Population Characteristics

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EDUCATIONAL ATTAINMENT: MARCH 1964

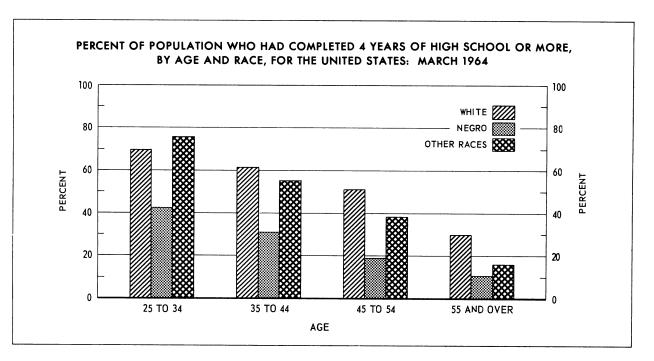
The median years of school completed by the Negro population 25 to 34 years old was 11.3, or 3 years more than the 8.3 years for Negroes 45 to 54 years old. Corresponding medians for white persons were 12.5 and 12.0 years, respectively. These findings are based on national sample statistics collected by the Bureau of the Census in the March 1964 Current Population Survey.

Some further highlights of the survey find-ings are as follows:

1. Among the total population 25 years old and over, the median years of school com-

pleted as of March 1964 had increased by 2.7 years over April 1947, and 1.1 year over March 1957.

- 2. Among those 25 to 34 years old, 70 percent of white persons, 42 percent of Negro persons, and 76 percent of persons of other races were high school graduates, including those who had also attended college.
- 3. Both white and nonwhite residents of metropolitan areas had attained more years of school, on the average, than their counterparts residing outside these areas.



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4. As in 1959, the educational attainment of persons in the West in March 1964 was somewhat higher than in the North and much higher than in the South.

Educational attainment varies by race.--The median years of school completed by persons 25 old and over was 12.0 for white persons, 8.8 for Negroes, and 11.6 for persons of other races (table 1). The percentage having no formal education was about 2 percent for whites, 4 percent for Negroes, and 8 percent for persons of other races. About one-fifth of persons 55 years and older among other races had no schooling. Compared with whites and other races, a larger percentage of Negroes terminated their education by the third year of high school and a lower percentage entered college.

Sharp differences in educational attainment by age and race.--About 70 percent of white persons and 76 percent of persons of other nonwhite races 25 to 34 years old were high school graduates. By ages 35 to 44 a reversal occurs and a larger proportion of white persons than of persons of other races had completed 4 years of high school or more (see figure). The Negro population 25 to 34 years old, and in most other adult age groups, had the lowest proportion of high school graduates among the major racial groups.

Test of variance. -- The entire configuration of values on median years of school completed by race was submitted to an analysis of variance test to measure the extent of the differences among the white population, Negroes, and persons of other races (table B). The results point to the disadvantaged position of Negroes with respect to educational attainment. Very highly significant differences at the .001 level were found between the median education of white and Negro persons (line 5), and between Negroes and persons of white and other races combined (line 8). Significant differences at the .01 level were found between Negroes and other races (line 7); the latter showed higher levels of attainment. The differences at the .001 and .01 levels would be likely to occur by chance alone only about once in a thousand and once in a hundred samples drawn at random. respectively. Of special interest is the fact that the difference between the median education of whites and nonwhites other than Negroes was not significant (at the .05 level). This fact is attributable in part to the relatively high education of persons of Japanese and Chinese origin (as noted below) and perhaps in part to the relatively small sample of persons of other races in the Current Population Survey. The highly significant difference between rows points up the obvious dissimilarity in educational attainment among the older and younger age groups in all three populations.

Table A.--MEDIAN YEARS OF SCHOOL COMPLETED BY PERSONS 18 YEARS OLD AND OVER, BY AGE AND RACE, FOR THE UNITED STATES: MARCH 1964

Age	White	Negro	Other races
18 to 24 years	12.5	11.6 11.3 9.9 8.3 6.1	12.5 12.6 12.1 9.6 7.8

Data from the 1960 Census for persons 25 years old and over permit a closer look at the "other nonwhite" population.¹ According to this census, 58 percent of the Japanese and 44 percent of the Chinese but only 19 percent of American Indians were high school graduates. This is not a complete list of the groups comprising the population of other races, but these are the three largest parts of this group, as well as those parts which contribute most and least to its high educational attainment.

Table B.--TWO-WAY ANALYSIS OF VARIANCE OF MEDIAN YEARS OF SCHOOL COMPLETED BY PERSONS 18 YEARS OLD AND OVER, BY AGE AND RACE, FOR THE UNITED STATES: MARCH 1964

Line	Source of variation	Degrees of freedom	Sum of squares	Estimate of variance	F	р
1 2 3 4	Between columns Between rows Error Total		12.388 45.569 3.519 61.476	6.194 11.392 0.439	14.109 25.949 -	.01 .001 -
5 6 7 8	White/Negro White/"other races" Negro/"other races" Negro/white and "other races"	1 1	11.881 1.225 5.476 11.163	11.881 1.225 5.476 11.163	27.063 2.790 12.473 25.428	.001 .05 .01

¹ Derived from 1960 Census of Population, Series PC(2)-1C, Nonwhite Population by Race, tables 19 to 22.

Postwar increase in educational attainment at all ages.--Between 1947 and 1964, the median educational attainment of the civilian population 25 years old and over increased by about 2.7 years; the gains occurred in all age categories, but notably among persons 35 to 54 years of age. During that same time the number of college graduates in the population has doubled. The trend toward increased schooling is evident for women as well as men and for persons of each race. For those currently under 35 years of age, the advances in education reflect the continuing emphasis placed on education in the postwar years.

Difference between the proportion of white and nonwhite high school graduates about the same in 1964 as in 1947. -- In April 1947, approximately 35 percent of all white persons 25 years old and over had completed 4 years of high school or more, whereas only about 13 percent of nonwhites in the same age group had acquired this amount of education (table C). By March of 1964, about 50 percent of the adult white population and 28 percent of nonwhites had completed 4 years of high school Though the proportion of nonwhite peror more. sons who had completed high school doubled between 1947 and 1964, the proportion of nonwhite persons who were high school graduates had still not reached the level which the white population had achieved by 1947. Moreover, the difference between the percentage of the white population and the nonwhite population completing at least high school remained about the same in 1964 as it was in 1947.

Table C.--MEDIAN YEARS OF SCHOOL COMPLETED AND PERCENT COMPLET-ING 4 YEARS OF HIGH SCHOOL OR MORE, FOR THE POPULATION 25 YEARS OLD AND OVER, BY AGE AND COLOR, FOR THE UNITED STATES: 1964 AND 1947

Age and color	Median years of school completed			Percent completing high school or more		
Ago ana oozor	1964	1947	In- crease	1964	1947	In- crease
WHITE						
Total, 25 years and over	12.0	9.4	2.6	50.2	34.5	15.7
25 to 29 years 30 to 34 years 35 to 44 years 45 to 54 years 55 to 64 years 65 and over	12.5 12.4 12.3 12.0 9.7 8.5	12.1 11.8 10.4 8.7 8.2 7.8	3.3	72.1 67.7 61.4 51.0 37.2 23.6	48.4 39.1 27.1 22.0	
NONWHITE						
Total, 25 years and over	8. 9	6.9	2.0	27.5	13.2	14.3
25 to 29 years 30 to 34 years 35 to 44 years 45 to 54 years 55 to 64 years 65 and over	11.8 11.3 10.1 8.3 7.2 5.0	8.4 8.1 7.3 6.0 5.5 4.0	2.3	32.9	19.8 13.0 9.5 6.8	19.9 10.7 6.6

At the youngest ages (under 35 years), however, the difference between the education of the white and nonwhite population has narrowed since 1947, both in terms of the percent who have completed 4 years of high school or more and in terms of the median years of school completed. More of the gain is due to increased education in the years below the fourth year of high school than to the increased proportion of high school graduates.

Patterns of education vary by residence in metropolitan and nonmetropolitan areas. --Both white and nonwhite persons who reside in metropolitan areas were more likely to have attained a higher educational level than those residing in nonmetropolitan areas (table 2). Among white persons 25 years old and over, 54 percent of the metropolitan population had completed 4 years of high school or more compared with 43 percent of the nonmetropolitan population. Comparable percentages for nonwhites were 33 and 15, respectively.

The difference between the proportion of high school graduates in the white and nonwhite metropolitan population was about 22 percentage points; for the nonmetropolitan population, the difference of 28 percentage points was even sharper. The difference between white and nonwhite persons 25 to 29 years old living in metropolitan areas was very slight, however, with respect to averaged educational level; in this age group nonwhite persons had completed 12.1 years of school, on the average, and white persons, 12.5 years.

Educational attainment varied by regions.—Of the four regions of the country, the West had the highest proportion of persons 25 years old and over who had completed 4 years of high school or more and the South the lowest (table 3). These positions remained unchanged between 1959 and 1964 because the proportion of persons completing high school or more between 1959 and 1964 increased by about 5 percentage points in each of the four regions (table D).

The percentage of high school graduates among persons 25 years old and over in the South increased about the same since 1959 for nonwhite persons (4.6 percentage points) as for white persons (4.8 percentage points). The gain in high school graduates among nonwhite persons in the South amounted to about one-third of the 1959 percentage (13.2), whereas the corresponding increase among white persons in the South amounted to only about one-ninth of the 1959 percentage (41.9).

There was also considerable regional variation at the other end of the scale of educational attainment. The South had the largest proportion (12 percent) of functional illiterates, that is, persons who had completed less than 5 years of

school. The Northeast had the second largest proportion with 6 percent, and the West and North Central Regions each had about 5 percent.

Table D.--PERCENT OF POPULATION 25 YEARS OLD AND OVER WHO HAD COMPLETED 4 YEARS OF HIGH SCHOOL OR MORE, FOR REGIONS: 1964 AND 1959

Region	1964	1959	In- crease
Northeast. North Central South. White. Nonwhite. West.	41.8 46.7	43.6 43.4 36.7 41.9 13.2 52.9	5.3 4.5 5.1 4.8 4.6 5.2

RELATED REPORTS

Additional statistics on the Negro population and on educational attainment in 1964 will be presented in forthcoming Current Population Reports on the Negro population and on marital and family Two recently published reports, "Educational Change in a Generation: March 1962, "Series P-20, No. 132, and "Income of Families and Persons in the United States: 1963, "Series P-60, No. 43, present further information on educational attain-Data on educational attainment for persons 14 years old and over in April 1947, March 1959, and March 1962 were published in Current Population Reports, Series P-20, Nos. 15, 99, and 121, re-Data for 1947 and 1959 are not comspectively. pletely comparable with those for March 1964, shown in the present report, for reasons cited in the section on "Comparability" below. Statistics on educational attainment are also available in several reports of the 1960 Census of Population, the most relevant of which is PC(2)-5B, Educational Attainment; Volume I, Characteristics of the Population, chapter C, "General Social and Economic Characteristics, " and chapter D, "Detailed Characteristics," also include relevant statistics on educational attainment. Report PC(2)-1C. Nonwhite Population by Race, includes educational data for selected races.

Comparability with earlier survey and census data.--The education data presented in this report for March 1964 are comparable to data collected in March 1962, but not strictly comparable with those for March 1959, or earlier survey dates, for several reasons: (1) The sample figures for March 1962 and 1964 were weighted by adjusting them to population controls based on the 1960 Census, whereas the sample figures for March 1959 and earlier survey dates since 1950 had been weighted by adjusting them to population controls based on the 1950 Census and vital statistics. (2) The sample design for 1962 and 1964 included samples

of residents from Alaska and Hawaii, whereas residents from these States were not included in the sample for earlier years. (3) Persons not reporting on years of school completed in 1962 and 1964 were assigned a value for years of school completed according to procedures described in the section on "Definitions and explanations." whereas in earlier years no assignment was made and these persons were shown separately in the published tables. (4) Data on years of school completed for 1947 were based on responses to a single question, rather than the two questions used in subsequent (See section on "Definitions and explanayears. tions.") There may have been a greater tendency toward overstatement of years of school completed in 1947 when only the single question was asked.

Apart from the different dates at which the statistics were collected, the education data from the March 1964 Current Population Survey may differ from those from the 1960 Census and from projections based on the census for the following reasons: (1) Members of the Armed Forces in the United States living off post or with their families on post are included in the survey, but all other members of the Armed Forces are excluded All members of the Armed Forces in the United States are included in the census data. (2) Statistics from both the census and the CPS are subject to sampling and response errors. There are differences in coverage, enumeration techniques (self-enumeration versus direct enumeration), and the methods of allocating nonresponses.

The Content Evaluation Study of the 1960 Census is a major source of information about the accuracy of census data on educational attainment. A comparison by detailed categories of years of school reported for each level suggests a net overreporting on years of school completed for about 6 percent of the population 25 years old and over.2 A comparison of 1962 and 1964 CPS with 1960 Census figures shows that the CPS figures include more persons with 12 years or more of school completed and fewer with less than 12 years. the Content Evaluation Study is taken as a standard, the 1960 Census figures on educational attainment show a slight upward bias. The CPS figures are still higher than the census figures and may, therefore, be more biased in the direction of high educational attainment.

Because of the differences mentioned above, particular care should be exercised in comparing the data for March 1964 with those from the 1960 Census, and with those for earlier CPS dates.

² Evaluation and Research Program of the U.S. Censuses of Population and Housing, 1960: Accuracy of Data on Population Characteristics as Measured by Reinterviews, Series ER 60, No. 4, table 12.

DEFINITIONS AND EXPLANATIONS

Population coverage.--The figures in this report for March 1964 are sample survey data and relate to the population of the 50 States and the District of Columbia. Inmates of institutions are included in the sample. Members of the Armed Forces living off post or with their families on post are included, but all other members of the Armed Forces are excluded.

All figures for decennial census years relate to the total population of the United States, that is, to all persons (including Armed Forces and inmates) residing within the United States.

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

Race and color.--The term "race" refers to the division of population into three groups, white, Negro, and other races. The group designated as "other races" consists of Indians, Japanese, Chinese, and other nonwhite races. The term "color" refers to the twofold classification white and nonwhite.

Years of school completed.--Data on years of school completed in this report were derived from the combination of answers to two questions: (a) "What is the highest grade of school he has ever attended?" and (b) "Did he finish this grade?"

The questions on educational attainment apply only to progress in "regular" schools. Such schools include graded public, private, and parochial elementary and high schools (both junior and senior high), colleges, universities, and professional schools, whether day schools or night schools. Thus, regular schooling is that which may advance a person toward an elementary school certificate or high school diploma, or a college, university, or professional school degree. Schooling in other than regular schools was counted only if the credits obtained were regarded as transferable to a school in the regular school system.

The median 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. This median was computed after the statistics on years of school completed had been converted to a continuous series of numbers (e.g., completion of the first year of high school was treated as completion of the 9th year and the completion of the first year of college as completion of the 13th year). The persons completing a given school year were assumed to be distributed evenly within the interval from .0 to .9 of the year (for example, persons completing the 12th year were assumed to be distributed

evenly between 12.0 and 12.9). In fact, at the time of the March survey, most of the enrolled persons had completed about three-fourths of a school year beyond the highest grade completed, whereas a large majority of persons who were not enrolled had not attended any part of a grade beyond the highest one completed. The effect of the assumption is to place the median for younger persons slightly below, and for older persons slightly above, the true median. Because of the inexact assumption as to the distribution within an interval, this median is more appropriately used for comparing groups and the same group at different dates than as an absolute measure of educational attainment.

Assignment of educational attainment for those not reporting.--When information on either the highest grade attended or completion of the grade was not reported in the 1964 survey, entries for the items were assigned using an edit in the computer. The general procedure was to assign an entry for a person that was consistent with entries for other persons with similar characteristics. The specific technique used in the March 1964 survey was as follows:

- 1. The computer stored reported data on highest grade attended by color and age, and on completion of the grade by age and highest grade attended, for persons 14 years old and over in the population.
- 2. Each stored value was retained in the computer only until a succeeding person having the same characteristics (e.g., same color and age, in the case of assignments for highest grade attended) and having the item reported was processed through the computer. Then, the reported data for the succeeding person were stored in place of the one previously stored.
- 3. When one or both of the education items for a person 14 years old and over was not reported, the entry assigned to this person was that stored for the last person who had the same characteristics.

Metropolitan-nonmetropolitan residence.--The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties. The metropolitan

population in this report is based on SMSA's as defined in the 1960 Census and does not include any subsequent additions or changes.

 $\frac{\text{Rounding}}{\text{in this report are rounded to the nearest}} \ \frac{\text{Rounding}}{\text{thousand without being adjusted to group totals.}}$

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. -- The estimates are based on data obtained monthly in the Current Population Survey of the Bureau of the Census. The sample is spread over 357 areas comprising 701 counties and independent cities, with coverage in each of the 50 States and the District of Columbia. mately 35,000 occupied households are designated for interview each month. Of this number, 1,500 occupied units, on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reason. In addition to the 35,000, there are also about 5,000 sample units in an average month that are visited but are found to be vacant or otherwise not to be enumerated.

The estimating procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the civilian population of the United States by age, color, and sex. These independent estimates were based on statistics from the 1960 Census of Population; statistics of births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. Inmates of institutions are included in the sample.

Reliability of the estimates .-- Since the estimates are based on a sample, they may differ somewhat from the figure that would have been obtained if a complete census had been taken using the same schedules, instructions, and enumerators. As in any survey work, the results are subject to errors of response and of reporting as well as being subject to sampling variability. The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole of the population is surveyed. As calculated for this report, the standard error also partially measures the effect of response and enumeration errors but does not measure any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census figure by less than the standard The chances are about 95 out of 100 that the difference would be less than twice the standard error. The figures presented in tables E and F are approximations to the standard errors of various estimates shown in this report. In order to derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item.

Table E.--STANDARD ERROR OF ESTIMATED NUMBER
(68 chances out of 100)

Size of estimate	Standard error	Size of estimate	Standard error
25,000. 50,000. 100,000. 250,000. 500,000. 1,000,000.	9,000 13,000 18,000 28,000 40,000 60,000	2,500,000	90,000 120,000 170,000 260,000 320,000

The reliability of an estimated percentage, computed by using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are large (50 percent or more).

Table F.--STANDARD ERROR OF ESTIMATED PERCENTAGE (68 chances out of 100)

Estimated	Base of percentage (thousands)						
percentage	250	500	1,000	5,000	10,000	25,000	50,000
2 or 98 5 or 95 10 or 90 25 or 75 50	1.6 2.4 3.4 4.9 5.6	1.1 1.7 2.4 3.5 4.0	0.8 1.2 1.7 2.5 2.8	0.4 0.6 0.8 1.1 1.3	0.3 0.4 0.5 0.8 0.9	0.2 0.2 0.3 0.5 0.6	0.1 0.2 0.2 0.3 0.4

Illustration: Table 1 of this report shows that 22,455,000 females age 14 years and over had completed 4 years of high school. Table E shows the standard error on 22,455,000 to be approximately 245,000. Chances are 68 out of 100 that a complete census would have differed from the sample estimate by less than 245,000. Chances are 95 out of 100 that the difference would have been less than 490,000.

Of these 22,455,000 female high school graduates, 3,153,000, or 14.0 percent, were in the age group 20 to 24 years. Table F shows the standard error of 14.0 percent with a base of 22,455,000 to be about 0.4 percent. Consequently, chances are 68 out of 100 that a complete census would have disclosed the figure to be between 13.6 and 14.4 percent, and 95 chances out of 100 that the figure would have been between 13.2 and 14.8 percent.

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