

CURRENT POPULATION REPORTS

POPULATION CHARACTERISTICS

May 4, 1948

Washington 25, D. C.

Series P-20, No. 15

FILE COPY DO NOT REMOVE

EDUCATIONAL ATTAINMENT OF THE CIVILIAN POPULATION: APRIL, 1947

(The statistics presented in this report supplement the preliminary data published in Current Population Reports, Series P-20, No. 6)

Between 1940 and 1947, despite the interruption of the education of millions of persons which resulted from the war, the average educational attainment of the population 14 years old and over increased by about one year. In this period, the number of persons completing less than five grades of school decreased by about two million and the number of college graduates increased by 900,000 according to estimates issued today by J. C. Capt, Director, Bureau of the Census, Department of Commerce. As in 1940, females had a slightly higher average educational attainment than males. The average educational attainment of the nonwhite population continued to be lower than that of the white population at each age level, but at the younger ages the differences were somewhat smaller in 1947 than in 1940.

The figures for April, 1947, contained in this report are based on a sample survey conducted by the Bureau of the Census and are therefore subject to sampling variability. The smaller figures, as well as small differences between figures, should be used with particular care, as explained below in the section on reliability of estimates.

The formal schooling of many youths and young adults had not been completed by April, 1947, since many of them were still attending school at the time of the survey. Hence, the discussion immediately following is limited to the population 25 years old and over. Trends in the educational attainment of persons 14 to 24 years old are discussed in a subsequent section.

EDUCATIONAL ATTAINMENT OF PERSONS 25 YEARS OLD AND OVER

Age differences.--Statistics for April, 1947, on years of school completed, by age, indicate a definite and consistent relationship. The general pattern among adults of a higher educational level at successively younger ages reflects the historic trend toward more and more schooling. Among persons 25 years old and over (that is, those who may generally be considered as having completed their formal schooling), the median number of years of school completed was progressively lower with an increase in age, from 12.0 years (the completion of four years of high school) for persons 25 to 29 years old to 7.7 years (the completion of more than seven years of elementary school) for persons 65 years old and over. (The median year of school completed is that year which divides the population into two equal groups--one-half having had more formal education, and the other half having had less, than the median.) In addition, with increase in age, there is a consistent increase in the proportion of the population completing less than one year of high school and a consistent decrease in the proportion completing four years of high school or more.

Differences between medians for successive 10-year age groups were more than one full grade for the younger ages, as compared with about half a grade for the older age groups. (The differences between medians for the successive age groups 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65 years and over, were 1.9, 1.4, 0.4,

and 0.4 years, respectively.) It should be borne in mind that the educational attainment pattern for persons in the older ages represents schooling obtained almost entirely at a much earlier period. Therefore, the greater differences among persons who obtained their schooling in recent times stems, in part, from a quickened tempo in the expansion of educational facilities, enforcement of compulsory attendance laws, and the realization that a higher level of education is needed under conditions of present day living.

Those persons completing fewer than 5 years of elementary school (sometimes defined as "functional illiterates") constituted about 10 percent of all persons 25 years old and over in 1947. The percentage was about 22 percent for those 65 years old and over but was progressively smaller until for those aged 25 to 29 it was only 4 percent. About one-half of the population 25 years old and over had completed at least one year of high school, about one-third had at least finished high school, and about one-twentieth were college graduates. The proportion with at least some high school education and the proportion having at least finished high school were highest for the youngest groups, those 25 to 29 years old. The highest proportions of college graduates were found in the groups 30 to 34 and 35 to 44 years old, suggesting that some persons in the younger adult ages had not yet completed their education or had been forced to curtail their education as a result of the war.

Sex differences.--Among civilians aged 25 and over, the median number of years of school completed was 8.9 for males and 9.3 for females. A smaller proportion of females 25 years old and over than of males had dropped out of school after no more than elementary school training, about 48 percent as compared with 51 percent. On the other hand, a smaller proportion of females than males had had some college training. More males than females who had completed at least one year of college also graduated. Approximately 48 out of 100 such males were graduated, as compared with 40 out of 100 females.

The effect of the war on the higher education of women should be noted. Since the normal expectation of a progressively higher proportion of women with some college education for each younger age group is not borne out, and since only about one percent of women in the youngest group (25 to 29 years old) were enrolled in school, the deficit must represent a permanent effect of the war on the higher education of

these women. Earlier marriage and earlier entry into the labor market were the factors mainly responsible.

At each age level, females had a slightly higher median educational attainment than males. There were no striking variations, by age, from the pattern described above for all males and females 25 years old and over.

Color differences.--In April, 1947, there were still marked differences in the educational attainment of white and nonwhite persons. Of all white persons 25 years old and over, approximately 35 percent had completed four years of high school or more, whereas only about 13 percent of nonwhites in the same age group had acquired this amount of education. In terms of persons who had had some college education, the difference was just as striking, about 13 percent for white persons, as against 5 percent for nonwhite persons. At the lower end of the educational scale, the differences were also sharp. About 1 white person in every 10 had had less than 5 years of schooling (that is, was "functionally illiterate") as compared with about 3 nonwhite persons in every 10. The median years of school completed for adult whites and nonwhites were 9.4 and 6.9, respectively.

At each age, the median educational attainment of white persons was higher than that of nonwhite persons. As indicated by the median, whites 25 to 29 years old had completed high school, as compared with the completion of elementary school by nonwhites of the same age. Among whites 65 years old and over the median educational attainment was 7.8 years, as compared with only 4.0 years for nonwhites. Among whites who obtained most of their education more than a generation ago (those 65 years old and over), the proportion completing less than 5 years of elementary school is approximately equal to that of nonwhites who were recently educated (those 25 to 29 years old).

The slightly higher educational attainment level of women than of men was evident in both the white and nonwhite population. At each age, the median years of schooling of females was a little higher than, or at least equal to, that of males.

Changes since 1940.--The median educational attainment was higher in 1947 than in 1940 not only for the total population 25 years old and over, but also for almost all age-sex-color groups. In 1947, as compared with 1940, there

was a greater concentration of persons in the higher attainment groups. In 1947, approximately 33 percent of this adult population had completed four years of high school or more, as compared with 24 percent in 1940. On the other hand, in 1947 about 50 percent of the population had completed less than one year of high school, as compared with 60 percent in 1940. The greatest gain was evident among persons who had completed exactly four years of high school, from about 14 percent in 1940 to 21 percent in 1947. Increases at the college level were relatively small.

The increase in the educational level between 1940 and 1947 results not only from the increased schooling of the younger groups in the population since 1940 but also from the dying off of the older population. The group of persons who moved into the age group 25 years old and over between 1940 and 1947 (that is, those persons who were 18 to 24 years old in 1940) had a much higher average educational level than the persons who, during the 7-year period, left the group through death.

**EDUCATIONAL ATTAINMENT OF PERSONS
14 TO 24 YEARS OLD**

The higher educational attainment of persons 14 to 24 years old for successive age groups, ranging from a median of 9.2 years for persons 14 to 17 years old to 12.1 years for those 20 to 24 years old, reflects the longer opportunity for schooling among persons in the older ages.

A comparison of medians for 1940 and 1947 for each age-sex group indicates that there were slight improvements in the 7-year period. Despite the war, there was even a slight increase in the median for males 20 to 24 years old.

Between 1940 and 1947, there were significant increases in the proportions of high school graduates of both sexes, but not in the proportions of college graduates. A partial explanation may lie in the policy of the armed forces in allowing young men to complete high school before their entry into service.

As in 1940, the median educational attainment in 1947 was higher for females at each age than for males. In addition, females exceeded males at each age in the proportions of persons who were at least high school graduates or had had some college training. The differences tended to be greater in 1947 than in 1940.

The continuing reduction of "functional illiteracy" was evident in the decrease in the number who had completed less than 5 grades of school, from almost 1½ million in 1940 to less than 1 million in 1947. Most of these "illiterates" were not in school in 1947 and probably represent the noneducable segment of the population, such as mental defectives.

Data are presented in table 1 on the years of school completed by the civilian population 14 years old and over in April, 1947, and the total population 14 years old and over in April, 1940, by age, color, and sex, for the United States.

EDUCATIONAL ATTAINMENT BY SCHOOL ENROLLMENT

Many persons 14 to 29 years old had not yet completed their education, particularly those who were still enrolled in school in April, 1947. Therefore the educational attainment reported, especially for persons in the younger ages, is less than their eventual educational attainment. The following proportions of persons 14 to 29 years old, by age, were enrolled in school in April, 1947:¹

<u>Age</u>	<u>Percent enrolled in school</u>
14 to 17 years.....	81.2
18 and 19 years.....	27.7
20 to 24 years.....	10.7
25 to 29 years.....	3.8

At each age level, persons enrolled in school showed a slightly higher median educational attainment than persons who were not enrolled in school. Differences were greater for the older persons, those 20 to 24 and 25 to 29 years old enrolled in school having completed about one year more of schooling on the average than those not in school. Approximately half of the persons in these two age groups who were enrolled in school had completed one or more years of college, whereas of those not enrolled only 8 percent of the 20-to-24-year olds and 13 percent of the 25-to-29-year olds had had as much as one year of college.

Males who were 20 to 24 years old in 1947 were 13 to 17 years old in 1940. During the war years, therefore, a greater and greater proportion of them became eligible for service in the

¹ For more detailed data on school enrollment, see Current Population Reports, Series P-20, No. 12, "School Enrollment of the Civilian Population: April, 1947."

armed forces or were drawn out of the school population by the increased wartime employment opportunities. Both of these factors tended to produce in the male population of this age a "deficit" in the educational level that would have been attained under "normal" conditions. In 1947, males 20 to 24 years old enrolled in school had a lower median attainment than the comparable group in 1940, 12.8 years as compared with 14.0 years. In addition, about 41 percent of these males had completed one or more years of college in 1947, as compared with 69 percent in 1940. For those who had completed four or more years of college, the corresponding percentages were even more striking, 5 percent as against 14 percent. Of course, if sufficient numbers of these men remain in school long enough to complete their education, the "deficit" may be reduced in time. The increased enrollment rates among adult males since 1940, and especially since 1945, suggest that these men will make up for lost opportunities.

Table 2 presents data on years of school completed by persons 14 to 29 years old, by school enrollment, age, and sex, for the civilian population in April, 1947, and the total population in April, 1940, for the United States.

VETERANS OF WORLD WAR II

Although many of the male veterans of World War II had been obliged to leave school to serve in the armed forces during the war, veterans 18 to 44 years old had a higher median educational attainment than the nonveteran group 18 to 44 years old--12.0 years for veterans, as compared with 9.9 years for nonveterans. This difference is due, in part, to the fact that the "selective" process used by the armed forces in eliminating persons in the lowest educational levels would tend to raise the average for the veteran group and also that some males who did not enter the armed forces tended to leave school at an early age to take war jobs. However, the difference is partly a matter of age since the nonveteran group contains a greater proportion of persons in the older age groups where attainment levels are generally lower.

In each of the age groups, the median educational attainment is higher for veterans than for nonveterans. Differences in medians are more than 1½ years for each age group between 20 and 44 years.

The percent distribution by educational attainment provides a more explicit picture of

differences in educational status between veterans and nonveterans than the comparison of medians. At each age, the percentage of veterans who had completed less than five grades of school is lower than that of nonveterans. The differences were greatest in the 20-to-29 year age group, as a result of the "selective" process in induction (mentioned above), and in the group 45 years old and over, where many of the former officers of the armed forces were concentrated. However, at the upper end of the educational scale, there is evidence that veterans, especially those under 30 years of age, had not yet "caught up" in their schooling with nonveterans of comparable age.

Table 3 presents statistics on years of school completed by the male civilian population 18 years old and over, by school enrollment, veteran status, and age, for the United States, in April, 1947.

DEFINITIONS OF TERMS AND EXPLANATIONS

Population.--The figures for 1947 shown in this report relate primarily to the civilian population. Approximately 254,000 members of the armed forces living off post or with their families on post were included, but all other members of the armed forces were excluded. For simplicity, this 1947 population is called the "civilian population" in this report. Where figures for 1940 are shown, they relate to the total population including all members of the armed forces (about 267,000) in continental United States on April 1, 1940.

Age.--The age classification is based on the age of the person at his last birthday.

Color.--Persons of Mexican birth or ancestry who were not definitely Indian or of other nonwhite race are classified as white. The group designated "nonwhite" consists of Negroes, Indians, Chinese, Japanese, and other nonwhite races.

Highest grade of school completed.--The data for years of school completed for both 1940 and 1947 are based on the replies to the enumerator's inquiry as to the last full grade that each person had completed in the regular school system--public, private, or parochial school, college or university.

The median year of school completed may be defined as the year which divides the population group into two equal parts--one-half having com-

pleted 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, the completion of the first year of high school is indicated by 9.0 and of the last year of college by 16.0.

School enrollment.--The school enrollment statistics are based on the replies to the enumerator's inquiry as to whether the person had been enrolled at any time since the preceding March 1 in any type of day or night school, public, parochial, or other private school in the regular school system. Such schools include elementary schools (but not kindergartens), junior or senior high schools, and colleges or universities. Persons enrolled in special schools not in the regular school system, such as trade schools, business colleges, or extension schools, are not included in the enrollment figures. Persons enrolled in classes which do not require physical presence in school, such as correspondence courses or other courses of independent study, and training courses given directly on the job are not reported as enrolled in school. The data on school enrollment shown for 1947 and 1940 are essentially comparable in the coverage of schools and colleges.

Veteran of World War II.--A veteran of World War II is defined as a civilian who has been a member of the armed forces of the United States on active duty at any time between September 16, 1940, and the time of enumeration. Persons on terminal leave are included as veterans. This report shows separate data for male, but not for female, veterans of World War II.

SOURCE AND RELIABILITY OF THE ESTIMATES

The 1947 estimates presented in this report are based on data obtained in connection with the Census Bureau's Survey of Population, Labor Force, and Housing conducted in April, 1947. This survey covered about 30,000 households located in 148 sample areas in 44 States and the District of Columbia, each area comprising one or more counties or parts of counties. The households surveyed were private dwelling units and other units in dwelling places such as rooming houses, hotels, school dormitories, and various types of institutions.

42,900

The estimating procedure used in this survey involved, as a final step, the inflation of weighted sample results to independent estimates of the civilian population of the United States by age, color, sex, and veteran status. These estimates were based on statistics from the 1940 Census of Population, statistics of births, deaths, and foreign immigration, and statistics on the strength of the armed forces. The estimate of the number of veterans of World War II in continental United States on April 1, 1947, is a provisional estimate based on statistics available at the time this survey was taken. It was prepared from separation records of the armed forces and excludes reenlistments, deaths after discharge from the service, and discharges outside continental United States. The distribution by age was obtained from a sample of separation records.

The figures shown for 1940 are based on a complete enumeration of the population and were published in volume IV of the 1940 Census Reports on Population.

Since the 1947 estimates, except the independent estimates mentioned above, are based on a sample survey, they are subject to sampling variability. The following table presents the approximate sampling variability of estimates of selected sizes for the United States. The chances are about 19 out of 20 that the difference between the estimate and the figure which would have been obtained from a complete census is less than the sampling variability indicated below:

Size of estimate	Sampling variability	Size of estimate	Sampling variability
100,000.....	31,000	3,000,000.....	208,000
300,000.....	55,000	5,000,000.....	269,000
500,000.....	77,000	10,000,000.....	374,000
1,000,000.....	114,000	20,000,000.....	484,000

The reliability of an estimated percentage depends upon both the size of the percentage and the size of the total on which it is based. The following table presents the approximate sampling variability of estimated percentages based on totals of selected sizes for the United States.

If the estimated percentage is:	And if the size of the base is:							
	50,000,000	20,000,000	10,000,000	5,000,000	3,000,000	2,000,000	1,000,000	500,000
	Then the chances are about 19 out of 20 that the difference between the estimated percentage and the percentage which would have been obtained from a complete census is less than:							
5	0.4	0.6	0.8	1.1	1.4	1.6	2.0	3.0
10	0.6	0.8	1.1	1.5	1.9	2.3	3.0	4.2
25	0.8	1.2	1.7	2.3	2.8	3.3	4.5	6.1
50	1.0	1.4	1.9	2.6	3.3	3.9	5.2	7.2
75	0.8	1.2	1.7	2.3	2.8	3.3	4.5	6.1
90	0.6	0.8	1.1	1.5	1.9	2.3	3.0	4.2
95	0.4	0.6	0.8	1.1	1.4	1.6	2.0	3.0

Estimates of characteristics of the nonwhite population are subject to somewhat greater sampling variability than that shown in the above tables.

The reliability of an estimated median depends upon both the form and the size of the distribution on which it is based. For example, among persons 25 to 29 years old in April, 1947, the median number of school years completed was estimated at 12.0. The chances are about 19 out of 20 that a complete census would have yielded a figure between 11.9 and 12.1 years.

The estimates of sampling variability shown above are not directly applicable to differences obtained by subtracting one figure from another. The sampling variability in an observed difference between two estimates depends on the sampling variability of each of the estimates and the correlation between them.

42900

In addition to sampling variation, the estimates are subject to biases due to errors of response and to nonreporting, but the possible effect of such biases is not included in the above measures of reliability. There is evidence that in the survey veterans were underrepresented in the sample relative to nonveterans and that some veterans were incorrectly reported as nonveterans. Veterans are concentrated in the age groups in which the population is more mobile than the population of older ages. Veterans are, therefore, subject to greater underenumeration than older persons whose place of residence is more firmly established. In addition, veterans whose length of service was ~~2~~ may in some cases be erroneously classified as nonveterans by the respondent. Therefore, although the total number of veterans is controlled by independent figures, the distribution of veterans by educational attainment may be affected.