more rapid for high school and college graduates than for men with elementary education alone. Moreover, there was a substantial decline in current dollars from 1959 to 1964 in the median income of the group with the least schooling, whereas there were material increases for other groups.³⁰ Such data illustrate the increasing importance of education as a prerequisite to the better-paying jobs.

In a study of the sources of economic growth in the United States, Edward F. Denison estimated that the labor force of 1950, if it had been as well educated as that of 1960, would have contributed 10.3 percent more to production than it actually did. Similarly, he estimated that if the labor force of 1930 had been as well educated as that of 1960, it would have contributed about one-third more to production than it actually did. These estimates assume that males aged 25 and over are typical, and that differentials in labor earnings that are attributable to differences in education equal three-fifths of observed differentials in money income among adult males of the same age classified by years of education. A shift from three-fifths to any other assumed ratio would raise or lower the proportion of total product ascribed to education but would not alter the general conclusion. Denison noted that the average labor force member in 1960 had spent four-fifths again as many days in school as his counterpart in 1930. He went on:

With such enormous advances, it is not surprising to find that improved education has made a major contribution to economic growth. By my calculations, from 1929 to 1957 it raised the average quality of labor by 29.6 percent, or at an average annual rate of 0.93 percent. * * * The contribution was equivalent to an increase of the same amount in the quantity of work done, and the procedure used in that connection may be followed to estimate its contribution to the growth of national product. Multiplication of 0.93 by 73 percent, the average share of labor in the national income over the period, yields 0.68 percentage points, or 23 percent, of the 2.93 percentage point growth rate of the national product as the direct contribution of more education. (After further adjustments, my final estimate remains 23 percent.)

When related to the growth of national product per person employed, the contribution rate of additional education appears still more impressive. My

³⁰ U.S. Department of Commerce, Bureau of the Census, Economic Research and Analysis Division, "Long Term Economic Growth: 1860-1965" (October 1966), pp. 147, 197.