U. S. DEPARTMENT OF COMMERCE
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CURRENT POPULATION REPORTS

POPULATION CHARACTERISTICS

FOR RELEASE

January 12, 1959 | Washington 25, D. C. | Series P-20, No. 91

PROJECTIONS OF EDUCATIONAL ATTAINMENT IN THE UNITED STATES: 1960 TO 1980*

This report contains projections of the educational attainment of the population in the United States, by age and sex, for 1960, 1970, and 1980. Most of the data presented refer to the adult population 25 years old and over, nearly all of whom have completed their regular education. Data are also included which show projections of the total number of high school graduates and college graduates in the country at future dates, according to specified assumptions.

These are the first projections of educational attainment ever published by the Bureau of the Census.[1] The methodology which has been employed has therefore been presented in some detail in this report. Basically, a cohort technique was used to determine the educational experience at each future date of each age-sex group which had completed its formal education. For example, the educational levels attained by men 50 to 54 years old at a given future date were assumed to be the same for men 40 to 44 years old ten years earlier. The probable future educational attainment of persons who, at the present time, have not yet completed their schooling was based on three different assumptions about continuation of past trends or present levels. The projected percentage distributions by educational attainment were then applied to projections of the population at each date to obtain the numbers of persons expected to attain various levels of education.

An underlying assumption of these projections is that there will be no unusual political or economic conditions and no extreme changes in educational practices in this country, during the years which the projections cover, that might seriously affect patterns of educational attainment. Therefore,

Table A.--HIGH SCHOOL AND COLLEGE GRADUATES, BY SEX, IN THE TOTAL POPULATION OF THE UNITED STATES: 1940 AND 1950, AND PROJECTIONS TO 1960, 1970, AND 1980

(Data for 1940 and 1950 for persons not reporting on educational attainment distributed prorata; data for 1960, 1970, and 1980 based on inclusion of Series B projections for younger ages)

Year and sex	High school graduates[1]		College graduates[2]	
	Number (thousands)	Percent of population 15 years and over	Number (thousands)	Percent of population 20 years and over
BOTH SEXES				
1940	25,670	26.0	3,852	4.5
1950	38,293	35.0	5,951	6.0
1960	51,571	41.7	8,109	7.3
1970	70,341	48.0	10,819	8.5
1980	95,115	54.7	14,895	9.8
MALE				
1940	11,838	24.0	2,258	5.2
1950	17,591	32.9	3,369	7.0
1960	23,972	39.7	4,820	9.0
1970	32,547	45.7	6,537	10.7
1980	43,905	52.0	9,213	12.6
FEMALE				
1940	13,832	28.0	1,594	3.7
1950	20,703	36.9	2,582	5.1
1960	27,599	43.5	3,289	5.8
1970	37,794	50.1	4,282	6.5
1980	51,209	57.2	5,682	7.2

[1] Persons who completed 4 years of high school or beyond.
[2] Persons who completed 4 or more years of college.

[1] Projections of educational attainment were prepared in 1947 by Census Bureau staff members and were published by the U. S. Office of Education [Hope Tisdale Eldridge and Joel Williams, "School Population of the Future," School Life, 30 (November 1947), 22-27]. Recent projections of educational attainment have also been published in Metropolitan Life Insurance Company, Statistical Bulletin, 39 (August 1958), 3-5.

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For sale by the Bureau of the Census, Washington 25, D. C. Price 10 cents.
Annual subscription (Series P-20, P-23, P-25, and P-27, combined), $2.50; for foreign mailing, $3.00.

these projections should not be regarded as predictions, but rather as patterns of educational attainment resulting from specified assumptions about future population growth and future proportions attending school at each age.

PROSPECTIVE TRENDS IN EDUCATIONAL ATTAINMENT

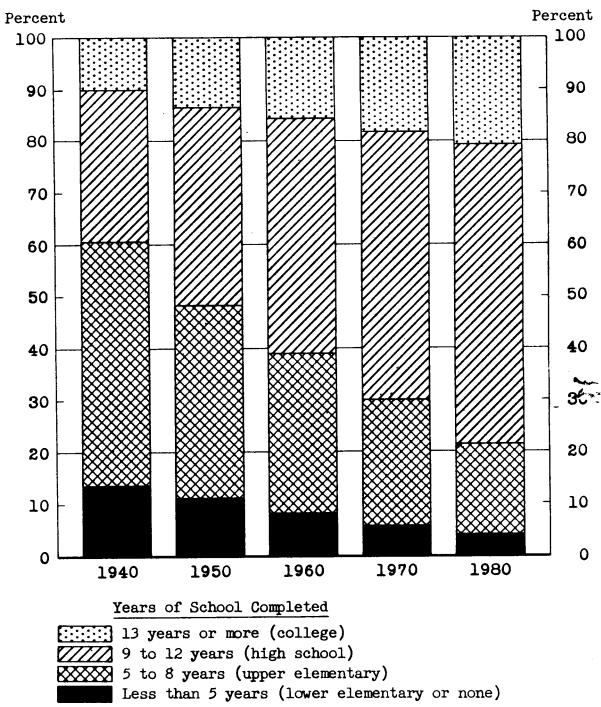
According to the projections, there will be about 52 million high school graduates in the country in 1960, 70 million in 1970, and 95 million in 1980, as compared with 38 million in 1950, the year of the last national census. Thus, the number in 1980 would be 2½ times the number in 1950. Correspondingly, the number of college graduates is expected to increase from the 6 million counted in the 1950 Census to 8 million in 1960, 11 million in 1970, and almost 15 million in 1980 (table A). The figures for future years use the Series B projections for younger age groups; if Series A projections were used, the number of high school graduates would be higher by approximately 1,000,000 and the number of college graduates by about 300,000.

These increases in the numbers of people completing high school and college reflect not only a continued increase in the size of the population but also expectations of successively larger proportions of the population going on to complete higher levels of schooling. According to the projections, the percentage of the population 15 years old and over who are high school graduates will rise from 35 percent in 1950 to 55 percent in 1980. Likewise, the percentage of college graduates in the population 20 years old and over is expected to increase from 6 percent in 1950 to 10 percent in 1980. At each future date, as in the past, a greater percentage of women than men are likely to have completed high school, but more men than women are likely to have continued on to get their college degrees.

Along with an increase in the proportion of the population graduating from high school and college will come sharp reductions in the percentage of the population who have had less than five years of schooling. In 1940, about 14 percent of the population 25 years old and over had either never attended school or had completed no more than four years of formal education. By 1950, this proportion had been reduced to 11 percent and, based on the projections, only 4 percent are expected to be in that category by 1980 (figure 1).

Changes in the average (median) number of years of school completed for various dates in the future provide further indication of continued improvement in educational attainment. Whereas the average educational level of the population 25 years old and over in 1950 was 9.3 school years (that is, about half of the population had completed the ninth grade), the average is expected to be about 10.8 years in 1960, 12.0 years in 1970, and 12.2 years in 1980. It is anticipated that the median level of education for the adult population will eventually stabilize at approximately the twelfth year of school. Specifically, as persons now in older age groups (whose average educational level is relatively low) leave the population through death, they are being replaced in these ages by persons with greater amounts of schooling. A median of 8.8 years had been attained by the population 45 to 54 years old in 1950, and the projections show that this age group in 1960 will have completed an average of 10.3 years, in 1970 the same age group will have a median of 12.1 years, and in 1980 its median will be 12.3 years.

Figure 1.--YEARS OF SCHOOL COMPLETED BY THE POPULATION 25 YEARS OLD AND OVER IN THE UNITED STATES: 1940 AND 1950, AND PROJECTIONS TO 1960, 1970, AND 1980



Note: Figures for 1970 and 1980 include Series B projections for younger adult ages (see text for explanation).

Source: Table 1, and 1940 Census of Population, Vol. II, Characteristics of the Population, Part 1, U. S. Summary.

In tables 1 and 2 of this report, two series of projections are given for the younger adult age groups in 1970 and 1980. Since most of these persons are now attending school, their future educational attainment is subject to a greater degree of uncertainty than that for older persons; consequently, it was considered prudent to show two series of attainment projections reflecting different assumptions about future trends. Only one series has been presented for older age groups in 1970 and 1980, and for all age groups in 1960, since nearly all of these persons have completed their schooling by the present date.

METHODS AND ASSUMPTIONS

The basic technique used in making these projections of educational attainment was the application of projected percentage distributions by attainment for the various age groups to projected numbers of males and females by five-year age groups at future dates. For this purpose, cumulative percentages in the successively higher levels of education were used because they tend to be more stable than percentages for specific levels of education. Projections of educational attainment at specific levels were obtained by subtraction of successive cumulative levels. The 1950 Census of Population and the Current Population Surveys of October 1952 and March 1957 were the sources for most of the data on education used in the projections.

The specific methodological steps taken, for males and females separately, were as follows:

1. Cumulative percentage distributions by education for five-year age groups 30 years old and over in the 1950 Census were held constant in each cohort to 1980. This step provided the educational distributions for age groups 40 years and over in 1960, 50 years and over in 1970, and 60 years and over in 1980. Thus, it was assumed that the distribution by education would remain constant for these age cohorts from ages 30 to 34 on. This assumption implies that (a) very few persons beyond age 34 continue their regular schooling to the point where they would be classified differently in a census education distribution, and that (b) mortality rates are the same regardless of education. In regard to the latter assumption, some studies have suggested that, in fact, mortality is higher for the more poorly educated; but adequate data on these differentials are not available. However, it is likely that the effect on the projected numbers would be small if this factor could be taken into account.

2. Under the assumption that the age cohort 25 to 29 years old in 1950 reached its peak educational level in 1955 when it reached ages 30 to 34 years, the cumulative percentage distributions by education for ages 30 to 34 years from the October 1952 and March 1957 surveys were averaged to obtain an estimate of the educational distribution for persons 30 to 34 years old in the spring of 1955. This distribution was then held constant for this cohort to 1980. Thus, the distributions were obtained for those aged 35 to 39 years in 1960, 45 to 49 years in 1970, and 55 to 59 years in 1980.

3. The cumulative percentage distributions by education for persons 25 to 29 years old in the October 1952 and March 1957 surveys were averaged to obtain an estimate of the distribution for persons 25 to 29 years old in 1955. Because this group had already reached a high level of education by ages 25 to 29 and since further school attainment by this group for the ensuing five years was expected to be relatively negligible, the percent distribution for this group in 1955 was assumed also for persons 30 to 34 years old in 1960 and, consequently, for those 40 to 44 years old in 1970 and 50 to 54 years old in 1980.

4. Many persons in the age group that will be 25 to 29 years old in 1960 would not have had a chance to complete four years of college by 1957 (when they were 22 to 26 years old) but would have had a chance to complete the first year of college by that time. A "normal" cumulative percent distribution by education was obtained for those 25 to 29 years old in 1960, therefore, by (a) assuming that the educational distribution through the first year of college that was attained by those 22 to 26 years old in 1957 would be maintained by that cohort, and (b) assuming that the ratio of those who will eventually complete four or more years of college to those completing one or more years of college would be the same for this group as for the age group 25 to 29 years old in 1957.

Since many of the males who will be 25 to 29 years old in 1960 had served in the Korean conflict and, hence, were eligible for veterans' educational benefits to continue their schooling, it was assumed that the percentage of these men who will probably eventually complete one or more years of college (and the percentage who will complete four years of college) will rise above the expected "normal" percentage described above. Thus, it was assumed that the increase would be the same as that which was observed from ages 25 to 29 years to 30 to 34 years for male cohorts who had benefited from the "GI Bill" of World War II. The new distribution applied to persons 30 to 34 years old in 1965 and, consequently, to those who will be 35 to 39 years old in 1970 and 45 to 49 years old in 1980.

5. Cumulative percent distributions by education for younger adult ages in future years (25 to 34 years old in 1970 and 25 to 44 years old in 1980) were projected using two series (Series A and B) reflecting different assumptions about future trends in education. Series B assumes one rate of improvement, and Series A a higher rate of improvement, in the educational levels that will be attained by persons who reach younger adult ages by 1970 or 1980.

For Series A and B, attainment data for 1960 at the high school and college levels for successive age groups 25 years old and over were plotted on semilogarithmic paper, and the trends shown by the successive age groups were extrapolated to obtain expected future attainment levels for younger groups. Series B was projected by extending the trend established by all five-year groups combined. Series A was projected by extending the trend established by the groups aged 25 to 29, 30 to 34, and 35 to 39 in 1960, which showed a short-time upturn in their attainment levels from previously depressed levels to the level of the long-run trend. For attainments at the elementary level, which were already close to 100 percent, the cumulative percentages for each younger cohort were increased so that the percentages approached 100 percent asymptotically. This

was accomplished by reducing the differences between the percentages and 100 percent for each cohort by 5 percent for Series B (and 10 percent for Series A) in order to arrive at projected percentages for the next younger age cohort. The reduction rates of 5 and 10 percent were based on Current Population Survey data for younger age groups in recent years.

A separate series was projected which shows the number of persons reaching each educational level, under the assumption that the percent of young adults attaining each educational level does not change after 1960. In table B, numbers from this series are shown for persons 25 to 29 years old in 1970 and 1980, along with comparable figures from Series A and B. Differences between each of the three series at a given date reflect the various assumptions about educational trends. Differences between 1970 and 1980 in the third series reflect variations in the size and distribution of the population at the two dates, since the two distributions are based on the same assumptions about educational trends.

Table B.--PROJECTIONS OF EDUCATIONAL ATTAINMENT TO 1970 AND 1980, FOR PERSONS 25 TO 29 YEARS OLD IN THE UNITED STATES, BASED ON DIFFERENT ASSUMPTIONS ABOUT FUTURE EDUCATIONAL TRENDS

(In thousands. See text for further explanation of alternative series)

Year and assumptions	Persons 25 to 29 years old	Years of school completed							
		None	Elementary school			High school		College	
			1 to 4 years	5 to 7 years	8 years	1 to 3 years	4 years	1 to 3 years	4 years or more
1970									
Continuation of--									
Short-term past trends in attainment of 25- to 29-year-olds (Series A)	13,640	84	230	417	501	2,758	6,191	1,622	1,837
Long-term past trends in attainment of 25- to 29-year-olds (Series B)	13,640	95	256	553	665	2,926	5,924	1,519	1,701
1960 patterns of attainment for 25- to 29-year-olds	13,640	105	283	912	1,097	2,848	5,442	1,465	1,488
1980									
Continuation of--									
Short-term past trends in attainment of 25- to 29-year-olds (Series A)	19,441	98	265	465	559	3,621	9,126	2,467	2,841
Long-term past trends in attainment of 25- to 29-year-olds (Series B)	19,441	121	323	649	781	4,022	8,792	2,206	2,546
1960 patterns of attainment for 25- to 29-year-olds	19,441	149	405	1,300	1,564	4,058	7,749	2,090	2,125

6. Projections of the percent completing high school and the percent completing college for persons under 25 years old in 1960 and 1970 were needed for inclusion in table A. Since attainment data had already been projected for these same cohorts in 1970 and 1980 (when they will be 25 years old or over), it was necessary only to determine the attainment levels of these cohorts in 1960 when many of them will still be attending school. This was done by assuming that the attainment levels these cohorts will reach in 1960 and 1970 will bear the same relationship to attainment in 1970 and 1980 as for older cohorts. Attainment levels for ages under 25 in 1980 were obtained by projecting the percentages arrived at for 1960 and 1970.

The percentage distributions by education projected for each age and sex group at each future date were applied to recently published projections of the population of the United States, by age and sex, for the corresponding dates. These population projections appear in Current Population Reports, Series P-25, No. 187. Where estimates of future births were involved in the present report (for the population 15 to 22 years old in 1980), the Series II population projections, which assume that fertility will remain constant at the 1955-57 level throughout the projection period, that mortality will decline at a moderate rate throughout the period, and that net immigration will add 300,000 persons per year to the population, were used.

The data on educational attainment in this report are regarded as referring to the spring of each year. Actually, the percentage distributions by education refer to the spring, whereas the population base refers to July 1. The effect of the discrepancy is small.

Current data used in projecting educational trends cover only part of the Armed Forces. The population projections include all of the Armed Forces, however. An implicit assumption in these projections, therefore, is that those Armed Forces not included in the 1950 Census and the Current Population Survey have an educational distribution like that of other males at the same ages. Since members of the Armed Forces are known to have a higher level of education than the general population in corresponding age groups, the educational achievement of men may be slightly understated.

DEFINITIONS AND EXPLANATIONS

The data in this report on educational attainment refer to the highest grade or year of school ever completed in "regular" schools. Such schools include graded public and private (including parochial) elementary and high schools (both junior and senior high), colleges, universities, and professional schools, whether day schools or night schools. "Regular" schooling is that which may advance a person toward an elementary or high school diploma or a college, university, or professional degree. Education in other schools is counted as regular schooling only if the credits obtained are regarded as transferable to a school in the regular school system.

The term "high school graduates," as used here, refers to persons who had completed four years of high school or beyond. The term "college graduates" is used here synonomously with persons who had completed four or more years of college.

The median number of years of school completed is defined as the value which divides the population group into two equal parts--one-half having completed more schooling and one-half having completed less schooling than the median. These medians are expressed in terms of a continuous series of numbers representing years of school completed. For example, a median of 9 indicates completion of the first year of high school and a median of 13 indicates completion of the first year of college. Also, allowance is made for the fact that many persons reported as having completed a given full school year have also completed a part of the next higher grade; thus, in computing the median, persons reported as completing 9 years of school are regarded as actually having completed 9.5 years of school. As of the spring, persons enrolled in school had probably completed somewhat more than one-half grade beyond their last full year, whereas persons who had left school had probably completed less than one-half year beyond their last full year, on the average.

The method of projecting educational attainment used here was based on information for the United States as a whole and applies specifically to the country as a whole. Therefore, the national patterns may not be directly applicable to each region, State, or local area. Educational attainment trends in specific areas in future years may differ from those for the country as a whole because of variations in the characteristics of the local population (age and sex composition, family income, attitudes toward education, etc.), in educational attainment of in- and out-migrants, and in educational opportunities for the local population.