EDUCATIONAL ATTAINMENT: MARCH 1962

Great strides in the educational attainment of both white and nonwhite persons have been made in the last few decades, but the gap between the two groups remains large, according to statistics from the March 1962 Current Population Survey, conducted by the Bureau of the Census. A narrowing of the differences in the average educational attainment between whites and nonwhites has been occurring, as evidenced by a difference in medians of 1.3 years at ages 25 to 29 (12.5 years for whites vs. 11.2 years for nonwhites) and of 2.5 years at ages 55 to 64 (9.2 years for whites vs. 6.7 years for nonwhites). There has not been a narrowing of the gap between whites and nonwhites, however, in the percent who are at least high school graduates. For example, there was a difference of 27 percentage points at ages 25 to 29 (69 percent for whites vs. 42 percent for nonwhites) and 23 percentage points at ages 55 to 64 (34 percent for whites vs. 11 percent for nonwhites) (figure 1). This comparison indicates that the narrowing of differences in the average educational attainment of whites and nonwhites has been due more to a reduction in the proportion of nonwhites with low educational levels than to an increase in the proportion of nonwhites with high educational levels.

Some other highlights of the survey findings are as follows:

1. The average (median) number of school years completed by the population 25 years old and over in 1962 stood at 11.4. The average for women was about one-half year greater than that for men; the average for whites was about three years greater than that for nonwhites.

2. In March 1962, there were an estimated 57,389,000 high school graduates and 9,715,000 college graduates in the United States. Among nonwhites, there 3,339,000 high school graduates and 444,000 college graduates.

3. The number of persons 14 years old and over with less than five years of school completed was 8,179,000. Over one-fourth of these persons, sometimes referred to as "functional illiterates," were nonwhites.

RELATED REPORTS

Additional statistics on educational attainment for March 1962 will be presented in other Series P-20 reports on marital status and on family characteristics, in Series P-60 reports on income, and in an article in a forthcoming issue of the Monthly Labor Review, which is published by the Bureau of Labor Statistics. Data on educational attainment for persons 14 years old and over in March 1959 were published in Current Population Reports, Series P-20, No. 99; but these data are not completely comparable with those for March 1962, shown in the present report, for reasons cited in the section on "Comparability" below. Additional data on this subject for cities, counties, standard metropolitan statistical areas, urbanized areas, States, regions, etc., in April 1960 appear in chapters C and D of Volume I of the decennial census reports on
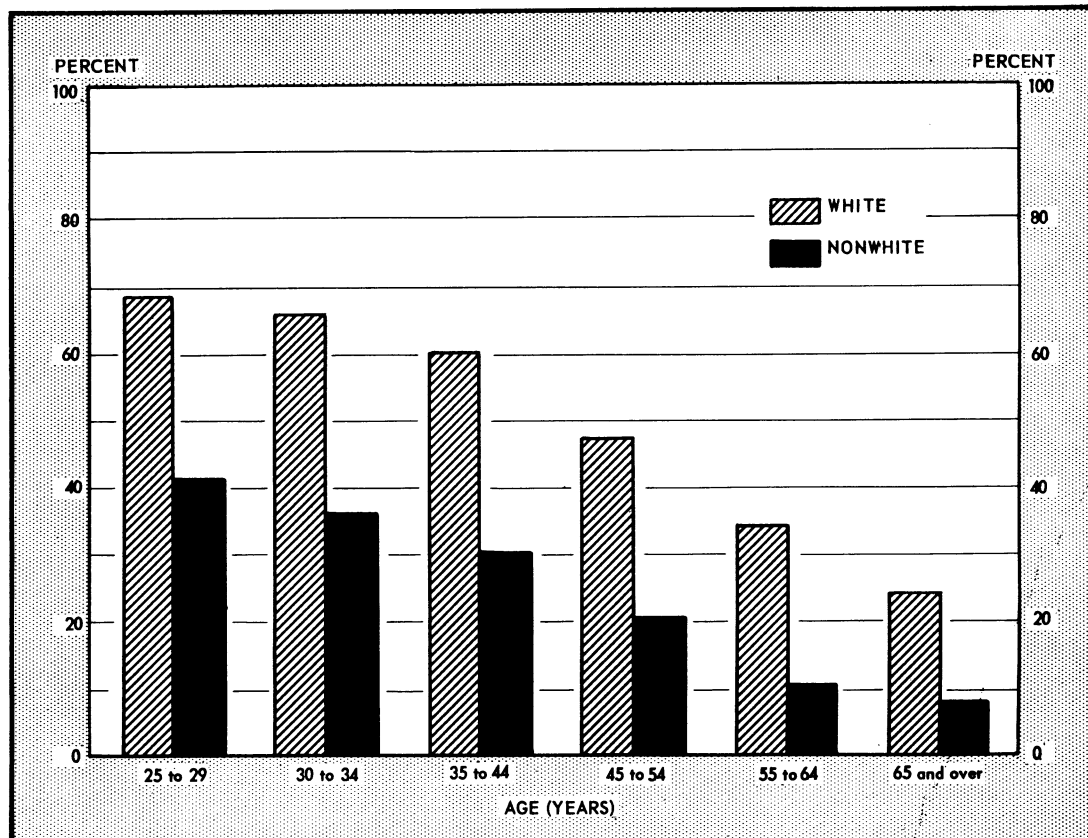

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Figure1.-- PERCENT OF CIVILIAN POPULATION WHO ARE AT LEAST HIGH SCHOOL
GRADUATES, BY AGE AND COLOR, FOR THE UNITED STATES: MARCH 1962

population. Detailed statistics on educational attainment by age and social and economic characteristics for the United States and re- gions are being planned for inclusion in sev- eral subject reports in Volume II of the 1960 Census.

Comparability with earlier survey and census data.--The education data presented in this report for March 1962 are not strictly comparable with those for March 1959, or ear- lier survey dates, for several reasons: (1) The sample figures for March 1962 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 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 were as- signed a value for years of school completed according to procedures described in the sec- tion on "Definitions and explanations," where- as in earlier years no assignment was made and these persons were shown separately in the published tables.

Apart from the different dates at which the statistics were collected, the education data from the March 1962 Current Population Survey may differ from those from the 1960 Census for the following reasons: (1) The March 1962 survey results were weighted by ad- justing them to broad age intervals of the population as enumerated in the 1960 Census; consequently, some of the difference between the survey and the census is due to differen- tial weighting of the population within these age intervals. This fact is especially impor- tant for age groups in which the younger persons

within the group have considerably higher average educational levels than the older persons within the group. (See, for example, the medians for the age groups 35 to 54, as shown in table A.) (2) The small group of Current Population Survey enumerators were more experienced and had more intensive training and supervision than the large number of temporary decennial census enumerators and may have more often obtained more accurate answers from respondents. (3) 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 from it. All members of the Armed Forces in the United States are included in the census data.

Because of the differences mentioned above, particular care should be exercised in comparing the data for March 1962 with those from the 1960 Census, and with those for earlier CPS dates.

Table A.—MEDIAN SCHOOL YEARS COMPLETED BY THE POPULATION 25 YEARS OLD AND OVER, BY AGE AND SEX, FOR THE UNITED STATES: DECENNIAL CENSUS, 1950 AND 1960, AND CURRENT POPULATION SURVEY, 1952, 1957, 1959, AND 1962

Age and sex	March 1962 (CPS)	April 1960 (Census)	March 1959 (CPS)	March 1957 (CPS)	October 1952 (CPS)	April 1950 (Census)
Male, 25 years and over............	11.1	10.3	10.7	10.3	9.7	9.0
25 to 29 years........................	12.5	12.3	12.4	12.2	12.2	12.0
30 to 34 years........................	12.3	12.1	12.2	12.1	12.1	11.4
35 to 44 years........................	12.2	12.0	12.1	11.8	11.1	10.0
45 to 54 years........................	11.0	9.9	10.2	9.6	8.9	8.7
55 to 64 years........................	8.9	8.6	8.7	8.6	8.5	8.4
65 years and over....................	8.0	8.1	8.2	8.1	8.0	8.0
Female, 25 years and over..........	11.6	10.7	11.2	10.9	10.4	9.6
25 to 29 years........................	12.4	12.3	12.3	12.3	12.2	12.1
30 to 34 years........................	12.3	12.2	12.2	12.2	12.2	11.8
35 to 44 years........................	12.2	12.1	12.1	12.0	11.6	10.5
45 to 54 years........................	11.5	10.5	10.8	10.3	9.1	8.9
55 to 64 years........................	9.0	8.8	8.9	8.8	8.6	8.5
65 years and over....................	8.5	8.4	8.4	8.4	8.3	8.3

Urban and rural data.--An analysis of the relation between statistics on urban-rural residence from the decennial census and from the Current Population Survey has led to a decision to discontinue the regular publication of statistics on this subject from the Current Population Survey. There are two components in the growth of urban population during a decade: (a) growth in the areas that were urban at the beginning of the decade, and (b) reclassification of formerly rural territory as urban as the result of increased size of place, increased population density, or annexations. From the Current Population Survey, it is possible to obtain measures of only the first component of growth; a prohibitively large expenditure of resources would be required to obtain measures of the second component. Since in the past decade about 60 percent of the growth of urban population was attributable to the expansion of urban territory, figures on urban population derived from the CPS for most of the period between decennial censuses may give a misleading description of the growth and characteristics of the urban population. It should also be noted that, owing to some processing complications, data on the first component of urban-rural change are not available for about a year, starting with March 1962.

DEFINITIONS AND EXPLANATIONS

Population coverage.--The figures in this report for March 1962 are sample survey data and relate to the civilian 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. For convenience, this population is referred to as "the civilian population."

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

Color.--The term "color" refers to the division of the population into two groups, white and nonwhite. The nonwhite group includes, Negroes, Indians, Japanese, Chinese, and other nonwhite races.

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 1962 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 1962 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.

Rounding of estimates.--The individual figures in this report are rounded to the nearest thousand and adjusted to group totals.

SOURCE AND RELIABILITY OF ESTIMATES

Source of data.--The estimates for March 1962 presented in this report are based on data obtained in connection with the monthly population sample survey of the Bureau of the Census. This sample is spread over 333 sample areas comprising 641 counties and independent cities, with coverage in each of the 50 States and the District of Columbia. A total of about 42,000 dwelling units and other living quarters are designated for the sample at any one time; and, of these, approximately 35,000 households are interviewed each month. There are another 1,500 occupied units, on the average, for which information should be obtained but is not, generally because the enumerator could not contact any household member during

the time specified for interviewing. The remaining 5,500 are vacant households or those otherwise not to be enumerated for the survey.

The estimating procedure used in the survey involves, as a final step, the inflation of the weighted sample results to independent estimates of the civilian population of the United States by age, sex, and color. These independent estimates are based on statistics from the 1960 Census of Population; statistics of births, deaths, immigration, emigration; and statistics on the strength of the Armed Forces and separation records.

Reliability of estimates.--Since the estimates are based on a sample, they may differ somewhat from the figures 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 as such 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 error. The chances are about 95 out of 100 that the difference would be less than twice the standard error.

The figures presented in tables B and C are approximations to the standard errors of various characteristics shown in tables 1 to 3. 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 should be interpreted as providing an indication of the order of magnitude of the standard errors rather than as the precise standard error for any specific item.

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 absolute estimates of the numerators of the percentages, particularly if the numerators are large.

Table B.--STANDARD ERROR OF LEVEL OF ESTIMATES

Size of estimate	Both sexes		Male		Female	
	Total or white	Non-white	Total or white	Non-white	Total or white	Non-white
10,000	5,000	5,000	7,000	5,000	5,000	5,000
50,000	11,000	10,000	14,000	10,000	10,000	10,000
100,000	15,000	14,000	20,000	14,000	14,000	14,000
250,000	24,000	21,000	31,000	21,000	22,000	21,000
500,000	34,000	20,000	43,000	30,000	31,000	30,000
1,000,000	48,000	40,000	60,000	40,000	45,000	40,000
2,500,000	75,000	50,000	90,000	50,000	70,000	50,000
5,000,000	100,000	50,000	110,000	...	100,000	...
10,000,000	140,000	...	140,000	...	130,000	...
20,000,000	180,000	...	150,000	...	170,000	...
30,000,000	210,000	...	...	...	...	...

Table C.--STANDARD ERROR OF PERCENTAGES

Estimated percentage	Base of percentage					
	500,000	1,000,000	5,000,000	10,000,000	50,000,000	100,000,000
2 or 98	1.0	0.6	0.3	0.2	0.1	0.1
5 or 95	1.4	1.1	0.5	0.3	0.1	0.1
10 or 90	2.1	1.4	0.7	0.5	0.2	0.1
25 or 75	2.8	2.1	0.9	0.6	0.3	0.2
50	3.4	2.4	1.1	0.7	0.3	0.2

Illustration.--Table 3 shows that there were an estimated 1,277,000 nonwhite persons 25 to 29 years of age in the United States. By interpolation in table B, the standard error of this estimate is approximately 42,000. Consequently, the chances are about 68 out of 100 that the figure obtained from a complete census would have differed from the sample estimate by less than 42,000. The chances are about 95 out of 100 that a complete census would have disclosed a figure differing from the estimate by less than 84,000.

Table 3 also shows that of the 1,277,000 nonwhite persons 25 to 29 years of age, 531,000, or about 41.6 percent, had completed high school. Linear interpolation in table C shows that the standard error of the 41.6 percent is approximately 2.2 percent. Thus, the chances are about 68 out of 100 that a complete census would reveal that the percentage lies between 39.4 and 43.8 percent.

Some of the tables present estimates of averages (medians), as well as the corresponding distributions. The sampling variability of estimates of medians depends on the distributions upon which the medians are based.

Confidence limits of the median based on sample data may be estimated as follows: (1) From table C, using the appropriate base, determine the standard error for a 50-percent characteristic, (2) add to and subtract from 50 percent the standard error determined in step 1. Values corresponding to the resulting percents from step 2 are then calculated by using the estimated distribution of the appropriate characteristic. A two-standard-error confidence limit may be determined by adding and subtracting twice the standard error in step 2.

Illustration.--From table 1, the median years of school completed by males 25 years old and over is 11.1. To determine the two-standard-error confidence limits for this characteristic: (1) From table C, using a base of 48,283,000, the standard error is about 0.3 percent, (2) twice this standard error added to and subtracted from 50 percent gives the percentage limits, 50.6 and 49.4 percent.

The values of the characteristic corresponding to these two percentage limits, in this case 11.2 and 11.0, are obtained from the distribution of this characteristic in table 1 and are the two-standard-error confidence limits. To obtain these values, it was necessary to interpolate within the three-year class interval (9.0 to 11.9 years of school completed). Thus, the upper confidence limit, 11.2 years of school completed, was obtained by adding to 9.0 years the interpolated value $\frac{50.6 - 37.6}{17.4}$ times three years, or approximately 2.2 years.

CORRECTION

The distributions of illiterates by employment status and of employed illiterates by major occupation group are incorrect as shown in table B of Current Population Reports, Series P-20, No. 99, "Literacy and Educational Attainment: March 1959." The correct figures are shown below:

Subject	Total number illiterate	Percent illiterate		
		Both sexes	Male	Female
EMPLOYMENT STATUS				
Employed...................	956,000	1.5	1.9	0.7
Unemployed................	123,000	3.0	3.8	1.4
Not in labor force........	1,494,000	3.4	6.9	2.7
MAJOR OCCUPATION GROUP				
Professional, technical, and kindred workers......	8,000	0.1	0.2	...
Farmers & farm managers...	137,000	4.6	4.7	...
Managers, officials, and proprietors, exc. farm...	28,000	0.4	0.4	0.3
Clerical & kindred wkrs...	2,000	...	0.1	...
Sales workers.............	...	...	...	...
Craftsmen, foremen, and kindred workers..........	58,000	0.7	0.7	0.5
Operatives & kindred wkrs.	167,000	1.5	1.6	1.1
Private household wkrs....	68,000	3.6	12.2	3.5
Service workers, exc. private household........	71,000	1.3	1.8	0.7
Farm laborers & foremen...	191,000	11.5	14.9	4.3
Laborers, exc. farm and mine....................	228,000	6.9	7.1	...