DOCUMENT RESUME

ED 038 493 VT 009 893

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TITLE	Formal Occupational Training of Adult Workers; Its Extent, Nature, and Use. Manpower/Automation Research Monograph No. 2.
INSTITUTION	Office of Manpower, Automation, and Training (DOL), Washington, D.C.
PUB DATE	Dec 64
NOTE	51p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$2.65
DESCRIPTORS	*Adult Characteristics, *Adults, College Students, Dropouts, *Labor Force, *National Surveys, Questionnaires, Tables (Data), Training, *Vocational Education

ABSTRACT

Workers between the ages of 22 and 64 who had completed less than 3 years of college accounted for 52.1 million of the 60.8 million adults in the civilian labor force in 1963. A representative sample of this group was surveyed to determine the extent of their education and whether they had participated in any formal occupational training programs in high school, junior colleges, technical institutes, special schools, correspondence schools, company training schools, apprenticeship, or the Armed Forces. They were also asked to designate the occupations or fields in which they had received training, how much training they had taken, and whether they had completed it. Finally, the workers in the sample group were questioned concerning their use of training in employment and other ways of learning jobs. This report summarizes the survey findings, analyzes the data, examines the implications of the findings, and makes suggestions for further research. Charts and tables supplement the narrative, and the questionnaire is appended. (CH)

FORMAL OCCUPATIONAL TRAINING OF ADULT WORKERS

MANPOWER/AUTOMATION RESEARCH MONOGRAPH No. 2

Manpower/Automation Research
Monograph No. 2

December 1964

FORMAL OCCUPATIONAL TRAINING OF ADULT WORKERS

ITS EXTENT, NATURE, AND USE

PREFACE

This monograph is one in a series being published by the U.S. Department of Labor on manpower and automation research conducted under title I of the Manpower Development and Training Act of 1962. It reports the results of a nationwide survey of workers' preparation for jobs, conducted by the Department in April 1963. A summary of the survey was presented in the 1964 *Manpower Report of the President.*

The Bureau of Labor Statistics planned the study, designed the questionnaire, and analyzed the results in a research report to the Office of Manpower, Automation and Training, the sponsor of the study, which was conducted under Contract No. MDTA 7–63. Sophia Cooper and Carl Rosenfeld, of the Bureau of Labor Statistics, prepared the original research report. The Bureau of the Census collected the data in connection with its Current Population Survey and tabulated the results.

This monograph was prepared by Mary Bedell and Roger Bowlby in the Office of Manpower, Automation and Training, which is responsible for the material on implications and recommendations.

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INTRODUCTION

The knowledge, skills, and adaptability of the country's workers greatly influence its rate of economic and technological progress. They are also major factors in the workers' economic status. As burgeoning technological innovations have generated demands for workers with more education and hitherto unknown skills and curtailed jobs for the less educated and the unskilled, the adequacy of the Nation's manpower development has emerged as a central concern. In 1962, the Manpower Development and Training Act (MDTA) directed the Secretary of Labor (in section 102(3)) to "appraise the adequacy of the Nation's manpower development efforts to meet foreseeable manpower needs." The survey with which this report deals should be regarded as one of the first steps in that appraisal.

The contributions of education and training to preparation for work are overlapping and, at points, indistinguishable. For the average worker, the sole source of education is elementary and secondary school, though increasing numbers are going on to junior colleges, technical institutes, special schools, and colleges and universities. Training, on the other hand, is characterized by greater diversity of sources. It is acquired not only in educational institutions but also through apprenticeship and other industry programs, in the Armed Forces, and through informal instruction by supervisors and even fellow workers or relatives. For many purposes, work experience may be the equivalent of training, and a substitute for it in job specifications.

To some extent, education *is* training and vice versa. At any rate, the connection between the two is extraordinarily complex, and an appraisal of the educational and training activities which are the vehicle for manpower development is a massive and difficult undertaking.

The substantial rise in the educational attainment of American workers in recent decades has often been chronicled.[1] There has also been research on the education and training of workers in key skilled and professional occupations.[2] Since the passage of the Area Redevelopment Act of 1961 and the Manpower Development and Training Act of 1962, information has been accumulated on the characteristics of persons being trained under these laws.[3] But until the Department of Labor in April 1963 undertook an inventory of the education and training of adults then in the labor force, there had never been a nationwide study of workers' preparation for jobs.

The primary focus of the 1963 survey[4] was the vocational training background of workers between the ages of 22 and 64 who had completed less than 3 years of college. This group of workers accounted for 52.1 million of the 60.8 million adults in the civilian labor force at the

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[1] See, for example, *Educational Attainment of Workers, 1959*, U.S. Department of Labor, Bureau of Labor Statistics, Special Labor Force Report No. 1, 1960.

[2] See, for example, *Employment in Professional Mathematical Work in Industry and Government, Report on a 1960 Survey*, prepared for the National Science Foundation by the U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with The Mathematical Association of America, NSF 62-12, 1962.

[3] The *Manpower Report of the President*, transmitted to the Congress each March as required by section 104 of the MDTA, summarizes these data; see, for example, appendix tables F-1 through F-6 in the 1964 *Report* (pp. 252-254).

[4] The questionnaire is reproduced in the Technical Appendix to this report, pp. 29-32.

time of the survey. A sample group [5] representing these workers were asked how much education they had and whether they had taken any formal occupational training programs in high schools, junior colleges, technical institutes, special schools (e.g., a business or nursing school), correspondence schools, company training schools (full-time study for at least 6 weeks), apprenticeship, or the Armed Forces. They were also asked to designate the occupation(s) or field(s) in which they had taken training, how much training they had taken, and whether they had completed it. Finally, the workers in the sample group were asked whether they had used their training in either their current or a previous civilian job, how they had learned their current job, and what kind of job had made the best use of their training and experience.

Since workers with 3 or more years of college are likely to be employed in professional occupations, for which education and training may be virtually synonymous, they were asked for different information: Their major field of study (engineering, for example); whether they used it or related training on their current job; and if not, how they had learned the job.

The first section of this monograph summarizes the survey findings and some of their implications. The second section analyzes the data, which are given in detail in the Technical Appendix. The appendix also contains a statement on concepts, methods, and limitations of the data. The third section of the text examines the implications of the findings and makes some suggestions for further research.

[5] The sample questioned in this survey is the one developed by the Bureau of the Census and interviewed monthly in its Current Population Survey. Approximately 35,000 households are interviewed each month in this survey, and the numbers quoted in the text are estimates for the entire population based on the data for this sample. For details about the sample, see the Technical Appendix, p. 25.

SUMMARY

In capsule form, the inventory of the education and training of the 60.8 million American workers between the ages of 22 and 64, taken by the Department of Labor in April 1963, showed that

—39 percent, or 23.6 million, had less than 3 years of college and had taken formal job training; three-fifths of these were using their training on their current job (or last job if unemployed). Nearly two-thirds of those with training had graduated from high school and about one-fifth of these graduates had completed 1 or 2 years of college. About ¾ million were taking additional training at the time.

—47 percent, or 28.5 million, had less than 3 years of college and had had no formal vocational training. Half of this group had never gone beyond elementary school; only a little more than one-fourth of them had completed high school. About ½ million were taking training at the time of the survey.

—14 percent, or 8.7 million, had completed at least 3 years of college. Nearly four-fifths of these were working in their major field, and over three-fifths of the remainder had learned their current job through college courses outside the major or through formal vocational training.

Thus, two-fifths of the work force were using formal training or specialized education on the job, about one-sixth had had training or advanced education which they were not using on the job, and the remainder had had no formal training or specialized education.

In the group which was the primary focus of the survey, and to which the remainder of this section relates—the 52.1 million who had less than 3 years of college—training was closely correlated with educational attainment. As a result, younger workers were more apt than older workers to have such training, white workers were more frequently trained than nonwhite, and more of the employed than of the unemployed had had training. Moreover, the more education workers had, the more likely they were to have taken training in more than one occupation.

To a large extent, these relationships reflect the concentration of formal job training in educational institutions. Almost two-fifths of the training programs reported had been taken in high school, and another three-tenths in educational institutions that commonly require a high school diploma for admission (junior colleges, technical institutes, and special schools). The Armed Forces, apprenticeship, company schools, and correspondence schools accounted for the remainder.

There were fairly clear institutional training patterns for the various occupations. For most clerical jobs, for example, high schools provided the bulk of the training, except that telephone operators were most commonly trained in company schools and office machine operators, in special schools. For most skilled manual occupations, apprenticeship was the dominant source of formal training, with exceptions for the typographical trades (where high school vocational courses were more important) and for bakers and mechanics (where most training was offered by the Armed Forces). One or two sources of training were also predominant for many other occupations.

For the adults who were taking training at the time of the survey, both high school and the Armed Forces were far less important sources of training

than for workers whose training had been taken in the past. (It will be recalled that the survey excluded the Armed Forces and covered civilian workers between the ages of 22 and 64, who are normally beyond the age when high school is an important source of training.) Apprenticeship was, however, twice as prevalent for those still taking training, as was training in company schools. Correspondence schools were over three times as important in current as in past training.

Some of the training had been taken many years ago and some of it must have been taken for nonjob purposes. About a fifth of it had never been completed. All these circumstances could be expected to restrict current use of training, yet three-fifths of all workers with training were using it in their current jobs. Another fifth reported that they had used it in a previous job.

Another reflection of the widespread use of training is the fact that 30 percent of all workers said that they had relied on formal training as one means of learning their jobs, even though, as previously indicated, a majority of the workers had received no training. Over half, however, reported that they had learned on the job through informal means, and 45 percent reported that they had learned their job from a friend or relative or "just picked it up." (About one-third of the workers reported two or more of these ways of learning.) Only about 1 worker in 13 stated that no training was necessary for the job currently held.

Only in the professional[6] and clerical worker categories did a majority of the workers—about 65 and 55 percent, respectively, report that formal training was one of the ways in which they had learned their jobs. About 40 percent of the craftsmen, foremen, and kindred workers reported formal training, as did some 35 percent of the managerial group, about 25 percent of both sales and service workers, and 20 percent of the farmers. Formal training had been one way of learning the job for only 5 to 10 percent of the laborers, both farm and nonfarm, and of the domestic workers, and for somewhat less than 15 percent of the operatives.

While this study of occupational training greatly increases our knowledge about both formal and informal training, it leaves some unanswered questions about the relationship between them. The extent to which casual and improvised training are acceptable substitutes for systematic and formalized training in an economy that grows more complicated day by day remains as a question for future research.

The survey results give further support to the premise that an active manpower policy ought to aim at raising the educational level of the labor force by reducing the number of school dropouts. A significant contribution to our knowledge is the finding that receipt of vocational training is associated with significantly lower unemployment rates for workers with less than 8 years of formal schooling. This in turn implies that substantial efforts should be directed toward increasing training opportunities for workers with the lowest educational level.

[6] The group under discussion here, those with less than 3 years of college, represents only a small proportion of professional and technical workers.

ANALYSIS OF FINDINGS

Since the major focus of the survey was the training and education of workers with less than 3 years of college, this chapter first presents data for that group and then turns to the more limited information for workers with higher education levels. For the first group, the data on the extent of training are analyzed in terms of the relation of training to level of education, and the concomitant variations by age, color, and employment status. Next, the nature of the training is described: When and where it was taken, whether it was completed, how long it lasted, and to what occupation or field it related. Finally, the use of training in employment (in previous jobs as well as the current job) and other ways of learning jobs are discussed.

Workers With Less Than 3 Years of College

As already pointed out, training is closely linked with education, largely because of the important role of high schools and other educational institutions in developing job skills. Moreover, high school graduation is now typically required for admission to industry training programs, both company training schools and apprenticeship. In the military services, too, which are an important source of training, men with more education tend to score better on the aptitude tests used for selecting and training personnel.[7]

EXTENT OF TRAINING

It is not surprising, then, that the April 1963 survey showed that the extent of training increased with educational attainment. (See table 1.[8]) Of the 52.1 million workers between the ages of 22 and 64 who had completed less than 3 years of college

—32 percent (16.9 million) had no more than an eighth grade education. One-sixth of these had formal job training.

—23 percent (12.2 million) had some high school but had not graduated. Nearly half of these had job training.

—35 percent (18.1 million) were high school graduates who had not gone on to college. Two-thirds of these had job training.

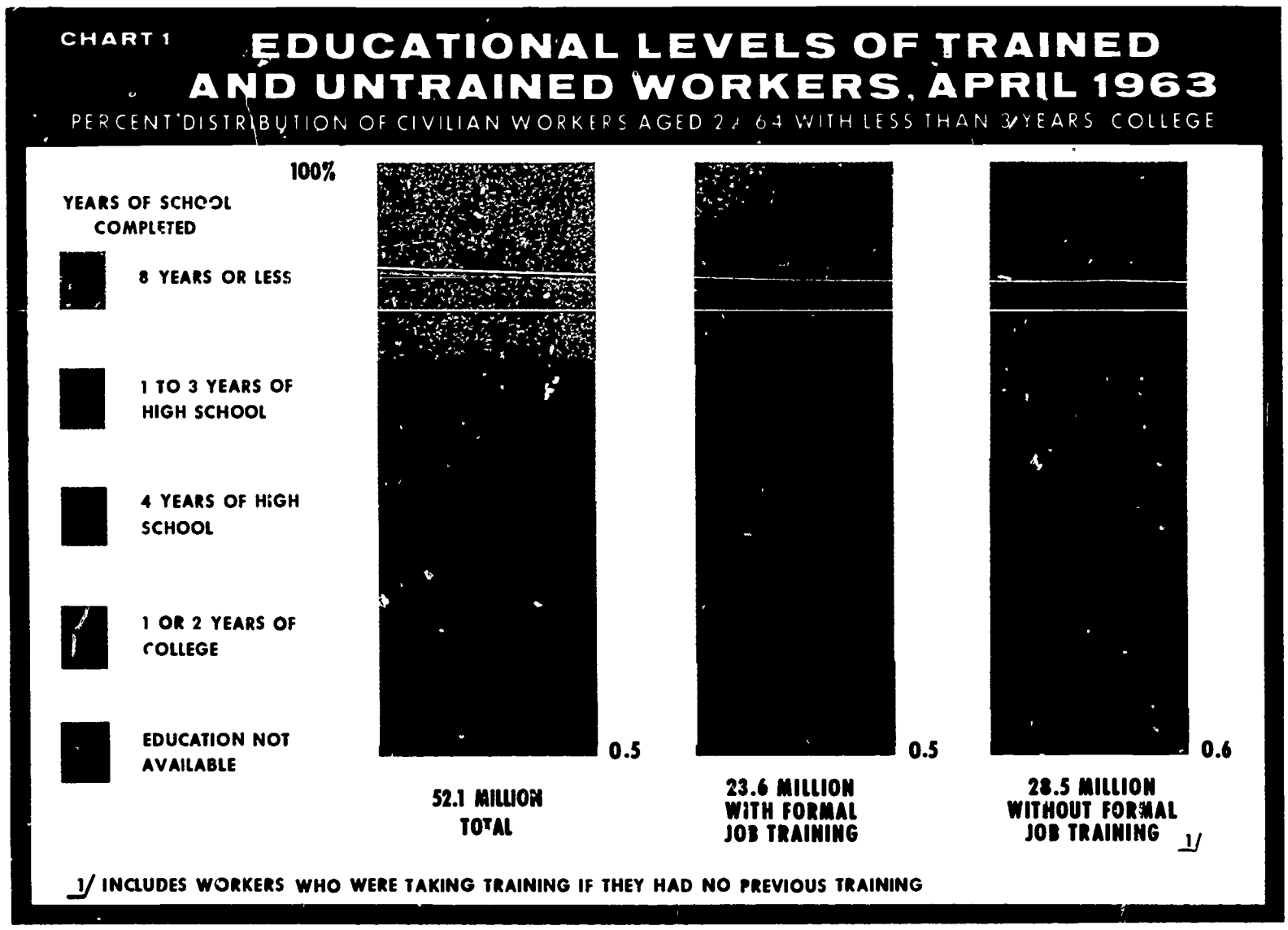
—9 percent (4.6 million) had 1 or 2 years of college. Three-fourths of these had training.

Thus, nearly two-thirds of those with formal training had at least graduated from high school, whereas seven-tenths of those without training had not, as shown in chart 1.

More of the women than of the men were high school graduates—49 versus 41 percent—and the women graduates were more likely than the men to have training. Some 69 percent of the women

[7] A survey of a sample group of young men who were rejected for military service in 1962 and 1963 because they failed to pass the Armed Forces Qualification Test, showed that only 1 in 5 was a high school graduate, compared with about 2 in 3 of all men aged 20-24. See *One-Third of a Nation: A Report on Young Men Found Unqualified for Military Service*, The President's Task Force on Manpower Conservation, January 1, 1964, p. 16.

[8] This and subsequent table references denote statistical tables in the Technical Appendix, pp. 33-48.



and 63 percent of the men who had completed 4 years of high school had training, and among those with 1 or 2 years of college, 75 percent of the women and 69 percent of the men had had training. (See chart 2.) Overall, however, since men who had never gone beyond elementary school were twice as likely to have training as women with comparable education, the proportions with training were about even—47 percent of the women and 44 percent of the men. The small difference reflects both the greater work propensities of more highly educated women and the greater continuity of men's working lives, and the consequently greater need and opportunity for training by men with comparatively little education.

Among both men and women, more of the workers with higher educational attainment were also apt to have taken training in more than one skill.[9] Workers who had some college were about three times as likely to have learned or tried to learn two or more skills as those who had not gone beyond elementary school—40 percent compared with 15 percent. (See table 2.) The workers with higher education levels had had greater training opportunities; they may also have had more initiative or less reluctance to move to another skill if the need arose. It may also be that they had taken training in school because it was required and later took training in the occupation they wished to follow At all educational levels, however, substantially larger proportions of men than of women had acquired multiple skill training.

Variations by Age

Since education and training are linked so closely, the educationally disadvantaged (older

[9] Here, training for each occupation is counted only once even if the worker had taken more than one kind of instruction in obtaining that training. For example, woodworking courses in high school and carpentry learned through apprenticeship are counted as training for one *skill*. In the later discussion of training programs, however, the woodworking courses and the apprenticeship are counted separately because they were taken in different institutions.

people, nonwhites, and the unemployed) tend to have relatively low rates of formal training.

Among the workers aged 45 or over, only one-third had completed high school, compared with over half of the younger workers. A sizable number of older workers had, however, started some kind of vocational training after age 35—nearly a fourth of the men and a fifth of the women. For many older women, a refresher course in stenography or typing, or training in a service occupation probably represented preparation to reenter the labor force when family responsibilities permitted. Some older men undoubtedly were preparing for supervisory jobs. Others may have been displaced by technological changes and needed retraining to find a job. Because of the substantial amount of training taken later in life, the disparity in the extent of training of older and younger workers was slightly less than that in education. Nearly two-fifths of the older workers had taken training, compared with half of the younger ones.

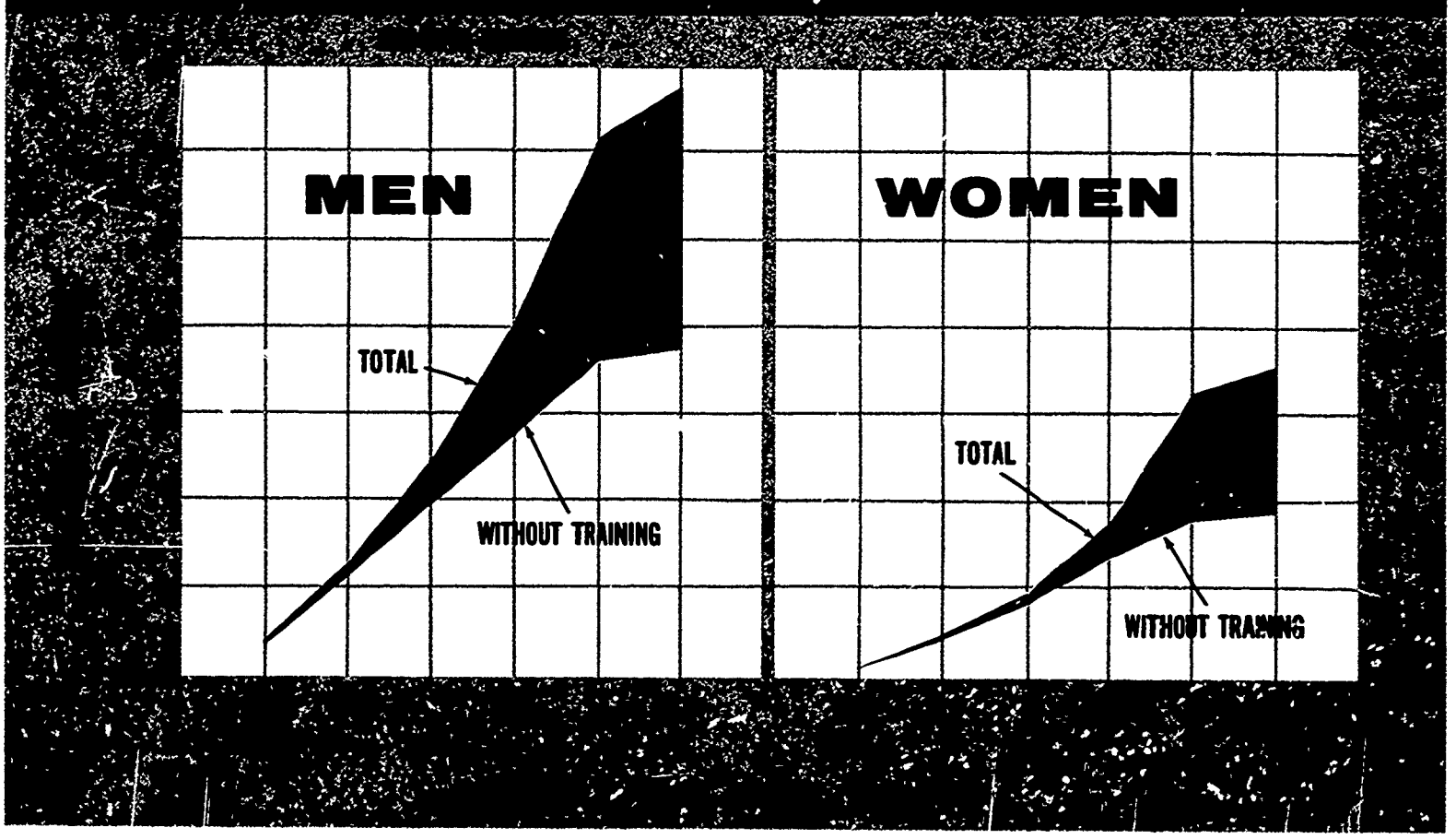
Among both older and younger workers, the extent of training decreased steadily with age, reflecting educational attainments. Overall, the proportion with training fell from 57 percent of those 22 to 24 years old to 31 percent of those aged 55 to 64. Similarly, a smaller proportion of older than younger workers were taking training at the time of the survey.

Although women had an educational advantage in all age groups except the 22- to 24-year-old category, this was the only age group in which a significantly larger proportion of women had taken training. Two-thirds of the women, but only half of the men of this age had taken formal training. The women had relied much more on high schools for their training, whereas many men of this age might have postponed a decision on a career until they had completed military service and acquired some work experience. More widespread belated training for men helped equalize the extent of training (at about 50 percent) for men and women in both the 25- to 34

CHART 2

EXTENT OF FORMAL JOB TRAINING BY EDUCATION AND SEX APRIL 1963

(CUMULATIVE DISTRIBUTION OF CIVILIAN WORKERS AGED 22 - 64 WITH LESS THAN 3 YEARS COLLEGE)



and the 35- to 44-year groups. The women held a slight edge in training among older workers: 42 percent of the 45- to 54-year- old women had training, compared with 39 percent of the men in the same age group, and at ages 55 to 64, 35 percent of the women and 29 percent of the men had training. It may be that relatively few men in these age groups had acquired noncombat training in the Armed Forces during World War II, and all of them would have been too old for peacetime service when the Universal Military Training Act was passed in 1948.

In all except the oldest group, men were more apt to be taking training at the time of the survey. The proportion of men taking training (including some who had had other training) ranged from 9 percent of the 22- to 24-year-olds down to 1 percent of the 55- to 64-year-olds.

From the inverse relation between age and extent of training, it is clear that the general and persistent rise in educational levels has been instrumental in nearly doubling the extent of formal training during the past half century, as shown in the following tabulation:

Year of birth	*Age in 1963*	*Percent with formal job training* [1]
1899–1908	55–64	31
1909–1918	45–54	40
1919–1928	35–44	51
1929–1938	25–34	52
1939–1941	22–24	57

[1] Excludes persons still taking training who had no previous training.

This trend has been reinforced by a tendency toward greater formalization of training in recent decades.

Variations by Color

Educational disadvantage also was linked with a comparative lack of formal training for nonwhite workers. Some 51 percent had not gone beyond the eighth grade; the corresponding proportion for all workers, white and nonwhite, was 32 percent. Conversely, only 32 percent of the nonwhites, but 46 percent of all workers, had taken any formal training.

Among older workers, barely one-fifth of the nonwhites had training, compared with about three-eighths of the whites and nonwhites together. The largest differences occurred among men with less than 8 years of schooling, and among women high school graduates, as shown in chart 3. The latter finding may be evidence of the "circular" effects of job discrimination. In the years when many of these nonwhite women were in high school, school counselors may have been advising Negro girls not to take vocational training for office work because they could not be hired for such jobs, and such training was limited or nonexistent in the Negro segment of segregated school systems.

Variations by Employment Status

Nonwhite women who had training were less likely to be unemployed than those who did not. (See table 3.) Among nonwhite men, however, the unemployment rate was about the same for the trained and the untrained.

For the work force as a whole—whites as well as nonwhites—the average rate of unemployment was somewhat lower for workers with training than for those without. Fewer of the unemployed than of the employed had had training, with the exception of men and women under age 25 and women aged 55 to 64, where about the same proportions had training.

Unemployment was, however, more closely linked to the level of education than to formal job training. Only 30 percent of the unemployed were high school graduates, but 40 percent of them had had formal job training. These ratios compare with 44 and 46 percent, respectively, of the adult labor force. As a result, the unemployment rate for high school graduates without job training was much lower than that for nongraduates with training, as shown below.

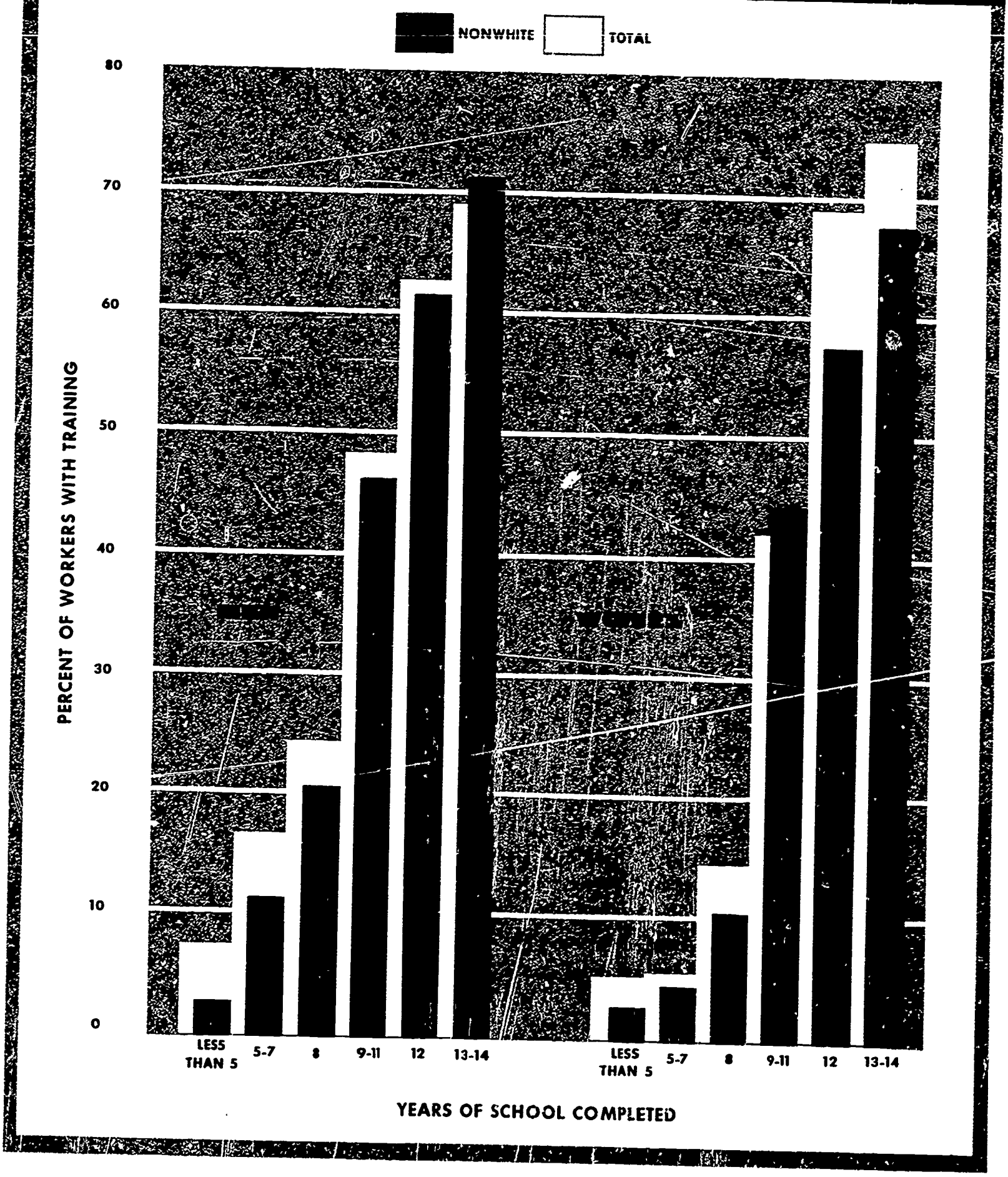
Training status and sex	*Unemployment rates, by years of school completed*					
	Total	*7 years or less*	*8 years*	*9 to 11 years*	*12 years*	*13 to 14 years*
Both sexes	5.2	7.0	6.3	6.1	3.5	3.9
No training	5.8	7.4	6.1	6.2	3.3	2.7
With training [1]	4.6	3.9	7.0	5.9	3.7	4.3
Men	4.9	6.3	6.6	5.8	2.6	4.0
No training	5.3	6.7	6.5	5.8	2.2	2.1
With training [1]	4.4	3.7	6.8	5.7	3.0	4.8
Women	5.8	8.9	5.7	6.7	4.8	3.8
No training	6.6	9.1	5.4	6.8	5.3	4.2
With training [1]	5.0	5.4	8.1	6.2	4.7	3.4

[1] Excludes all persons still taking training.

CHART 3

EXTENT OF TRAINING BY EDUCATION AND SEX, NONWHITE AND ALL WORKERS, APRIL 1963

(CIVILIAN WORKERS AGED 22-64 WITH LESS THAN 3 YEARS COLLEGE)



The inverse relationship between training and the rate of unemployment was due almost entirely to lower unemployment among trained workers who had not completed even elementary school. Unemployed workers with more education had at least as much training as the employed, and significantly more in the case of men high school graduates (with a disproportionate number of those aged 22 to 24 among the unemployed, as noted) and of women whose education had ended with completion of elementary school. Thus, at the higher levels of education, the unemployment rates for workers with training were either about the same as or higher than those for workers without training. The higher rates were, however, more than offset in the total by the lower rate for the fortunate few with less than 8 years of schooling who had taken training.

The unemployed, as well as the older workers and the nonwhite workers, were also less likely to have taken training for more than one skill, again reflecting their educational disadvantages. In the labor force as a whole, some 6.8 million workers—about three-tenths of those with training—had learned or tried to learn two or more occupations. Only about one-fifth of the 55 to 64-year-olds and of the nonwhite workers with training had learned more than one skill. Similarly, less than one-fourth of the trained unemployed had studied two or more skills.

NATURE OF JOB TRAINING

When the number of workers who had acquired both single and multiple skills is compared with the number of training programs taken, it is apparent that about one-fourth of the programs represented training in a second or third occupation or field.[10] On the other hand, perhaps as many as one-tenth of the programs represented a second or third training course in one occupation.

With these relationships in mind, we can now examine the occupational and institutional composition of the training programs. Both manifested differences as between training programs in progress at the time of the survey and those taken in the past.

[10] The 23.6 million workers with training had taken some 35.3 million training programs. About 5.2 million workers reported training in two skills, and nearly 1.7 million, in three or more skills.

As previously indicated, training in a single occupation taken in two different institutions is counted as two training programs, but only one skill.

Occupational Patterns

Information on the occupation or field of training covers programs in which at least 100,000 workers reported they had taken training—over four-fifths of all programs taken in the past. Although 29 percent of the past programs could be identified only with a broad field of study rather than with a particular occupation, most of them can be allocated to one or another of the broad occupational groupings, as shown below.

Occupation or field to which training related	*Training programs taken previously*	*Training programs in progress*
All programs: Number (in thousands)	35,328	1,484
Percent	100	100
White-collar jobs:		
Professional, technical, and kindred occupations	12	23
Clerical occupations	13	4
Business and commercial fields	16	5
Sales occupations	(1)	1
Merchandising field	1	1
Blue-collar jobs:		
Craftsmen, foremen, and kindred occupations	24	26
Operative occupations	2	1
Dressmaking and related fields	1	1
General trades field	3	1
Service jobs:		
Home economics field	3	1
Other service occupations	4	4
Farm jobs:		
Agricultural field	4	2
Occupations and fields not elsewhere classified	15	25
Occupation or field not available	3	4

[1] Less than 0.5 percent.

NOTE: The sums of components may not equal totals because of rounding.

The fairly large number of programs being taken at the time of the survey that could not be allocated precludes detailed comparison of the distributions. It is, however, readily apparent that training in professional and technical occupations was much more prevalent and training in clerical occupations and business and commercial fields much less prevalent in current than in past training.

Institutional Patterns

Like the occupations or fields of training, the various training institutions had significantly different roles in current and past training. Perhaps the most significant feature of past training revealed in the following tabulation is the vast amount of it that had been taken in educational institutions. High schools alone accounted for nearly two-fifths of all training programs, and three other types of educational institutions—junior colleges, technical institutes, and special schools—together provided about three-tenths of the programs. Correspondence schools added another 6 percent. Educational institutions were naturally far less important in current training, since workers under the age of 22 were excluded from the survey.

Source of training	*Training programs taken previously*			*Training programs in progress*		
	Total	*Men*	*Women*	*Total*	*Men*	*Women*
All sources	100.0	100.0	100.0	100.0	100.0	100.0
High school	37.7	29.5	55.4	10.5	8.5	17.8
Special school	19.4	15.4	28.0	22.6	18.1	39.5
Armed Forces	11.4	16.2	1.2	2.9	3.0	2.5
Apprenticeship	8.2	11.7	.8	16.6	20.9	.6
Company school	6.6	7.5	4.9	12.6	13.7	8.6
Correspondence school	6.0	7.7	2.4	21.2	24.1	10.5
Technical institute	6.0	8.2	1.3	6.9	8.5	.6
Junior college	4.5	3.8	6.0	6.5	2.9	19.7
Other	.1	.1	(1)	.1	.2	----------

[1] Less than 0.05 percent.

NOTE: The sums of components may not equal totals because of rounding.

Considering the sources of past training, it was to be expected that most of it had been obtained at the start of working life. Two-thirds of the workers reported that they had begun their most recent training before the age of 25, and half of these had done so before reaching 18.

The importance of high school commercial and business education for girls, as well as the withdrawal of women from the labor force during their childbearing years, is reflected in the fact that women were more likely than men to have taken their training early. Nearly half of the women had started their last training before they were 18, compared with less than one-fourth of the men. However, one-fourth of the older men and one-fifth of the older women had begun some training after they were 35 years old, as shown in chart 4.

All of these differences combined to produce varied institutional patterns of training in the different occupations and fields. Again, the patterns shown in the tabulation on page 12 are suggestive, rather than definitive, because separate occupational data could not be presented for a substantial amount of training.

In the white-collar fields, the influence of educational attainment on the institutional patterns of training is especially apparent. Since college graduates dominate professional and technical jobs,[11] nongraduates had trained for such jobs primarily in junior colleges, technical institutes, and special schools. Other important sources of training for some such occupations were the Armed Forces (chiefly for technical occupations) and correspondence schools. For clerical occupations, where the average worker in 1962 had completed 12.5 years of school, high schools were the chief training medium for all but telephone and office machine operators. For these two, the respective major sources were company training schools and special schools. Among the sales occupations, where some post-high school education is also common, the only one in which enough workers reported training to permit separate tabulation was that of insurance agents, brokers, and underwriters—a group scarcely typical of the country's 4½ million sales workers. However, it is probable that company training schools, the major source of training for insurance sales personnel, also supply a substantial amount of training for sales workers in other fields, particularly those employing numerous college-trained

[11] For information on educational attainment of the various occupational groups, see 1964 *Manpower Report*, appendix table B-14, p. 220.

Institution	*Occupations or fields of training*[1] *in which institution was—* *Most important source* (Italics indicate majority)	*Important secondary source*
High school	*Agriculture* Auto mechanics *Bookkeepers* *Business or commercial* Compositors and typesetters Dressmaking, etc. *General trades* *Home economics* Merchandising *Secretaries* *Stenographers* *Typists*	Accountants and auditors Brickmasons Carpenters Draftsmen Electricians Machinists Metalworkers
Junior college	*Teachers*	Engineers
Technical institute	Draftsmen Technicians, engineering and physical sciences	Electricians Engineers Radio and television mechanics
Special school	Accountants and auditors *Artists and art teachers* *Barbers* *Hairdressers and cosmetologists* Office machine operators *Practical nurses* *Professional nurses* Welders and flamecutters	Bakers Dressmaking, etc. Insurance agents, brokers, and underwriters Medical and dental technicians Metalworkers Plumbers and pipefitters Secretaries Supervisors, etc. Telephone operators
Apprenticeship	Brickmasons *Carpenters* Electricians Machinists *Meatcutters* Metalworkers *Painters* *Plumbers and pipefitters* Utility linemen and servicemen	Barbers Compositors and typesetters
Company training school	Insurance agents, brokers, and underwriters Supervisors, etc. Telephone operators	Merchandising Office machine operators Utility linemen and servicemen Welders and flamecutters
Armed Forces	*Airplane mechanics* *Bakers* Medical and dental technicians	Auto mechanics Electricians Meatcutters Metalworkers Office machine operators (male) Radio and television mechanics Teachers Technicians, engineering and physical sciences Typists (male) Utility linemen and servicemen Welders and flamecutters
Correspondence school	Engineers Radio and television mechanics	Accountants and auditors Artists and art teachers Technicians, engineering and physical sciences

[1] Occupations or fields in which at least 100,000 persons had taken training, excluding programs being taken at the time of the survey.

workers. Such schools also provided one-fourth of the training in merchandising (distributive as well as sales occupations), but high school vocational courses provided more of this type of training.[12] For the managerial group, no pattern was discernible; their training may have been concentrated in the substantive, rather than the administrative, aspects of the business. Company schools dominated training in supervision and personnel management, as would have been expected.

Among the blue-collar occupations, separate data relate primarily to the craftsmen, foremen, and kindred worker group. In this occupational group, where the average years of school completed was just under 12 in 1962, high school training was also substantial. Apprenticeship, however, was the dominant source of instruction for the construction craftsmen, machinists, and utility linemen and servicemen. The Armed Forces were the dominant source of training for bakers and mechanics.

Special schools provided a majority of the training in the three service occupations for which separate data are available: Barbers, hairdressers and cosmetologists, and practical nurses. Some of the training for practical nurses, as well as for medical and dental technicians in the professional and technical worker group, had undoubtedly been obtained in vocational education programs for health personnel which were authorized in 1957 under an amendment to the George-Barden Act. Apprenticeship was also a fairly substantial source of training for barbers.

Duration and Completion

As with the sources of training, both the duration and the completion rates varied by the occupation for which training was taken. The completion rate ranged downward from about 95 percent for office machine operators, insurance agents, bakers, and hairdressers to about 50 percent for artists and art teachers and engineers. (See table 5.) The average for all occupations and fields of training was about 80 percent. Generally, completion rates were highest in fields where the Armed Forces and company schools were important sources of training, and lowest where correspondence schools gave a large share of the instruction.

Professional and technical occupations except professional nurses and medical and dental technicians had below average completion rates. This was reflected in low rates for all training in junior colleges, technical institutes, and correspondence schools—major sources of training for these occupations. Among the clerical occupations, outstandingly high completion rates were reported for telephone operators as well as office machine operators, for which company schools were important training sources. Only for typists was the completion rate significantly below average; perhaps trainees dropped the course as soon as they had acquired enough competence for personal, rather than vocational, use. Among manual workers, rates were especially high for occupations where the Armed Forces provided a substantial amount of training—bakers, utility linemen and servicemen, meatcutters, and airplane mechanics. Both barbers and hairdressers had high completion rates.

Women had higher completion rates than men in most training institutions, although their overall rates were not very different. (See table 6.) Similarly, although the rates for women were slightly higher within each age group, overall completion rates were quite uniform among the several age groups. (See table 7.)

The completion rates for nonwhite men and women were significantly below average. Only two-thirds of them, compared with four-fifths of all workers, had completed their training.

About one-fifth of the training lasted less than 6 months, but about half had been pursued for more than 1 year. More of the training in the craft occupations, where many workers reported apprenticeship, was in the latter category. High proportions of the training programs also lasted over a year for professional nurses and for clerical jobs and other fields of training taken predominantly in high school business and vocational courses. Training programs taken in the Armed Forces or company schools tended to be of shorter duration, perhaps because they were more intensive. While the short programs were somewhat more likely to be completed than the longer ones, there were many long programs with high completion rates.

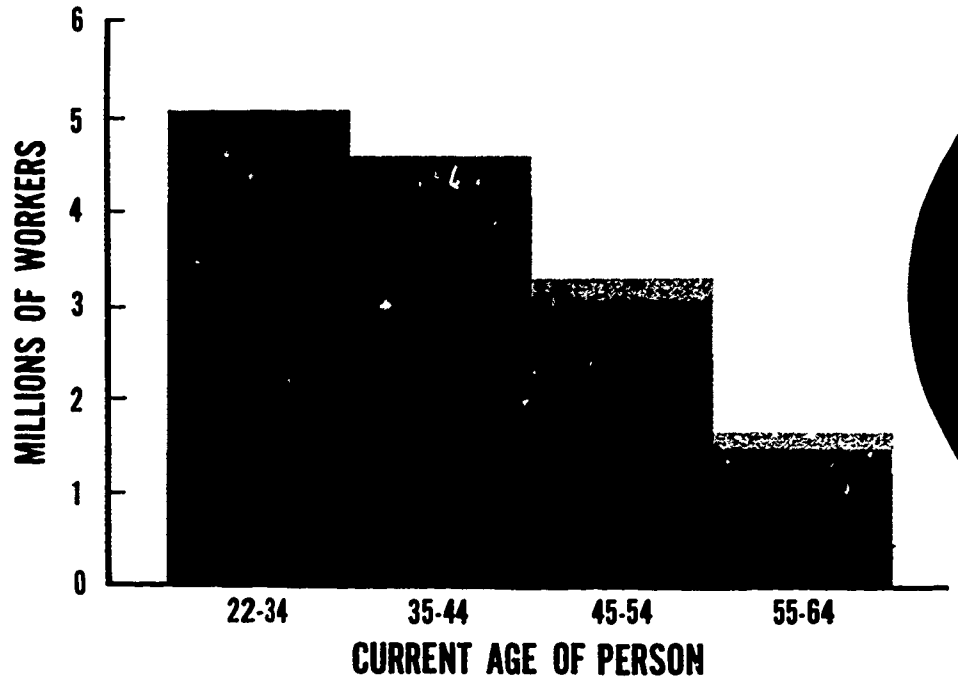
[12] Federally supported vocational education programs in merchandising chiefly have enrolled adults on a part-time basis or at night; until 1963, these programs were open only to students who were employed. See *Education for a Changing World of Work, Report of the Panel of Consultants on Vocational Education, Prepared at the Request of the President of the United States*, U.S. Department of Health, Education, and Welfare, Office of Education, 1963, p. 39.

CHART 4

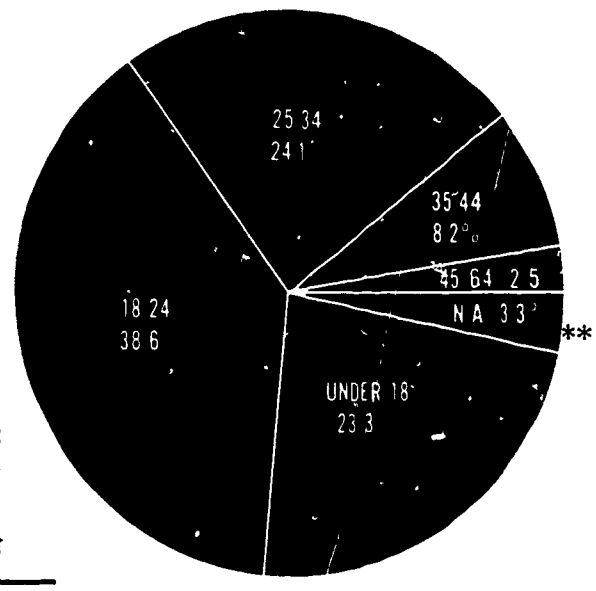
AGE OF STARTING MOST RECENT TRAINING BY SEX AND CURRENT AGE, APRIL 1963

(CIVILIAN WORKERS AGED 22 - 64 WITH LESS THAN 3 YEARS' COLLEGE)

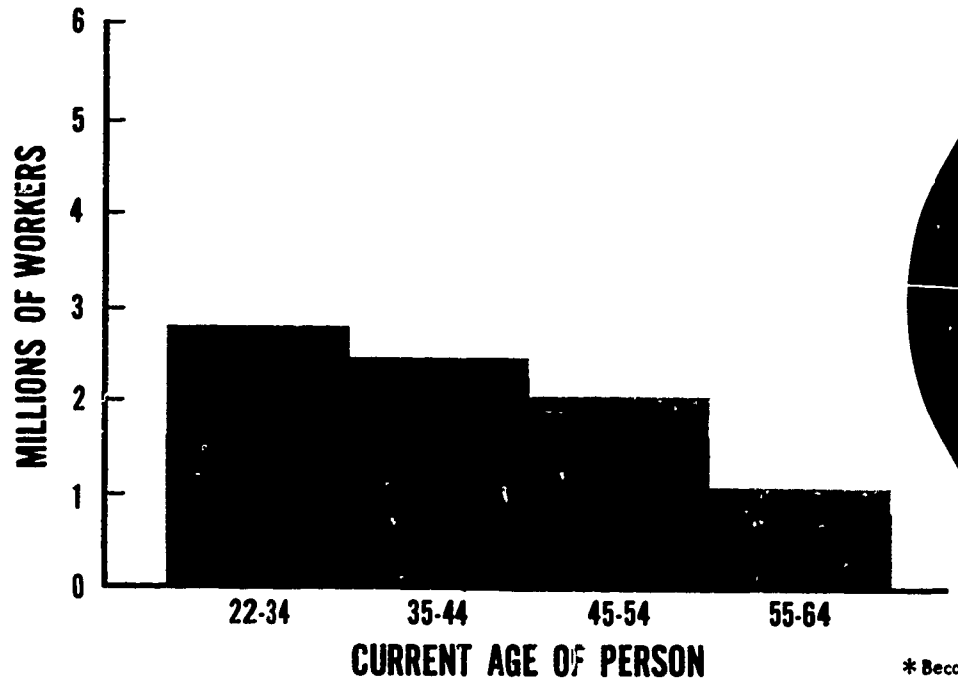
MEN



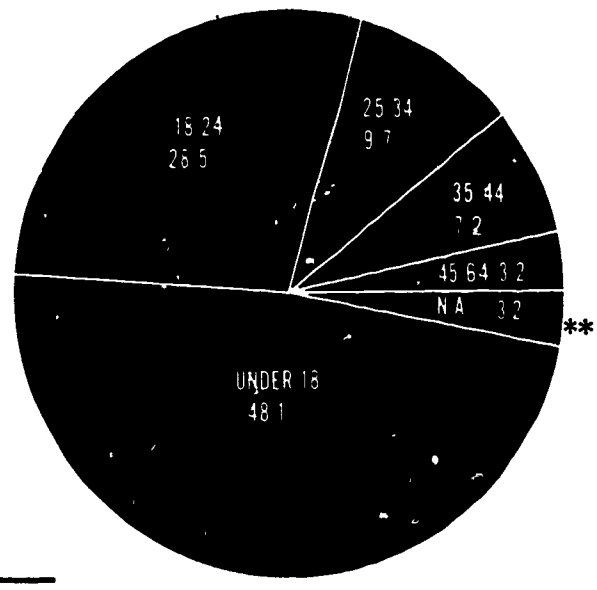
ALL MEN



WOMEN



ALL WOMEN*



* Because of rounding, the sum of percents will not equal 100.0

** Not Available

AGE OF STARTING MOST RECENT TRAINING

UNDER 18 | 18 TO 24 | 25 TO 34 | 35 TO 44 | 45 TO 64

USE OF FORMAL TRAINING

As we have seen, much of the training had been taken years ago and was perhaps either obsolete, or rendered unusable by job changes; some of it was probably never intended for use on the job; and fairly high proportions had never been completed and had lasted only a short time. All of these circumstances would tend to restrict current use of training on the job. Thus, the finding that three-fifths of the workers with training were actually using it on the job in April 1963 is a compelling indication of the lasting value of a major share of formal job training. In addition, nearly one-fifth of the workers had used their training on previous jobs.

The use of training differed for men and women. About 79 percent of the men had used their training, either on the current or a previous job, compared with 84 percent of the women.

Current Use

Among men, the least used types of training included that for bakers, medical and dental technicians, and airplane mechanics, for all of which the Armed Forces were an important source. (See table 8.) In addition, a good many men had had but were not using training as artists, teachers, bookkeepers, typists, and that obtained in general trades vocational courses. The training-completion rate for the first two was fairly low; for the other three, men had taken at least seven-tenths of their training in high school, and presumably some of them were not using it because it had not been taken for vocational purposes or had not been sufficiently intensive for such purposes. The highest current use of training by men was in such professional and technical occupations as accountants, engineers, and engineering technicians; in such crafts as printing and construction, utility linemen and machinists; and in work as meatcutters and barbers.

In several occupations, the proportion of unused training was much lower than the proportion of uncompleted training. These disparate proportions (shown in tables 5 and 8) imply that, in these occupations, training was often used by men even though it was not completed. Among the occupations in which this occurred were accountants, engineers, construction craftsmen, and meatcutters.

Among women, relatively little use was being made of training in home economics, sewing and dressmaking, and typing. Such courses are sometimes compulsory in high school and are often taken for home use rather than employment use. Women were currently making the most intensive use of training in professional nursing, bookkeeping, and secretarial and other business and commercial occupations. In all of these fields, too, training never used was a much smaller share of the total than uncompleted training.

Men between the ages of 55 and 64 were making greatest use of their training and those under the age of 35, least use. (See chart 5.) The proportion of women using training did not differ appreciably by age except among the nonwhites. Seventy percent of the nonwhite women aged 45 to 54, but only 45 percent of the younger ones, were currently using their training.

As expected, training taken later in life was more likely to be used on the current job than training taken earlier. For example, among men between 45 and 54 years old whose last training began before they were 18, only 44 percent were using the training on their current job; for those who started training at age 45 or over, 69 percent were currently using it. Undoubtedly many of the skills acquired when one is older are directly related to the job held, whereas some young people take "speculative" training for a job that may never materialize. (See table 10.)

Substantially more women than men were using early training. Among 35- to 44-year-old workers, for example, two-fifths of the men and three-fifths of the women whose most recent training had begun before the age of 18 were using it on their current job. This difference reflects the greater prevalence of multiple skill training for men. It may also be associated with the somewhat greater occupational mobility for men; 27 percent of the men, but only 17 percent of the women, had used their early training on a previous job. Thus, about one-third of the men but only one-fifth of the women had never used their early training. Undoubtedly, girls, with their traditionally more limited job choices, can make "wiser" training choices than boys. In addition, there are inevitable inconsistencies between mandatory training in the Armed Forces and civilian job choice.

Previous Use

The workers who had used their training only on a previous job represented one-fifth of all workers with training and, in the case of nonwhites, one-fourth. In every age group except 55 to 64, higher proportions of men than of women had used their training on a prior job. However, as shown in the percent distribution of the workers who had used their training only on an earlier job (at the top of p. 17), one-third more of the women than the men had last used their training before 1946.

With the end of the World War II jobs for which they had been trained, many women either returned to their former work or left the labor force altogether. Moreover, many women past middle age who return to the labor force tend to move into sales and service jobs which do not utilize their earlier training. Such jobs offer the flexible hours wanted by these women, many of whom are barred by age from the office work for which they were trained in their youth.

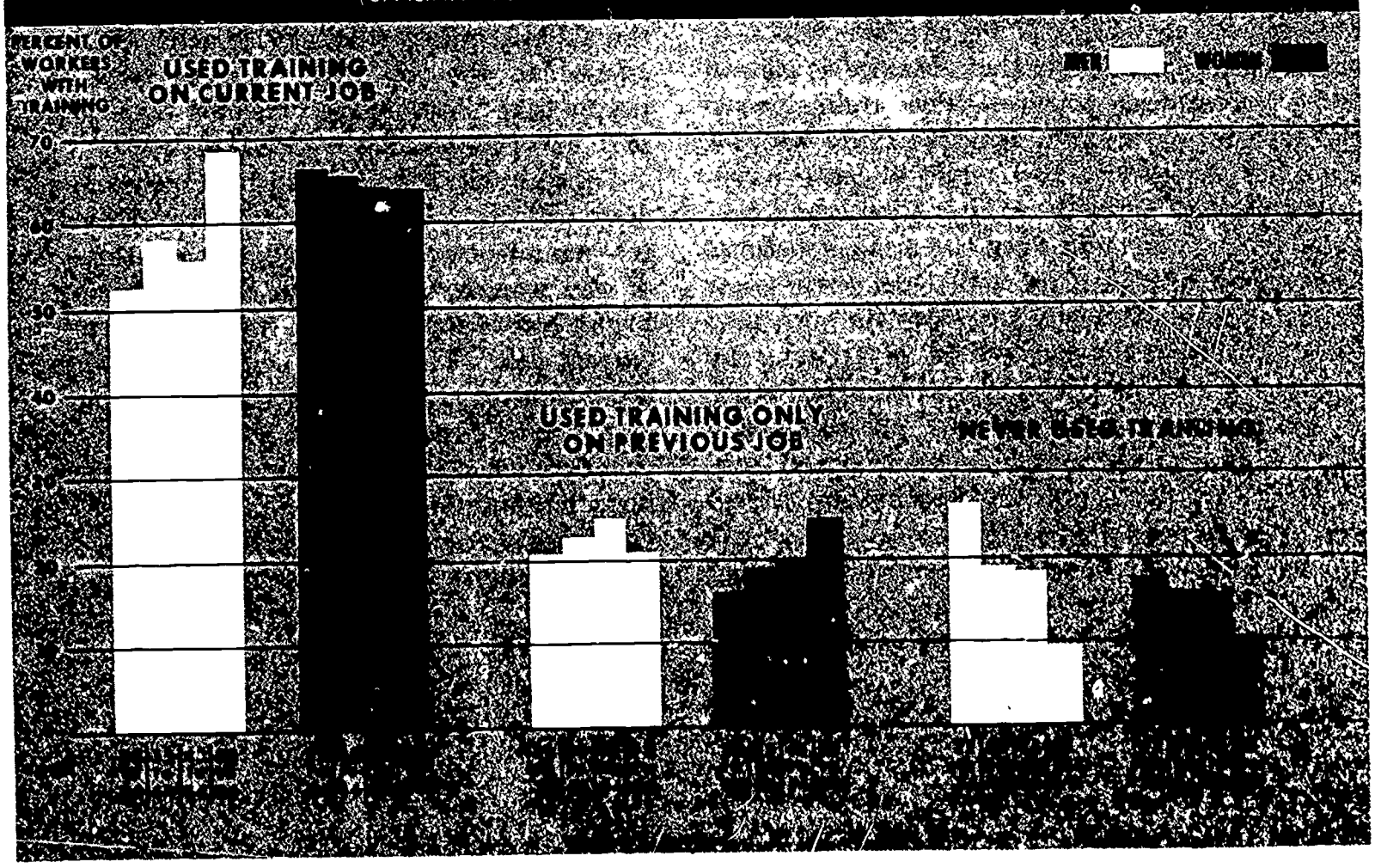
For women, the training with the highest rate of pre-1946 use was in teaching; presumably women with no more than 2 years of college cannot meet the standards of most of today's school systems. For men, training as bakers, welders, sheetmetal workers, airplane mechanics, and machinists was most likely to have been so long unused.

Unused Training

Much larger proportions of nonwhite workers than of all workers had never used their training—34 and 26 percent of the nonwhite men and women, respectively, compared with 20 and 16 percent of all workers with training. Overall, only 43 percent of the nonwhites with training were currently using it—a further indication of their special difficulties in the labor market. The proportion failing to use training was above average for nonwhite men and women in almost every age group. (See table 9.)

CHART 5 **USE OF TRAINING BY AGE AND SEX APRIL 1963**

(CIVILIAN WORKERS AGED 22-64 WITH LESS THAN 3 YEARS COLLEGE)



Age	Male					Female				
	Total	*1959 to 1963*	*1946 to 1958*	*Before 1946*	*Year not specified*	*Total*	*1959 to 1963*	*1946 to 1958*	*Before 1946*	*Year not specified*
Total, 22 to 64 years	100.0	24.5	42.2	21.9	11.4	100.0	22.0	33.8	29.6	14.6
22 to 34 years	100.0	39.7	45.1	.7	14.6	100.0	35.4	47.4	1.8	15.4
35 to 44 years	100.0	20.5	48.8	22.6	8.1	100.0	26.0	39.6	24.7	15.7
45 to 64 years	100.0	14.7	37.6	38.0	9.7	100.0	15.4	25.2	44.4	15.0
45 to 54	100.0	14.6	24.7	45.3	15.4	100.0	13.0	14.1	62.2	10.7
55 to 64	100.0	14.7	33.7	40.2	11.4	100.0	14.5	20.9	51.3	13.3

WAYS OF LEARNING THE JOB

Although a majority of the workers with training were using it on the job, it must be remembered that not quite half of the work force had formal training. How, then, did workers learn their current jobs?

According to the survey, most of them had "just picked up" the necessary skills or had developed them through informal on-the-job training and experience. Some reported a combination of one or the other of these methods with formal job training as the means by which they had learned their jobs, so the following figures on ways of learning overlap.

—Only 8 percent said that no training was needed,

—On-the-job learning was reported by 56 percent. This learning included instruction from supervisors or fellow workers, "working their way up," and company training courses (part-time or full-time for less than 6 weeks and hence not counted as formal training). Even though apprenticeship is, of course, on-the-job training, it is not included here, but in formal training.

—"Casual" learning was reported by 45 percent. In this category were learning from a friend or relative, "just picked it up," and other such answers.

—Some 30 percent [13] said they had learned their current job through formal training.

The data on the use of formal training as a means of learning the job are classified by current occupation and therefore differ from the earlier figures on the use of training programs, which were classified by the occupation in which training was taken. Other sources of difference are that the program figures encompass all training taken by persons who had training in more than one occupation as well as training for a given occupation which was being used in a related occupation. Thus, although only 36 percent of the typists' training programs, for example, were being used on the current job, some 86 percent of the persons employed as typists said formal training was one of the ways in which they had learned their current job. Not only is much typing training taken for personal use, as suggested earlier, but many workers appear to use it primarily on jobs held early in their careers. Conversely, 53 percent of the carpentry training programs were being used on the job, but only 31 percent of the carpenters had learned their jobs through formal training. This difference may indicate both a shortage of trained carpenters and the greater opportunities for progression opened up by training.

As expected, professional and technical workers most frequently had learned their jobs through formal training, with nearly two-thirds of them reporting formal training as a means of learning, as shown in the tabulation on page 18. Most of the professions are, of course, dominated by colle graduates, whereas the group under discussion here is limited to those with no more than 2 years of college. Especially high proportions of draftsmen and professional nurses reported learning through formal training. (See table 11.)

Clerical workers were the only other occupational group in which a majority of the workers reported they had learned their jobs through formal instruction. This also was to be expected, since the group includes such occupations as

[13] This figure is about 3 percentage points higher than the figures on the prevalence and current use of training would indicate. Part of the difference may be attributable to the use of training being taken at the time of the survey by persons with no previous training, who were excluded from the use figures. The difference cannot be fully explained, because the only internal consistency check that could be made, with the resources available, was to insure that persons who reported they were using training on the job were also counted among those who reported formal training as a means of learning the job.

secretary and stenographer, in which formal training is an almost universal entrance requirement.

On the other hand, only about four-tenths of the craftsmen and kindred workers said they had learned their current jobs through formal training, including apprenticeship. This is not particularly surprising; a fairly large share of the training in the diverse occupations had been obtained in high school and the Armed Forces—much of it many years ago. Electricians, sheet-metal workers, plumbers and pipefitters, compositors and typesetters, tool and die makers, machinists, airplane mechanics, radio and television mechanics, and utility linemen and servicemen most frequently reported learning the present job through formal training. Carpenters and painters reported formal training fairly infrequently, as did foremen and heavy construction workers and bakers.

Among factory operatives (semiskilled workers), only 1 in 8 said he relied on formal training. Only in the case of meatcutters (except slaughter and packing house) and welders did as many as 1 in 3 say so.

Most sales workers, as well as those in the managerial group, also said they had learned their work on the job or picked it up without formal instruction. Among sales workers, only in insurance and real estate did as many as half report formal training; only a sixth of the retail sales force had learned their jobs through formal instruction. Similarly, among the managerial group, the proportion with formal training was lowest in trade, where self-employment is especially prevalent.

Among the service workers, about one-fourth had used formal training to learn their jobs. Especially high proportions of barbers and hairdressers, health personnel, and policemen and firemen had done so.

A similar pattern was observed in the workers' answers to a question on what had been the most helpful method of learning their current job. On-the-job training was most often mentioned, followed by casual methods and then formal training, but about 1 in 7 was unable or failed to designate the most helpful way. Also, formal training was most frequently reported as being most helpful by white-collar workers and craftsmen. A majority of the workers among nurses, secretaries and stenographers, and hairdressers found schools (of all kinds) the most helpful means of learning the current job, as did 40 to 50 percent

Current occupational group	*Total employed in occupation (percent)*	*Percent reporting [1] job learned by—*			*Percent reporting that most helpful way was—*				*Percent reporting no training needed*
		Formal training [2]	*On-the-job training [3]*	*Casual methods [4]*	*Formal training [2]*	*On-the-job training [3]*	*Casual methods [4]*	*Not specified*	
All occupational groups	100.0	30.2	56.2	45.4	11.9	37.1	28.9	14.6	7.5
Professional, technical, and kindred workers	100.0	64.6	66.7	33.2	29.7	34.9	17.4	16.0	2.1
Managers, officials, and proprietors, except farm	100.0	36.2	57.1	55.7	11.2	33.3	35.8	15.7	4.0
Clerical and kindred workers	100.0	53.6	71.4	29.5	22.3	46.9	13.4	15.3	2.0
Sales workers	100.0	23.4	60.2	47.4	5.7	43.2	30.8	12.7	7.5
Craftsmen, foremen, and kindred workers	100.0	40.6	64.8	47.5	16.7	37.0	25.7	18.9	1.8
Operatives and kindred workers	100.0	12.9	61.8	42.6	4.5	47.5	27.8	11.6	8.6
Private household workers	100.0	10.3	9.3	56.4	5.1	5.4	48.3	13.3	27.9
Service workers, except private household	100.0	24.6	45.5	42.7	12.4	31.3	30.2	12.6	13.5
Laborers, except farm and mine	100.0	6.9	40.0	50.5	3.0	29.6	37.9	11.3	18.1
Farmers and farm managers	100.0	20.1	17.6	79.7	4.1	8.0	60.2	19.2	8.4
Farm laborers and foremen	100.0	11.1	19.2	64.8	3.2	13.8	48.6	16.9	17.7

[1] Since about one-third of the respondents indicated more than one way, the sums of the percentages exceed 100.0. These figures include all civilian labor force participants aged 22 to 64 with less than 3 years of college. For the unemployed, data relate to the last job held.

[2] Includes training obtained in schools of all kinds (company training schools as well, where training was full time and lasted at least 6 weeks), apprenticeship, and the Armed Forces.

[3] Includes on-the-job training by supervisors, company training courses (part-time, or full-time for less than 6 weeks), and "worked way up by promotion."

[4] Includes learning from a relative or friend, "just picked it up," and other such methods.

of those employed as typists, radio and television mechanics and repairmen, and barbers. Apprenticeship was reported to be the most helpful learning method by as many as one-fifth of the compositors and typesetters, electricians, machinists, tool and die makers, and barbers. A sizable number of managerial personnel in the construction industry also reported apprenticeship had been their most helpful training. Highest regard for training in the Armed Forces was reported by engineering technicians; cranemen, derrickmen, and hoistmen; and airplane and radio and television mechanics.

The role of formal training during a man's work life is no doubt understated in these findings. Workers were asked how they learned their current job and what training they found most helpful in learning it, rather than how they learned their occupation or an earlier job from which they may have progressed. For some of the older men, promotion to a supervisory job not utilizing the skills learned in their early training may help explain the small importance assigned formal training. Similarly, some of the older women may have used high school training in clerical jobs before marriage but later entered sales or service occupations whose flexible work schedules dovetailed with family responsibilities.

For such reasons as these, workers were asked whether their current job or a different job made best use of their training or experience; if a different job, what occupation, and how they learned that occupation. Again, about 1 in 7 did not answer. Among laborers, farmers, and private household workers, the proportion failing to answer was above average. (See table 12.) Many persons in unskilled occupations replied that no job made best use of their abilities or that all jobs made the same use.

About four-fifths of both men and women, and younger as well as older persons, said that their current job best utilized their qualifications. Unemployed men were somewhat less likely to give this answer (with respect to the last job they held) than the employed. Among those who answered, only seven-tenths of the unemployed men who had last worked as operatives, but nine-tenths of the employed operatives, reported best use of their skills on the current (or last) job. Among women, only a slightly smaller proportion of the unemployed than the employed reported best use of their skills on the most recent job; the widest difference was among sales workers.

Men who had invested considerable time or money in their careers—professional and technical workers, managers and proprietors, and craftsmen—were most likely to be working at the job which made the best use of their skills.

Sizable proportions of those who reported that another job had made best use of their training and experience said that their best occupation had been in the same occupational group they were now in. In fact, a majority of the men currently employed as craftsmen and of the women working in clerical jobs so reported.

Surprisingly, at least one-fourth of the men in each occupational group who said a different job had been better reported that employment as a craftsman had best utilized their talents. Overall, some 35 percent of the men who thought a different job had been best said that that job had been in the craft occupations. About one-fifth thought an operative's job had been best.

Among the women, over two-fifths chose clerical work as their best occupation. Even among private household workers, about one-sixth so reported. The women's second and third choices ranked far below clerical jobs, with about 1 in 7 indicating a service job and 1 in 9 an operative job.

The answers to the question about ways of learning the job that made best use of skills buttress the inference that the current use of training understates its lifetime importance. Over half of the persons not currently engaged in the kind of work which they thought made best use of their skills reported they had learned that kind of work through formal training. (See table 13.) Had these workers been employed in such jobs, the importance of formal training as a means of learning the job would, of course, have been materially enhanced. Only those who chose sales work as their best job reported formal training less frequently as a way of learning than those currently engaged in that kind of work. Again, however, on-the-job training was reported by the largest number of workers (including some who also reported formal training in response to instructions to indicate *all* ways of learning). Casual methods of learning were somewhat less important among workers not engaged in the kind of work for which they felt best suited than among the labor force as a whole.

Workers With 3 or More Years of College

The findings of previous surveys that most college-trained personnel use their college majors in subsequent employment are confirmed by the 1963 study of workers' training. Of the 8.7 million workers who had completed 3 or more years of college, almost 80 percent held positions involving use of their major subjects, as shown below.

Major field of study	*Workers reporting*		*Percent of workers using college major in current job*
	Number (in thousands)	*Percent*	
Total, all fields	8,691	100	79
Education	1,949	22	82
Business	1,543	18	86
Engineering	1,110	13	90
Humanities	894	10	68
Health sciences	756	9	93
Social sciences	617	7	64
Physical sciences	363	4	76
Biological sciences	278	3	67
Agriculture	211	2	68
Other fields	[1] 970	[1] 11	[2] 77

[1] Includes 152,000 workers who failed to specify their college major.
[2] Excludes 152,000 workers who failed to specify their college major.
NOTE: The sums of components may not equal totals because of rounding.

The proportion was higher in some fields than others. Over 85 percent of those trained in the health sciences (including medical technology and pharmacy), engineering, and business administration were employed in those fields, compared with only about 65 percent of those trained in the social sciences, biological sciences, humanities, and agriculture. (See table 14.)

Graduates were more likely to be working in their major field than workers who had finished only 3 years of college—82 and 63 percent, respectively. The major field of study in college was being applied on the current job by over 90 percent of the graduate male engineers, women graduates in education, and the men and women, both graduates and nongraduates, who had majored in the health sciences. Graduates who had studied agriculture or the biological or social sciences were least likely to be working at their major field of study—only about 70 percent were doing so. Nongraduates who had taken business or engineering were much more likely to be using their training than those who had majored in education or the humanities.

There were no marked differences in the overall proportions of younger (under 45 years) and older (45 years and over) workers using their college training, but there were some differences in specific fields. Among college graduates, younger workers were more likely than older workers to be using business and engineering skills, while older workers were more likely to be using college training in the social sciences and the humanities.

Even among those not employed in the field of their college major, nearly half were employed in professional and technical or managerial jobs. (See table 15.) And about one-fifth of them said that college courses in other fields had been one of the methods used to learn their current job. More than one-fourth reported that they had learned the job through company training, and nearly two-thirds stated that they had learned on the job. (Again, a substantial number indicated more than one way of learning.)

IMPLICATIONS AND RECOMMENDATIONS

Notwithstanding the cliché that states otherwise, the facts do not always speak for themselves, and the findings of the 1963 survey of workers' training may well lead different readers toward different conclusions. For example, the fact that the benefits of formal vocational training have now been extended to 9 out of every 20 adult workers without extensive college experience may be taken to imply either the substantial success of our American job training system or its failure with respect to the other 11 workers.

This concluding section sets forth some of the implications of the survey. No attempt is made to exhaust all possible conclusions that might be drawn or to reconcile the real or potential inconsistencies among them. In several cases where the implications are judged to be unclear or in conflict, some recommendations for further research are made. This survey of occupational training, and the other manpower research already completed since passage of the Manpower Development and Training Act of 1962, can be taken as a beginning on the task of evaluating the Nation's training system, but much more research will be required before a full assessment can be made.

The high correlation between the level of general education and the presence of job training, along with the high proportion of our training being offered in secondary schools, implies that the schools offer the broadest possible base for the expansion of vocational training that may be necessary to meet the challenge of future technological change. At the same time, the close connection indicates that the education-training system is likely to fail the school dropouts who most need training. It follows that the two most critical manpower development policies of the future ought to be strong attempts to increase the holding power of our school system and extensive training efforts directed toward the members of our labor force with the lowest educational attainments. The information developed in the survey cannot be used to assign relative priorities to these tasks, but there is no reason why they should not go on together.

Another inference can be drawn from the survey data showing the differential rates of training possessed by the various age groups in the labor force. Even if we stabilize the amount of vocational training received by our young people and make no further improvements, the labor force of the future will show a higher and higher rate of formal job training when successive cohorts of better trained young people replace the present workers as they retire from the labor force.

This improvement in the Nation's training level that will be achieved by simply continuing present training opportunities can be expected, however, to leave large numbers of unskilled, undereducated workers in the future labor force. By 1975, when we can project a labor force of 93 million, we may expect 32 million workers 18 or older without high school diplomas, even allowing for prospective increases in levels of educational attainment. If the 1963 relationship between formal job training and education persists until 1975, we will still have about 20 million workers in our labor force with neither a high school diploma nor

any formal job training. These figures imply that insofar as structural unemployment is rooted in deficiencies of education and training, it is a long-run barrier to economic growth that should be dealt with by continuing efforts, coordinated by overall planning.

Another of the more striking survey findings is the wide variation in the extent of training use from occupation to occupation. Perhaps these use rates could be used along with other information by school authorities in planning vocational curriculums and making decisions about the resources to be devoted to training for the various occupations. The data would be more useful for this purpose if they included distinctions among geographic areas, more occupational detail, and distinctions among the various reasons why training was unused. The development of such information can be listed among the areas in which further research is recommended.

The wide range in the rates at which training is used in employment also raises a number of questions with respect to those occupations having particularly low rates of training use. Further research might show that much of the training in these occupations was not taken for vocational purposes, that it became obsolete quickly, or that much of it was not pursued long enough to be useful. Alternately, more intensive research might show that some occupations rank low because training is misdirected or is not sufficiently thorough for vocational use; that the quality of instruction is poor; or that counseling and guidance services are inadequate. The research that is required may go far beyond surveys, requiring an examination of curriculums, teaching methods and personnel, the length of training, and many related matters. The whole question of quality, not dealt with in this first survey, will have to be treated at length in such research.

The training received in military service raises some rather special questions concerning the extent of training use and possibilities for its improvement. It is not surprising that the 1963 survey shows that many occupations in which the Armed Forces are most important as sources of training are the same occupations in which training is least used on civilian jobs. This will presumably always be the case as long as military training is geared to the needs of the military establishment, as it must be. At the same time, the survey data imply that there may be room for increasing the transfer value of military training to the civilian economy without diminishing military efficiency. It may be the case that current training in the Armed Forces has a considerably greater transfer value than the training received during World War II, and so the record of civilian use for military training will tend to improve with the passage of time. There is little published research on these questions, and this must be listed as another area needing further study.

Taken at face value, the results indicate an almost universal need for training, but leave a number of unanswered questions about the respective roles of formal and informal training in meeting this need. The answers of workers with respect to the prevalence and helpfulness of informal training indicate that a heavy priority belongs there. On the other hand, a questionnaire addressed to supervisors or employers, or an analysis of such factors as earnings and job turnover, might give us answers at variance with those derived from the subjective evaluations of workers. This whole area must be recommended for further research. While it has long been known that informal training constitutes the most common source of skill development, we still have little knowledge of its nature or quality. This means that there is no common denominator available for making judgments concerning the comparative merits of learning in the classroom and in the school of experience.

Many jobs are becoming more complex as the economy undergoes technological change. There are good reasons to believe that the informal methods that were good enough to learn yesterday's jobs will be inadequate for the jobs of tomorrow. If so, we need a fundamental change in our present mixture of informal and formal occupational training, with a great deal more emphasis on the latter.

In at least two respects, the survey data imply the basic soundness of aspects of present training programs under the Manpower Development and Training Act on which critics have been skeptical of success. The practicality of training older workers on a large scale is indicated by the not infrequent occurrence of training for workers past 35, and a high rate of use in employment for such training. The desirability of formal training for workers with the lowest educational attainment is indicated by the much lower unemployment rate that is associated with the presence of vocational training among workers with less than

8 years of formal education.[14] This latter finding appears particularly important in confirming the wisdom of the 1963 amendments to the MDTA, which greatly extended the capacity of the act to serve the training needs of persons with extremely low educational attainments.

While there was little indication that vocational training has a strong influence on employability for workers at higher levels of general education, the survey does reveal that there is room for improvement in the vocational training possessed by even the better educated workers. The reliance on informal training by craftsmen and other workers in skill levels above the lowest ones needs to be examined more fully, and the qualitative differences between formal and informal training, as noted earlier, remain as questions for future researchers. The need to step up the rate of formal training for skilled, technical, and service workers, if not demonstrated conclusively by the survey, remains as a strong possibility in view of the demonstrated incidence of training in these occupational groups.

The survey data indicate some special needs for particular subgroups within the labor force. Nonwhite workers not only have less job training than whites (mostly, but not entirely explainable by their fewer years of schooling) but lower rates of use in employment for the job training that they do possess. Further research is needed to determine the extent to which this lower rate of training results from inadequate counseling and guidance or deficiencies in the curriculums of segregated schools, and the extent to which the lesser use of training results from discrimination in hiring or from differences in the quality of the training received by whites and nonwhites.

The presence in the labor force of older workers far removed in time from training may pose special problems for this group. Since vocational training for women is even more closely allied to the system of formal education than is the case for men, the girl who drops out of school but remains in the labor force or reenters it may be confronted with employment problems that are particularly difficult, and may have a special training need. There can be little question that more detailed information than that obtained in this first national survey would reveal many more special groups in the population with distinctive training backgrounds giving rise to special problems for those groups.

Finally, it can be suggested that one of the great needs for future research is a measurement of training needs alongside which this inventory of training accomplishments can be set. The survey has given us a better inventory of our training resources than we have ever previously possessed, but no inventory can permit us to judge the adequacy of our existing stock of training until we have a better measurement of our training requirements. If we accept the omnipresence of training needs implied by some worker responses, we still need to know more details about the nature and the urgency of these needs. The task of appraising "the adequacy of the Nation's manpower development efforts to meet foreseeable manpower needs"[15] is only beginning, and further research, some of it already in progress and more in the planning stage, will be required to permit its accomplishment.

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[14] The caveat that correlation does not always show cause and effect should perhaps be repeated here, since those workers with vocational training but very little formal education may have other personal characteristics (not related to their job training) which account for their low unemployment rates.

[15] Manpower Development and Training Act of 1962, section 102(3).

TECHNICAL APPENDIX

The survey reported here was in essence an attempt to learn enough about the scope of training and its variants to permit more sophisticated research on the facets of training with important implications for manpower development. In this, it succeeded, as has been suggested earlier in this report.

But the survey results must be evaluated in the light of what the survey was not intended to do, as well as of its objectives. No attempt was made to measure the quality of training. The only information bearing on this point was whether workers had completed the training, how long it had lasted, whether they had ever used it on the job, and the kind of job in which they were using it currently. Therefore, this survey does not provide a basis for evaluating the adequacy of the ways in which workers have received their preparation for a job.

Similarly, only "formal" training was considered to be within the scope of the survey. This omits most of one of the more important kinds of training—on-the-job learning—because it is predominantly informal.

Since the information was obtained from workers themselves, the survey obviously does not reflect employers' views on training needs of the various kinds of workers they hire. Nor does the survey provide a basis for isolating the contribution of education to workers' occupational training from that of formal job training *per se*. As noted throughout the report, it actually discloses substantial areas of overlapping and identity between education and training.

Concepts and Method

The estimates presented here were obtained in a survey conducted in April 1963 by the Bureau of the Census as a supplement to its monthly sample survey of households, the Current Population Survey (CPS). The CPS 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. Approximately 35,000 households are interviewed each month. Another 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. There are also typically about 5,500 sample units each month which are visited but are found to be vacant or otherwise not to be enumerated.

The questionnaire used in the survey, a sample of which is appended hereto (p. 29), was developed by the Bureau of Labor Statistics, which also analyzed the tabulations and provided the basic

narrative used in the preparation of this monograph. Census enumerators left a questionnaire for each employed and unemployed worker aged 22 to 64 in the sample households, with the request that it be completed and mailed to the Census Bureau. About 73 percent of these workers did as requested and a subsample of the remainder was followed up by direct interview, with the information obtained thereby appropriately weighted to represent all who did not report by mail. The final reponse rate, including the followups, was quite high (about 82 percent). Altogether, the 28,000 persons included in the survey represented 60.8 million persons between the ages of 22 and 64 who were in the labor force—52.1 million with less than 3 years of college and 8.7 million with 3 or more years of college.

Limitations of the Data

The replies of workers reflect errors of response of unknown magnitude. Some persons who tried to complete the questionnaires did not fully understand the questions. Others had imprecise recollections of events that occurred years ago. Resources did not permit either verification of completed questionnaires or interviews to correct inconsistent answers.

The size of the sample and the cost of tabulations precluded some detailed cross-classifications (for example, age and education) that would have been advantageous. Therefore, some important relationships may have been missed in the analysis of the data.

The results, being based on a sample, are subject to sampling variability. Therefore, they must be interpreted as approximations rather than exact measures.

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 the difference between estimates based on the sample and an actual count of the entire population would be less than the standard error; they are about 95 out of 100 that it would be less than twice the standard error.

The figures presented in the following tables (tables I and II) are approximations of 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.

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 of more).

To illustrate use of the tables of standard errors, consider the estimate of 8,030,000 men aged 25 to 34 with less than 3 years of college. Table I shows that the standard error on 8,030,000 is approximately 142,000. The chances are about 68 out of 100 that a census would have shown a figure of between 7,888,000 and 8,172,000. The

Table I. Standard Errors of Estimated Number of Persons With Job Training

[In thousands]

Size of estimate	Standard error	Size of estimate	Standard error
10	6	2,500	82
25	8	5,000	115
50	12	10,000	160
100	17	20,000	210
250	26	30,000	240
500	37	40,000	260
1,000	52	50,000	290

chances are 95 out of 100 that a census would have shown a figure of more than 7,746,000 and less than 8,314,000. Of these 8,030,000 persons, the survey showed 46.6 percent had no training. By linear interpolation from table II, the standard error of 46.6 percent with a base of 8,030,000 is roughly 1 percent. Thus, the chances are about 68 out of 100 that a census would have shown this percentage to be not less than 45.6 and not more than 47.6 and about 95 out of 100 that a census would have shown not less than 44.6 and not more than 48.6 percent.

Table II. Standard Errors of Estimated Percentages of Persons With Job Training

Estimated percentage	Base of percentage (in thousands)								
	150	250	500	1,000	2,500	5,000	10,000	25,000	50,000
1 or 99	1.5	1.0	0.7	0.5	0.3	0.2	0.2	0.1	0.1
2 or 98	2.1	1.5	1.0	0.7	0.5	0.3	0.2	0.2	0.1
5 or 95	3.2	2.3	1.4	1.0	0.7	0.5	0.4	0.2	0.2
10 or 90	4.4	3.2	2.2	1.6	1.0	0.7	0.5	0.3	0.2
15 or 85	5.2	3.8	2.7	1.9	1.2	0.8	0.6	0.4	0.3
20 or 80	5.9	4.2	3.0	2.1	1.3	0.9	0.7	0.4	0.3
25 or 75	6.3	4.6	3.2	2.3	1.4	1.0	0.7	0.5	0.3
35 or 65	7.0	5.0	3.6	2.5	1.6	1.1	0.8	0.5	0.4
50	7.3	5.3	3.7	2.6	1.7	1.2	0.8	0.5	0.4

Budget Bureau No. 41-R1221.16; Approval Expires May 31, 1963

CONFIDENTIAL - This inquiry is authorized by Act of Congress (13 U.S.C.). The report you submit to the Census Bureau is confidential and may be seen only by sworn Census employees. It may not be used for purposes of taxation, investigation, or regulation.

FORM CPS-539 (3-21-63)	U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS	Control number	Line No.	Segment No.
SURVEY OF TRAINING OF WORKERS APRIL 1963				

Dear

We appreciate very much your cooperation in connection with our regular Current Population Survey program. The information which you provide us, along with that obtained from many thousands of other families, becomes the basis for the official Government estimates on employment and unemployment, estimates which are used widely by both industry and government for planning purposes.

In connection with these estimates, we are making special studies of employment and unemployment. This month we are making a study of vocational or job training and would like to know about such training which you may have received.

Would you please complete this form and mail it within three days in the enclosed envelope, which requires no postage. All information you provide is held in strict confidence and only statistical totals are published. Your cooperation is appreciated.

Sincerely yours,

Richard M. Scammon
Director
Bureau of the Census

SAMPLE QUESTIONNAIRE

1a. What is the HIGHEST grade (or year) of regular school you have ever attended? *(Check one box)*

0 Never attended school	0 ☐							
1 Elementary	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐
2 High School	1 ☐	2 ☐	3 ☐	4 ☐				
3 College	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6+ ☐		

b. Did you finish this grade? *(Check one box)*

1 ☐ Yes 2 ☐ No

INSTRUCTIONS: IF YOU FINISHED 3 YEARS OF COLLEGE OR MORE, SKIP TO QUESTION 11a ON THE BACK PAGE. ALL OTHERS CONTINUE WITH QUESTION 2 ON PAGE 2.

We want to find out about the vocational or job training you have had (for example, in vocational or business school or as an apprentice). **2. DID YOU EVER TAKE ANY VOCATIONAL OR JOB TRAINING OF THE FOLLOWING TYPES?** (Check "Yes" or "No" for EACH type of training listed below AND complete Questions 3 through 8 for EACH type of training marked "Yes." DO NOT count on-the-job training given informally by supervisors or other workers.)		3. What were you trained for? (Examples: Auto mechanic, electrician, secretary, practical nurse, etc.)
2a. A vocational program in high school? (Write in Column 3 your major field, for example, auto mechanics, merchandising, home economics, agriculture)	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2b)*	
2b. A business or commercial program in high school? (Write in Column 3 your major field, for example, stenographic or clerical)	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2c)*	
2c. A technical or professional program in a junior, community or teachers college?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2d)*	
2d. A program in a technical institute, such as electronics, draftsman, or designing?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2e)*	
2e. A training program in any other type of school? (For example, nursing, commercial art, or barber school)	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2f)*	
2f. Apprenticeship leading to journeyman status?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2g)*	
2g. A program at a company training school attended full time for 6 weeks or more?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2h)*	
2h. A vocational training program in the Armed Forces?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2i)*	
2i. Vocational or technical training from a correspondence school?	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Answer Question 2j)*	
2j. Any other vocational training not counting on-the-job training given informally by supervisors or other workers? What kind?_____	1 ☐ Yes *(Answer Questions 3-8)* → x ☐ No *(Skip to Question 9)*	

FORM CPS-539 (3-21-63)

Please answer Questions

4. How old were you when you started this training? Years	5. How long did you follow this program?	6. Did you finish the program?	7. Do you use this training on your present job (or last job if unemployed)?	8. Did you ever use it on any civilian job?
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2b)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2b)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2c)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2c)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2d)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2d)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2e)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2e)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2f)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2f)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2g)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2g)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2h)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2h)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2i)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2i)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 2j)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 2j)*
Age	1 ☐ Less than 6 months 2 ☐ 6-12 months 3 ☐ More than 12 months 4 ☐ Still taking it	1 ☐ Yes 2 ☐ No	1 ☐ Yes *(Skip to Question 9)* x ☐ No *(Answer Question 8)*	1 ☐ Yes, When did you last do that kind of work? 19____ (Year) 2 ☐ No *(Go to Question 9)*

9 and 10 on the next page

9a. Check ALL the ways in which you learned how to do your present job (or last one if unemployed).

1 ☐ Trade, business, technical, or other kind of school
2 ☐ Apprenticeship
3 ☐ Armed Forces
4 ☐ On the job from supervisor or someone else
5 ☐ Company training course
6 ☐ Worked way up by promotion
7 ☐ Learned from relative or friend
8 ☐ Just picked it up
9 ☐ Other *(Explain)*_____
10 ☐ No training needed

b. CIRCLE THE ONE KIND OF TRAINING WHICH WAS MOST HELPFUL, if more than one box is checked in the question above.

10a. Of all the kinds of work you have done, which do you think made the best use of your training and experience? *(Check one box)*

x ☐ The kind of work I'm doing now (or last job, if unemployed)
(If this box is checked, END OF QUESTIONNAIRE)

1 ☐ A kind of work different from what I'm doing now. It was - *(Describe)*_____

b. How did you learn that work? *(Check ALL the ways in which you learned to do that kind of work)*

1 ☐ Trade, business, technical, or other kind of school
2 ☐ Apprenticeship
3 ☐ Armed Forces
4 ☐ On the job from supervisor or someone else
5 ☐ Company training course
6 ☐ Worked way up by promotion
7 ☐ Learned from relative or friend
8 ☐ Just picked it up
9 ☐ Other *(Explain)*_____
10 ☐ No training needed

ANSWER THE FOLLOWING QUESTIONS ONLY IF YOU FINISHED AT LEAST 3 YEARS OF COLLEGE

11a. What was your major field of study in your last year in college or professional school? *(Check one box)*

1 ☐ Agriculture
2 ☐ Business
3 ☐ Education
4 ☐ Engineering
5 ☐ Biological Sciences (include Biochemistry, Nutrition)
6 ☐ Health Fields (include Pharmacy, Medical Technology)
7 ☐ Humanities (include Art, Drama, Languages, Music, Religion)
8 ☐ Physical Sciences
9 ☐ Social Sciences (include Political Science, Social Work)
10 ☐ Other *(Specify major field)*_____

b. Are you using this major or a related field of training on your present job (or last one if unemployed)? *(Check one box)*

1 ☐ Yes *(END OF QUESTIONS)*
2 ☐ No

12. How did you learn to do the work you are now doing (or last job if unemployed)? *(Check ALL of the ways in which you learned to do this work)*

1 ☐ Other college courses
2 ☐ Trade, vocational, or business school
3 ☐ Technical institute
4 ☐ Company training
5 ☐ Armed Forces
6 ☐ Learned on the job
7 ☐ Other *(Explain)*_____
8 ☐ No training required

Statistical Tables

Table 1. Extent of Formal Occupational Training of the Civilian Labor Force, by Education, Age, Color, Employment Status, and Sex, April 1963

[Percent distribution of persons 22 to 64 years old who completed less than 3 years of college]

Education, age, color, and employment status	Both sexes						Men						Women					
	Total		Had no previous training		Had previous training		Total		Had no previous training		Had previous training		Total		Had no previous training		Had previous training	
	Number (in thousands)	Percent	Total	Taking training	Total	Taking training	Number (in thousands)	Percent	Total	Taking training	Total	Taking training	Number (in thousands)	Percent	Total	Taking training	Total	Taking training
YEARS OF SCHOOL COMPLETED																		
All persons	52,085	100.0	54.8	1.1	45.2	1.5	34,154	100.0	55.7	1.2	44.2	1.9	17,931	100.0	52.8	0.8	47.1	0.8
Elementary school																		
8 years or less	16,890	100.0	83.9	.6	16.0	.2	12,023	100.0	81.5	.7	18.5	.2	4,867	100.0	90.0	.4	10.1	.3
Less than 5 years	2,654	100.0	93.2	.3	6.8	.2	1,906	100.0	92.7	.4	7.3	.2	686	100.0	94.8	.3	5.2	------
5 to 7 years	6,260	100.0	86.5	.6	13.5	.1	4,540	100.0	83.5	.7	16.5	.1	1,720	100.0	94.4	.3	5.5	.1
8 years	7,976	100.0	78.8	.7	21.2	.4	5,517	100.0	75.8	.8	24.2	.4	2,459	100.0	85.4	.4	14.5	.4
High school																		
1 to 3 years	12,170	100.0	53.8	1.2	46.3	1.1	8,069	100.0	51.7	1.4	48.3	1.3	4,101	100.0	58.0	.9	42.1	.5
4 years	18,112	100.0	34.8	1.3	65.2	2.5	10,873	100.0	37.3	1.6	62.8	3.5	7,239	100.0	31.1	.9	68.9	1.0
College																		
1 or 2 years	4,639	100.0	28.7	1.9	71.3	3.8	3,008	100.0	30.7	1.9	69.4	4.5	1,631	100.0	25.2	2.0	74.8	2.5
Not available	274	100.0	66.4	.7	33.6	1.5	181	100.0	63.5	------	36.5	2.2	93	(1)	(1)	(1)	(1)	(1)
Nonwhite persons	6,312	100.0	69.1	.8	31.0	1.0	3,761	100.0	68.8	.8	31.2	1.0	2,551	100.0	69.5	.8	30.5	.8
Elementary school																		
8 years or less	3,196	100.0	91.2	.4	8.8	.2	2,008	100.0	89.4	.5	10.6	.1	1,188	100.0	94.1	.2	5.9	.4
Less than 5 years	972	100.0	97.1	.2	2.9	.2	698	100.0	97.1	.3	2.9	.3	274	100.0	97.1	------	2.9	------
5 to 7 years	1,418	100.0	91.4	.4	8.5	------	843	100.0	88.8	.5	11.3	------	575	100.0	95.8	.3	4.5	------
8 years	806	100.0	83.5	.6	16.5	.6	467	100.0	79.2	1.1	20.8	------	339	100.0	89.4	------	10.6	1.5
High school																		
1 to 3 years	1,507	100.0	54.4	1.2	45.7	.9	857	100.0	53.4	1.0	46.5	1.0	650	100.0	55.6	1.4	44.4	.6
4 years	1,262	100.0	40.2	1.1	59.8	2.5	681	100.0	38.5	1.3	61.5	3.2	581	100.0	42.2	.9	57.8	1.7
College																		
1 or 2 years	291	100.0	29.9	1.7	70.1	2.7	179	100.0	28.5	.6	71.6	3.4	112	100.0	32.2	3.6	67.9	1.8
Not available	56	(1)	(1)	(1)	(1)	(1)	36	(1)	(1)	(1)	(1)	(1)	20	(1)	(1)	(1)	(1)	(1)
Unemployed persons	2,701	100.0	60.8	1.2	39.2	.7	1,658	100.0	61.3	1.3	38.7	.8	1,043	100.0	60.1	1.0	40.0	.6
Elementary school																		
8 years or less	1,130	100.0	85.9	.5	14.1	.2	776	100.0	84.0	.8	16.0	.3	354	100.0	90.1	------	9.9	------
Less than 5 years	178	100.0	97.2	------	2.8	------	124	100.0	96.0	------	4.0	------	54	(1)	(1)	(1)	(1)	(1)
5 to 7 years	448	100.0	92.2	.9	7.8	------	288	100.0	90.3	1.4	9.7	------	160	100.0	95.6	------	4.4	(1)
8 years	504	100.0	76.4	.4	23.6	.4	364	100.0	74.9	.5	24.9	.5	140	100.0	80.0	------	20.0	------
High school																		
1 to 3 years	737	100.0	54.9	1.4	45.2	1.4	464	100.0	52.3	1.7	47.7	.9	273	100.0	58.9	.7	41.0	2.2
4 years	631	100.0	32.5	1.0	67.5	.3	284	100.0	31.0	1.4	69.0	.7	347	100.0	33.7	.6	66.3	------
College																		
1 or 2 years	183	100.0	24.1	5.5	75.9	2.7	121	100.0	18.2	3.3	81.8	4.1	62	(1)	(1)	(1)	(1)	(1)
Not available	20	(1)	(1)	(1)	(1)	(1)	13	(1)	(1)	(1)	(1)	(1)	7	(1)	(1)	(1)	(1)	(1)
AGE																		
All persons	52,085	100.0	54.8	1.1	45.2	1.5	34,154	100.0	55.7	1.2	44.2	1.9	17,931	100.0	52.8	.8	47.1	.8
22 to 24 years	3,419	100.0	43.4	2.4	56.6	4.1	2,190	100.0	50.2	3.5	49.8	5.3	1,229	100.0	31.4	.5	68.6	1.9
25 to 34 years	11,692	100.0	48.1	1.7	51.9	2.8	8,030	100.0	48.6	2.0	51.4	3.6	3,662	100.0	47.0	1.0	53.0	.3
35 to 44 years	14,368	100.0	49.3	.8	50.7	1.4	9,310	100.0	48.8	.9	51.2	1.7	5,058	100.0	50.2	.8	49.8	.9
45 to 54 years	13,615	100.0	59.9	.7	40.1	.7	8,655	100.0	61.0	.8	40.0	.8	4,960	100.0	58.1	.6	41.9	.5
55 to 64 years	8,991	100.0	68.8	.8	31.2	.5	5,969	100.0	70.8	.6	29.2	.4	3,022	100.0	64.8	1.3	35.1	.6
Nonwhite persons	6,312	100.0	69.1	.8	31.0	1.0	3,761	100.0	68.8	.8	31.2	1.0	2,551	100.0	69.5	.8	30.5	.8
22 to 24 years	478	100.0	54.1	1.0	45.9	1.5	309	100.0	57.0	1.0	43.0	1.3	169	100.0	49.1	1.2	50.9	1.8
25 to 34 years	1,643	100.0	65.2	1.0	34.8	1.7	981	100.0	65.0	.8	34.9	2.1	662	100.0	65.4	1.4	34.6	1.1
35 to 44 years	1,773	100.0	62.8	.9	37.2	.5	1,031	100.0	60.6	1.0	39.5	.3	742	100.0	65.9	.8	34.1	.8
45 to 54 years	1,522	100.0	75.3	.7	24.8	1.1	880	100.0	74.5	.9	25.4	1.2	642	100.0	76.4	.5	23.7	.8
55 to 64 years	896	100.0	86.0	.1	14.0	------	560	100.0	88.1	.2	12.0	------	336	100.0	82.7	------	17.3	------
Unemployed persons	2,701	100.0	60.8	1.2	39.2	.7	1,658	100.0	61.3	1.3	38.7	.8	1,043	100.0	60.1	1.0	40.0	.6
22 to 24 years	271	100.0	39.5	2.2	60.5	1.5	174	100.0	45.4	2.3	54.6	2.3	97	(1)	(1)	(1)	(1)	(1)
25 to 34 years	706	100.0	57.4	2.3	42.7	1.3	476	100.0	56.7	2.9	43.3	1.5	230	100.0	58.7	.9	41.3	.9
35 to 44 years	661	100.0	57.2	1.2	42.8	.9	349	100.0	55.6	.6	44.4	.6	312	100.0	59.0	1.9	41.0	1.3
45 to 54 years	645	100.0	68.2	.3	31.8	------	379	100.0	66.2	.5	33.8	------	266	100.0	71.1	------	28.9	------
55 to 64 years	418	100.0	74.6	------	25.4	------	280	100.0	79.3	------	20.7	------	138	100.0	65.2	------	34.8	------
Unemployed nonwhites	564	100.0	70.3	.4	29.8	------	340	100.0	65.0	------	35.0	------	224	100.0	78.1	.9	21.9	------

[1] Percent not shown where base is less than 100,000.

Table 9. Number of Skills Learned by Trained Members[1] of the Civilian Labor Force, by Education, Age, Color, Employment Status, and Sex, April 1963

[Percent distribution of persons 22 to 64 years old who completed less than 3 years of college and who had formal occupational training]

Education, age, color, and employment status	Both sexes					Men					Women				
	Total with training		1 skill	2 skills	3 or more skills	Total with training		1 skill	2 skills	3 or more skills	Total with training		1 skill	2 skills	3 or more skills
	Number (in thousands)	Percent				Number (in thousands)	Percent				Number (in thousands)	Percent			
YEARS OF SCHOOL COMPLETED															
All persons [2]	23,555	100.0	71.1	21.9	7.0	15,108	100.0	66.8	24.1	9.1	8,447	100.0	78.6	18.0	3.3
Elementary school															
8 years or less	2,717	100.0	85.0	12.8	2.2	2,229	100.0	82.8	14.5	2.6	488	100.0	94.9	4.7	.4
Less than 5 years	180	100.0	83.1	16.9	-----	144	100.0	78.9	21.1	-----	36	100.0	98.5	1.5	-----
5 to 7 years	846	100.0	88.7	9.6	1.8	751	100.0	87.5	10.5	2.0	95	100.0	93.6	5.9	.6
8 years	1,691	100.0	83.3	14.0	2.7	1,334	100.0	80.6	16.1	3.3	357	100.0	93.6	5.9	.6
High school															
1 to 3 years	5,625	100.0	74.5	20.3	5.1	3,899	100.0	71.9	21.7	6.4	1,726	100.0	80.6	17.2	2.3
4 years	11,814	100.0	69.4	22.9	7.7	6,827	100.0	62.6	26.5	10.9	4,987	100.0	78.7	17.9	3.3
College															
1 or 2 years	3,307	100.0	59.2	28.9	11.9	2,087	100.0	53.4	31.3	15.2	1,220	100.0	69.0	24.8	6.1
Nonwhite persons [2]	1,952	100.0	77.2	17.9	4.9	1,174	100.0	73.8	19.3	6.8	778	100.0	82.3	15.8	1.9
Elementary school															
8 years or less	282	100.0	92.6	3.9	3.5	212	100.0	90.0	5.2	4.7	70	(3)	(3)	(3)	(3)
Less than 5 years	28	(3)	(3)	(3)	(3)	20	(3)	(3)	(3)	(3)	8	(3)	(3)	(3)	(3)
5 to 7 years	121	100.0	97.5	2.5	-----	95	(3)	(3)	(3)	(3)	26	(3)	(3)	(3)	(3)
8 years	133	100.0	88.0	4.5	7.5	97	(3)	(3)	(3)	(3)	36	(3)	(3)	(3)	(3)
High school															
1 to 3 years	688	100.0	81.5	16.3	2.2	399	100.0	78.8	18.5	2.8	289	100.0	85.4	13.2	1.4
4 years	755	100.0	71.7	22.6	5.7	419	100.0	65.4	26.0	8.6	336	100.0	79.5	18.4	2.1
College															
1 or 2 years	204	100.0	60.5	26.3	13.2	128	100.0	56.2	25.8	18.0	76	(3)	(3)	(3)	(3)
AGE															
All persons	23,555	100.0	71.1	21.9	7.0	15,108	100.0	66.8	24.1	9.1	8,447	100.0	78.6	18.0	3.3
22 to 24 years	1,934	100.0	72.0	23.3	4.7	1,091	100.0	72.0	22.5	5.5	843	100.0	72.1	24.3	3.6
25 to 34 years	6,070	100.0	68.6	24.2	7.2	4,129	100.0	63.9	27.3	8.8	1,941	100.0	78.6	17.7	3.8
35 to 44 years	7,286	100.0	68.1	22.5	9.4	4,766	100.0	63.9	24.0	12.1	2,520	100.0	76.0	19.7	4.4
45 to 54 years	5,461	100.0	73.4	21.0	5.7	3,381	100.0	68.0	24.2	7.8	2,080	100.0	82.0	15.8	2.2
55 to 64 years	2,804	100.0	79.0	16.4	4.6	1,741	100.0	76.1	17.8	6.1	1,063	100.0	83.6	14.1	2.3
Unemployed persons	1,059	100.0	76.8	19.1	4.1	642	100.0	74.8	20.2	5.0	417	100.0	79.7	17.4	2.9
22 to 24 years	164	100.0	72.6	26.2	1.2	95	(3)	(3)	(3)	(3)	69	(3)	(3)	(3)	(3)
25 to 34 years	301	100.0	74.2	23.5	2.3	206	100.0	75.8	21.7	2.4	95	(3)	(3)	(3)	(3)
35 to 44 years	283	100.0	75.4	20.4	4.2	155	100.0	73.2	20.4	6.4	128	100.0	78.0	20.5	1.6
45 to 54 years	205	100.0	80.2	11.6	8.2	128	100.0	75.6	15.7	8.7	77	(3)	(3)	(3)	(3)
55 to 64 years	106	100.0	87.7	6.6	5.7	58	(3)	(3)	(3)	(3)	48	(3)	(3)	(3)	(3)

[1] Excludes persons still taking training who had no other training.
[2] Includes some persons who did not report educational attainment.
[3] Percent not shown where base is less than 100,000.

Table 3. Unemployment Rates [1] of the Civilian Labor Force, by Training Status, Number of Skills Learned, Age, Sex, and Color, April 1963

[Persons 22 to 64 years old who completed less than 3 years of college]

Age, sex, and, color	Total civilian labor force	Had no previous training			Had previous training			Had training [2] in:		
		Total	Not taking training	Taking training	Total	Not taking training	Taking training	1 skill	2 skills	3 or more skills
ALL PERSONS										
Both sexes										
22 to 64 years	5.2	5.8	5.8	5.6	4.5	4.6	2.4	4.9	3.9	2.7
22 to 24 years	7.9	7.2	7.2	(3)	8.5	8.9	2.9	8.5	9.5	(3)
25 to 34 years	6.0	7.2	7.2	8.2	5.0	5.1	2.8	5.4	4.8	1.6
35 to 44 years	4.6	5.3	5.3	6.7	3.9	3.9	3.0	4.3	3.5	1.7
45 to 54 years	4.7	5.4	5.4	(3)	3.8	3.8	(3)	4.1	2.1	5.5
55 to 64 years	4.6	5.0	5.1	(3)	3.8	3.8	(3)	4.2	1.5	4.6
Men										
22 to 64 years	4.9	5.3	5.3	5.3	4.2	4.4	2.0	4.8	3.6	2.3
22 to 24 years	7.9	7.2	7.3	(3)	8.7	9.3	3.4	7.9	12.6	(3)
25 to 34 years	5.9	6.9	6.8	8.8	5.0	5.2	2.4	6.0	4.0	1.4
35 to 44 years	3.7	4.3	4.3	(3)	3.3	3.3	1.3	3.8	2.8	1.7
45 to 54 years	4.4	4.8	4.8	(3)	3.8	3.9	(3)	4.2	2.4	4.2
55 to 64 years	4.7	5.2	5.3	(3)	3.3	3.4	(3)	3.9	.6	3.8
Women										
22 to 64 years	5.8	6.6	6.6	6.6	4.9	5.0	4.1	5.0	4.8	4.2
22 to 24 years	7.9	7.3	6.8	(3)	8.2	8.4	(3)	9.4	5.9	(3)
25 to 34 years	6.3	7.8	7.9	(3)	4.9	4.9	(3)	4.4	7.6	(3)
35 to 44 years	6.2	7.2	7.1	(3)	5.1	5.0	(3)	5.2	5.2	1.8
45 to 54 years	5.4	6.6	6.6	(3)	3.7	3.8	(3)	4.1	1.2	(3)
55 to 64 years	4.6	4.6	4.7	(3)	4.5	4.6	(3)	4.6	3.3	(3)
NONWHITE PERSONS										
Both sexes, 22 to 64 years	8.9	9.1	9.1	(3)	8.6	8.6	(3)	(4)	(4)	(4)
Men	9.0	8.5	8.5	(3)	10.1	10.1	(3)	(4)	(4)	(4)
Women	8.8	9.9	9.9	(3)	6.3	6.3	(3)	(4)	(4)	(4)

[1] Percent of civilian labor force in category who were unemployed.
[2] Excludes persons still taking training who had no previous training.
[3] Percent not shown where base is less than 100,000.
[4] Not available.

Table 4. Occupation or Field Studied in Training Programs, by Type of Institution Where Taken and Sex, April 1963

[Percent distribution of training programs reported by civilian workers 22 to 64 years old who completed less than 3 years of college]

Occupation or field studied and sex	All training programs taken				Earlier programs,[1] by type of institution where taken										
	Total		Still being taken	Taken earlier	Total		High school	Junior college	Technical institute	Special school	Apprenticeship	Company school	Armed Forces	Correspondence school	Other
	Number (in thousands)	Percent			Number (in thousands)	Percent									
Both sexes	36,812	100.0	4.0	96.0	35,328	100.0	37.7	4.5	6.0	19.4	8.2	6.6	11.4	6.0	.1
Men	25,313	100.0	4.6	95.4	24,143	100.0	29.5	3.8	8.2	15.4	11.7	7.5	16.2	7.7	.1
Women	11,499	100.0	2.7	97.3	11,185	100.0	55.4	6.0	1.3	28.0	.8	4.9	1.2	2.4	(2)
OCCUPATION															
Professional, technical, and kindred															
Accountants and auditors	521	100.0	9.2	90.8	473	100.0	23.1	16.4	4.0	28.1	-------	2.3	1.0	25.2	-------
Artists and art teachers	324	100.0	10.2	89.8	291	100.0	13.4	3.1	1.7	59.9	1.7	-------	-------	20.2	-------
Draftsmen	869	100.0	3.5	96.5	839	100.0	28.8	2.0	45.7	3.2	3.0	4.6	2.9	9.8	-------
Engineers	548	100.0	3.5	96.5	529	100.0	4.3	20.6	24.2	8.3	.9	5.3	9.6	26.7	-------
Nurses, professional	514	100.0	4.9	95.1	489	100.0	2.4	2.0	-------	93.3	-------	1.0	.8	.4	-------
Teachers, except college	397	100.0	7.6	92.4	367	100.0	8.5	77.6	-------	5.5	-------	1.9	6.0	.5	-------
Men	117	100.0	6.0	94.0	110	100.0	2.8	64.8	-------	9.3	-------	4.6	18.5	-------	-------
Women	280	100.0	8.2	91.8	257	100.0	10.9	82.9	-------	3.9	-------	.8	.8	.8	-------
Technicians, medical and dental	188	100.0	2.1	97.9	184	100.0	-------	7.1	7.1	39.1	1.1	2.2	43.5	-------	-------
Technicians, electrical and electronic and other engineering and physical sciences	1,147	100.0	12.9	87.1	999	100.0	2.1	4.4	34.0	5.9	1.1	10.0	24.5	17.5	.5

See footnotes at end of table.

Table 4. Occupation or Field Studied in Training Programs, by Type of Institution Where Taken and Sex, April 1963—Continued

Occupation or field studied and sex	All training programs taken				Earlier programs,[1] by type of institution where taken										
	Total		Still being taken	Taken earlier	Total		High school	Junior college	Technical institute	Special school	Apprenticeship	Company school	Armed Forces	Correspondence school	Other
	Number (in thousands)	Percent			Number (in thousands)	Percent									
Occupation—Continued															
Clerical															
Bookkeepers	707	100.0	.3	99.7	705	100.0	80.7	2.4	.3	10.9	-------	1.8	.4	3.4	-------
Men	366	100.0	-------	100.0	366	100.0	86.4	1.9	.5	7.6	-------	-------	.8	2.7	-------
Women	341	100.0	.6	99.4	339	100.0	74.7	2.9	-------	14.4	-------	3.8	-------	4.1	-------
Office machine operators	469	100.0	5.1	94.9	445	100.0	4.7	2.0	4.7	58.8	-------	18.2	7.9	3.6	-------
Men	174	100.0	6.9	93.1	162	100.0	2.5	2.5	5.5	40.5	-------	21.5	20.9	6.7	-------
Women	295	100.0	4.1	95.9	283	100.0	6.0	1.8	4.3	69.4	-------	16.4	.4	1.8	-------
Secretaries	1,442	100.0	1.0	99.0	1,428	100.0	62.2	6.2	.5	28.9	-------	.4	-------	1.8	-------
Stenographers	1,295	100.0	.8	99.2	1,285	100.0	88.4	2.2	.5	6.9	-------	.2	.8	.6	.5
Men	154	100.0	1.9	98.1	151	100.0	80.1	3.3	-------	6.0	-------	-------	3.3	3.3	4.0
Women	1,141	100.0	.6	99.4	1,134	100.0	89.5	2.0	.5	7.0	-------	.2	.4	.3	-------
Typists	590	100.0	-------	100.0	590	100.0	71.7	1.0	.3	14.2	-------	1.7	10.7	.3	-------
Men	261	100.0	-------	100.0	261	100.0	69.5	.8	-------	8.4	-------	.8	19.8	.8	-------
Women	329	100.0	-------	100.0	329	100.0	73.5	1.2	.6	18.9	-------	2.4	3.4	-------	-------
Telephone operators	145	100.0	2.8	97.2	141	100.0	1.4	-------	-------	21.8	-------	61.3	13.4	2 1	-------
Sales															
Insurance agents, brokers, and underwriters	141	100.0	14.2	85.8	121	100.0	8.3	3.3	4.1	19.0	-------	55.4	-------	9.9	-------
Craftsmen, foremen, and kindred															
Bakers	311	100.0	1.9	98.1	305	100.0	5.0	-------	1.6	15.8	8.6	4.0	63.7	1.3	-------
Compositors and typesetters	183	100.0	6.6	93.4	171.	100.0	46.8	2.9	1.7	15.8	30.6	1.2	-------	1.2	-------
Construction craftsmen	2,850	100.0	5.0	95.0	2,708	100.0	18.2	.8	6.3	11.5	43.9	1.4	11.0	3.9	.1
Brickmasons, stonemasons, and tile setters	217	100.0	1.4	98.6	214	100.0	25.7	-------	3.7	11.2	49.6	1.4	6.5	.9	.9
Carpenters	548	100.0	3.8	96.2	527.	100.0	23.1	-------	.9	9.3	56.4	1.3	6.1	2.8	-------
Electricians	1,035	100.0	6.5	93.5	968	100.0	22.6	2.2	13.0	10.5	24.3	4.6	16.8	6.0	-------
Painters	167	100.0	6.6	93.4	156	100.0	10.3	-------	4.5	7.1	69.7	7.1	1.3	-------	-------
Plumbers and pipefitters	349	100.0	4.0	96.0	335	100.0	5.4	-------	1.5	14.6	65.4	3.6	4.8	4.8	-------
Tinsmiths, coppersmiths, and sheet-metal workers	332	100.0	6.3	93.7	311	100.0	16.7	.6	6.1	17.0	29.5	9.6	16.7	3.8	-------
Other construction craftsmen	202	100.0	2.5	97.5	197	100.0	5.6	-------	-------	11.7	66.5	5.6	9.6	1.0	-------
Linemen and servicemen, telegraph, telephone, and power	286	100.0	9.1	90.9	260	100.0	-------	-------	-------	7.8	36.8	25.6	28.3	1.6	-------
Machinists	763	100.0	4.1	95.9	732	100.0	21.2	2.3	5.9	14.4	34.9	6.7	10.7	3.8	-------
Mechanics and repairmen	4,370	100.0	4.0	95.9	4,193	100.0	20.5	.7	10.8	14.3	6.6	6.0	29.6	11.5	(2)
Airplane	794	100.0	2.1	97.9	777	100.0	10.7	.9	7.2	8.1	2.8	6.8	60.9	2.6	-------
Auto	1,785	100.0	3.2	96.8	1,727	100.0	41.6	.6	4.4	16.0	6.3	3.4	21.6	6.1	-------
Radio and television	744	100.0	5.1	94.9	706	100.0	3.0	.7	27.1	10.6	1.7	2.0	25.4	29.6	-------
All other	1,047	100.0	6.1	93.9	983.	100.0	3.8	.7	13.1	18.7	13.7	12.8	21.8	15.1	.2
Operatives and kindred															
Meatcutters, except slaughter and packing house	139	100.0	5.0	95.0	132	100.0	2.3	-------	1.5	12.9	56.1	8.3	14.4	4.5	-------
Welders and flame-cutters	652	100.0	2.3	97.7	637	100.0	9.9	3.9	7.2	38.1	5.5	17.3	14.1	3.9	-------
Service															
Barbers	302	100.0	5.0	95.0	287	100.0	2.1	-------	-------	71.5	24.3	-------	1.4	.7	-------
Hairdressers and cosmetologists	612	100.0	5.2	94.8	580	100.0	5.0	.7	2.7	87.6	3.1	.5	-------	.3	-------
Practical nurses	448	100.0	1.6	98.4	441	100.0	8.8	3.4	-------	78.7	-------	1.8	1.1	6.1	-------
Occupation not elsewhere classified															
All other occupations	5,186	100.0	6.3	93.7	4,859	100.0	9.5	4.4	4.7	23.2	13.3	15.1	21.0	8.5	.2
Men	4,387	100.0	6.0	94.0	4,126	100.0	10.1	4.0	4.8	19.8	15.1	13.6	23.7	8.8	.2
Women	799	100.0	8.2	91.8	733	100.0	5.8	6.5	4.5	42.5	3.5	23.8	6.4	6.9	-------
Field[3]															
Agriculture	1,368	100.0	1.8	98.2	1,343	100.0	86.3	2.3	.1	7.9	-------	.2	1.7	1.3	.1
Business or commercial	5,678	100.0	1.4	98.6	5,598	100.0	73.1	5.3	.5	14.1	-------	1.5	3.6	1.8	(2)
Men	2,573	100.0	1.5	98.5	2,534	100.0	68.7	5.6	.8	13.3	-------	1.7	7.7	2.2	-------
Women	3,105	100.0	1.3	98.7	3,064	100.0	76.8	5.0	.3	14.7	-------	1.3	.3	1.4	.1
Dressmaking, sewing, and dress designing	256	100.0	9.0	91.0	233	100.0	42.9	3.0	13.4	28.6	6.9	.9	-------	4.3	-------
General trades	1,164	100.0	1.6	98.4	1,145	100.0	77.7	2.0	3.1	6.0	-------	3.9	4.7	2.5	-------
Home economics or homemaking	1,130	100.0	.9	99.1	1,120	100.0	99.2	.4	-------	.4	-------	-------	-------	-------	-------
Merchandising (including sales, distributive)	281	100.0	7.8	92.2	259	100.0	43.6	4.3	1.9	14.4	-------	24.5	.8	10.5	-------
Supervisors, foremen, and personnel management	264	100.0	7.2	92.8	245	100.0	-------	1.6	2.0	16.9	-------	60.9	9.7	7.3	1.6
All other fields	311	100.0	6.1	93.9	292	100.0	6.1	24.9	17.8	17.4	-------	16.0	4.4	13.3	-------
Occupation or field not available	961	100.0	6.1	93.9	902	100.0	12.4	10.4	7.3	18.2	11.1	14.1	14.0	12.2	.2

[1] Separate data shown only for occupations or fields in which at least 100,000 persons took training; excludes programs still being taken.

[2] Less than 0.05 percent.

[3] Includes programs which could not be identified with a particular occupation.

Table 5. Duration and Completion of Training Programs,[1] by Occupation or Field Studied and Sex, April 1963

[Percent distribution of programs taken by civilian workers 22 to 64 years old who completed less than 3 years of college]

Occupation or field studied and sex	Duration of training					Completion of training			
	Total	Less than 6 months	6 to 12 months	More than 12 months	Not available	Total	Completed	Did not complete	Not available
Both sexes	100.0	18.8	27.7	51.5	2.0	100.0	78.2	20.1	1.7
Men	100.0	20.1	27.2	50.6	2.1	100.0	77.3	21.0	1.7
Women	100.0	15.9	28.7	53.4	1.9	100.0	80.2	18.1	1.7
OCCUPATION									
Professional, technical, and kindred									
Accountants and auditors	100.0	11.8	28.1	57.7	2.3	100.0	60.0	39.1	.8
Artists and art teachers	100.0	13.1	28.9	55.3	2.7	100.0	50.2	47.8	2.1
Draftsmen	100.0	17.4	29.0	52.7	1.0	100.0	67.5	31.5	1.1
Engineers	100.0	12.3	28.0	58.2	1.5	100.0	51.4	46.9	1.7
Nurses, professional	100.0	2.7	7.8	89.2	.4	100.0	78.7	20.9	.4
Teachers, except college	100.0	15.0	24.2	57.8	3.0	100.0	64.3	34.6	1.1
Men	100.0	14.5	25.5	58.2	1.8	100.0	65.5	32.7	1.8
Women	100.0	15.2	23.7	57.6	3.5	100.0	63.8	35.4	.8
Technicians, medical and dental	100.0	23.4	27.2	45.1	4.3	100.0	89.1	10.9	----
Technicians, electrical and electronic and other engineering and physical sciences	100.0	22.3	34.3	42.6	.7	100.0	74.3	25.0	.7
Clerical									
Bookkeepers	100.0	9.1	36.0	53.0	1.8	100.0	75.6	22.4	2.0
Men	100.0	5.2	35.2	57.4	2.2	100.0	75.7	21.3	3.0
Women	100.0	13.3	36.9	48.4	1.5	100.0	75.5	23.6	.9
Office machine operators	100.0	64.0	24.7	10.3	.9	100.0	95.3	3.8	.9
Men	100.0	58.6	24.7	15.4	1.2	100.0	98.8	----	1.2
Women	100.0	67.1	24.7	7.4	.7	100.0	93.3	6.0	.7
Secretaries	100.0	10.2	32.8	55.8	1.2	100.0	85.0	14.5	.5
Stenographers	100.0	5.5	23.3	70.0	1.1	100.0	85.3	13.2	.9
Men	100.0	7.9	14.6	76.2	1.3	100.0	80.8	17.9	1.3
Women	100.0	5.2	24.5	69.2	1.1	100.0	86.5	12.6	.9
Typists	100.0	27.6	41.2	30.8	.3	100.0	72.5	25.9	1.5
Men	100.0	24.1	50.6	25.3	----	100.0	81.6	17.6	.8
Women	100.0	30.4	33.7	35.3	.6	100.0	65.3	32.5	2.1
Telephone operators	100.0	78.7	8.5	12.8	----	100.0	92.2	5.7	2.1
Sales									
Insurance agents, brokers, and underwriters	100.0	53.7	28.9	15.7	1.7	100.0	95.0	1.7	3.3
Craftsmen, foremen, and kindred									
Bakers	100.0	33.8	22.0	39.0	5.2	100.0	88.9	7.5	3.6
Compositors and typesetters	100.0	10.5	11.7	75.4	2.3	100.0	82.5	15.2	2.3
Construction craftsmen	100.0	13.1	21.3	63.6	2.0	100.0	76.4	22.6	1.1
Brickmasons, stonemasons, and tile setters	100.0	9.3	28.0	60.3	2.3	100.0	74.8	24.3	.9
Carpenters	100.0	6.5	22.8	68.9	1.9	100.0	75.5	23.1	1.3
Electricians	100.0	14.2	23.6	60.6	1.7	100.0	75.4	24.2	.4
Painters	100.0	11.5	7.7	80.8	----	100.0	80.1	16.0	3.8
Plumbers and pipefitters	100.0	4.5	18.5	74.9	2.1	100.0	76.4	23.0	.6
Tinsmiths, coppersmiths, and sheetmetal workers	100.0	32.5	18.6	46.6	2.2	100.0	74.6	24.1	1.3
Other construction craftsmen	100.0	15.2	18.8	61.4	4.6	100.0	84.8	13.2	2.0
Linemen and servicemen, telegraph, telephone, and power	100.0	33.1	15.0	50.0	1.9	100.0	88.8	9.2	1.9
Machinists	100.0	16.1	19.4	61.7	2.7	100.0	81.4	16.3	2.3
Mechanics and repairmen	100.0	26.8	30.8	40.8	1.6	100.0	77.7	21.0	1.3
Airplane	100.0	27.5	34.5	36.0	1.9	100.0	88.8	10.6	.6
Auto	100.0	24.0	29.5	44.7	1.7	100.0	72.8	25.5	1.7
Radio and television	100.0	21.7	34.4	43.3	.6	100.0	72.8	25.9	1.3
All other	100.0	34.6	27.6	36.0	1.8	100.0	81.1	17.6	1.3
Operatives and kindred									
Meatcutters, except slaughter and packing house	100.0	13.6	12.9	73.5	----	100.0	86.4	13.6	----
Welders and flame-cutters	100.0	47.7	34.1	15.7	2.5	100.0	81.0	15.2	3.8
Service									
Barbers	100.0	13.2	48.4	35.5	2.8	100.0	88.8	9.8	1.4
Hairdressers and cosmetologists	100.0	6.6	61.2	29.8	2.4	100.0	90.9	7.2	1.9
Practical nurses	100.0	22.7	33.6	42.4	1.4	100.0	74.6	23.8	1.6
Occupation not elsewhere classified									
All other occupations	100.0	30.2	24.5	42.9	2.4	100.0	82.9	15.1	2.1
Men	100.0	27.1	24.9	45.6	2.3	100.0	83.0	15.0	1.9
Women	100.0	47.1	22.3	28.0	2.6	100.0	81.9	15.2	2.9
FIELD[2]									
Agriculture	100.0	3.9	17.9	76.8	1.3	100.0	82.0	16.9	1.1
Business or commercial	100.0	9.5	27.7	60.9	1.9	100.0	76.5	21.9	1.6
Men	100.0	11.8	27.5	59.0	1.7	100.0	74.2	24.4	1.3
Women	100.0	7.7	27.9	62.4	2.0	100.0	78.4	19.7	1.9
Dressmaking, sewing, and dress designing	100.0	12.4	21.5	66.1	----	100.0	67.4	30.6	2.6
General trades	100.0	10.4	29.6	59.4	.6	100.0	75.5	23.7	.9
Home economics or homemaking	100.0	4.4	34.5	59.7	1.4	100.0	79.2	19.6	1.2
Merchandising (including sales, distributive)	100.0	25.5	35.9	36.3	2.3	100.0	90.0	9.3	.8
Supervisors, foremen, and personnel management	100.0	51.4	23.7	24.9	----	100.0	91.8	8.2	----
All other fields	100.0	37.3	29.8	30.5	2.4	100.0	63.7	34.6	1.7
Occupation or field not available	100.0	25.8	23.9	36.7	13.5	100.0	67.5	22.0	10.5

[1] Excludes programs still being taken.

[2] Includes programs which could not be identified with a particular occupation.

Table 6. Institutional Sources of Training Programs, by Recency and Completion of Training and Sex, April 1963

[Percent distribution of training programs taken by civilian workers 22 to 64 years old who completed less than 3 years of college]

Type of institution and sex	All programs				Programs taken previously			
	Total		Still being taken	Taken previously	Total	Completed	Not completed	Not available
	Number (in thousands)	Percent						
BOTH SEXES								
Total programs	36,812	100.0	4.0	96.0	100.0	78.2	20.1	1.7
High school	13,486	100.0	1.2	98.8	100.0	78.8	19.7	1.5
Junior or teachers college	1,695	100.0	5.7	94.3	100.0	56.3	41.5	2.2
Technical institute	2,233	100.0	4.6	95.4	100.0	71.4	26.7	1.9
Special school	7,178	100.0	4.7	95.3	100.0	77.5	21.1	1.4
Apprenticeship	3,181	100.0	7.8	92.2	100.0	82.7	15.3	2.0
Company training school	2,502	100.0	7.5	92.5	100.0	92.4	5.5	2.1
Armed Forces	4,071	100.0	1.1	98.9	100.0	90.7	7.3	2.0
Correspondence school	2,433	100.0	12.9	87.1	100.0	55.0	43.8	1.2
Other	33	(1)			(1)			
MEN								
Total programs	25,313	100.0	4.6	95.4	100.0	77.3	21.0	1.7
High school	7,222	100.0	1.4	98.6	100.0	76.6	21.8	1.5
Junior or teachers college	963	100.0	3.5	96.5	100.0	51.9	46.1	2.0
Technical institute	2,093	100.0	4.8	95.2	100.0	71.0	27.3	1.7
Special school	3,922	100.0	5.4	94.6	100.0	75.1	23.7	1.3
Apprenticeship	3,087	100.0	7.9	92.1	100.0	82.9	15.2	1.9
Company training school	1,931	100.0	8.3	91.7	100.0	91.6	6.1	2.3
Armed Forces	3,937	100.0	.9	99.1	100.0	90.7	7.4	2.0
Correspondence school	2,128	100.0	13.3	86.7	100.0	53.6	45.2	1.2
Other	30	(1)			(1)			
WOMEN								
Total programs	11,499	100.0	2.7	97.3	100.0	80.2	18.1	1.7
High school	6,264	100.0	.9	99.1	100.0	81.3	17.2	1.5
Junior or teachers college	732	100.0	8.5	91.5	100.0	62.5	35.1	2.4
Technical institute	140	100.0	1.4	98.6	100.0	76.8	18.8	4.3
Special school	3,256	100.0	3.8	96.2	100.0	80.4	18.0	1.6
Apprenticeship	94	(1)			(1)			
Company training school	571	100.0	4.7	95.3	100.0	95.0	3.5	1.5
Armed Forces	134	100.0	6.0	94.0	100.0	91.3	7.1	1.6
Correspondence school	305	100.0	10.8	89.2	100.0	64.7	33.8	1.5
Other	3	(1)			(1)			

[1] Percent not shown where base is less than 100,000.

Table 7. Recency and Completion of Training Programs, by Age, Sex, and Color, April 1963

[Percent distribution of training programs taken by civilian workers 22 to 64 years old who completed less than 3 years of college]

Age, sex, and color	All programs				Programs taken previously			
	Total		Still being taken	Taken previously	Total	Completed	Not completed	Not available
	Number (in thousands)	Percent						
ALL PERSONS								
Both Sexes								
22 to 64 years	36,812	100.0	4.0	96.0	100.0	78.2	20.1	1.7
22 to 34 years	12,862	100.0	6.4	93.6	100.0	77.5	21.4	1.1
35 to 44 years	11,889	100.0	2.8	97.2	100.0	78.7	19.5	1.9
45 to 54 years	8,138	100.0	2.5	97.5	100.0	78.2	19.8	2.0
55 to 64 years	3,923	100.0	3.2	96.8	100.0	79.2	18.4	2.4
Men								
22 to 64 years	25,313	100.0	4.6	95.4	100.0	77.3	21.0	1.7
22 to 34 years	9,003	100.0	7.9	92.1	100.0	75.9	22.9	1.1
35 to 44 years	8,349	100.0	3.0	97.0	100.0	78.4	19.9	1.7
45 to 54 years	5,416	100.0	2.7	97.3	100.0	77.3	20.7	2.0
55 to 64 years	2,545	100.0	2.5	97.5	100.0	78.3	18.9	2.8
Women								
22 to 64 years	11,499	100.0	2.7	97.3	100.0	80.2	18.1	1.7
22 to 34 years	3,859	100.0	2.7	97.3	100.0	81.0	18.1	.9
35 to 44 years	3,540	100.0	2.5	97.5	100.0	79.1	18.6	2.3
45 to 54 years	2,722	100.0	2.1	97.9	100.0	80.0	18.1	1.9
55 to 64 years	1,378	100.0	4.6	95.4	100.0	80.9	17.3	1.8
NONWHITE PERSONS								
Both sexes, 22 to 64 years	2,803	100.0	4.2	95.8	100.0	67.6	30.6	1.9
Men	1,789	100.0	4.3	95.7	100.0	67.3	31.6	1.1
Women	1,014	100.0	4.0	96.0	100.0	67.9	28.8	3.3

Table 8. Use of Training Programs on the Job, by Time of Use, Occupation or Field Studied,[1] and Sex, April 1963

[Percent distribution of training programs taken by civilian workers 22 to 64 years old who completed less than 3 years of college]

Occupation or field studied and sex	Programs taken		Used on current job (last job if unemployed)	Used on prior job only	Never used	Use not available
	Number (in thousands)	Percent				
MEN						
Total	24,143	100.0	48.9	24.5	25.8	.7
Occupation						
Accountants and auditors	386	100.0	66.3	16.3	17.3	----
Artists and art teachers	233	100.0	29.9	19.2	48.3	2.6
Draftsmen	811	100.0	50.6	18.2	30.2	1.0
Engineers	525	100.0	58.3	16.8	23.6	1.3
Teachers, except college	110	100.0	18.3	42.2	37.6	1.8
Technicians, medical and dental	116	100.0	23.9	33.3	42.7	----
Technicians, electrical and electronic and other engineering and physical sciences	975	100.0	58.2	13.8	27.8	.2
Bookkeepers	366	100.0	44.5	22.4	33.1	----
Office machine operators	162	100.0	46.0	23.6	30.4	----
Secretaries and stenographers	226	100.0	34.1	34.1	30.1	1.7
Typists	261	100.0	26.0	24.8	49.2	----
Bakers	287	100.0	22.1	40.4	37.5	----
Compositors and typesetters	165	100.0	57.0	25.5	17.6	----
Construction craftsmen	2,637	100.0	59.6	24.6	14.8	1.0
Brickmasons, stonemasons, and tile setters	208	100.0	46.4	21.1	31.6	1.0
Carpenters	521	100.0	53.4	26.9	18.2	1.5
Electricians	942	100.0	61.3	22.0	15.3	1.5
Painters	154	100.0	79.9	15.6	4.5	----
Plumbers and pipefitters	328	100.0	73.3	19.0	7.7	----
Tinsmiths, coppersmiths, and sheetmetal workers	292	100.0	49.1	34.7	15.5	.7
Other construction craftsmen	192	100.0	58.9	36.5	4.7	----
Linemen and servicemen, telegraph, telephone, and power	254	100.0	66.3	19.4	14.3	----
Machinists	704	100.0	58.5	26.6	14.2	.7
Mechanics and repairmen	4,114	100.0	38.3	25.5	35.5	.7
Airplane	756	100.0	28.4	26.7	45.0	----
Auto	1,709	100.0	35.7	25.5	37.5	1.3
Radio and television	700	100.0	34.9	25.5	39.0	.6
All other	949	100.0	53.2	24.4	22.0	.3
Meatcutters	128	100.0	65.1	27.9	7.0	----
Welders and flame-cutters	622	100.0	48.2	33.4	18.0	.3
Barbers, hairdressers, and cosmetologists	365	100.0	61.4	22.0	12.1	4.4
All other occupations	4,304	100.0	51.1	27.0	21.6	.4
Field[2]						
Agriculture	1,321	100.0	39.2	32.1	28.5	.2
Business or commercial	2,534	100.0	51.5	20.2	27.2	1.1
General trades	1,123	100.0	43.7	20.5	34.5	1.3
Merchandising (including sales, distributive)	182	100.0	73.6	17.6	8.8	----
Supervisors, foremen, and personnel management	216	100.0	66.2	19.9	13.9	----
All other fields	337	100.0	51.6	17.8	30.0	.6
Occupation or field not available	679	100.0	48.0	30.5	20.8	.7
WOMEN						
Total	11,185	100.0	57.9	21.6	20.0	.4
Occupation						
Nurses, professional	472	100.0	79.0	13.8	6.8	.4
Teachers, except college	257	100.0	28.7	47.7	23.6	----
Bookkeepers	339	100.0	66.4	16.5	17.1	----
Office machine operators	283	100.0	60.3	28.7	10.3	.7
Secretaries	1,350	100.0	75.9	12.6	11.1	.4
Stenographers	1,134	100.0	59.2	23.1	16.3	1.4
Typists	329	100.0	43.6	18.2	38.2	----
Telephone operators	122	100.0	63.9	27.9	8.2	----
Hairdressers and cosmetologists	487	100.0	61.8	26.9	11.3	----
Practical nurses	403	100.0	62.3	25.8	11.9	----
All other occupations	1,264	100.0	49.5	31.6	18.4	.5
Field[2]						
Business or commercial	3,064	100.0	66.5	18.0	15.2	.3
Dressmaking, sewing, and dress designing	178	100.0	37.6	25.8	36.5	----
Home economics or homemaking	1,084	100.0	21.6	17.8	60.3	.3
All other fields	196	100.0	50.0	31.1	18.9	----
Occupation or field not available	223	100.0	44.4	38.1	15.7	1.8

[1] Occupations or fields in which at least 100,000 persons took training; excludes programs still being taken.

[2] Includes programs which could not be identified with a particular occupation.

Table 9. Workers Using Training on the Job, by Time of Use, Age, Sex, and Color, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college and who had formal occupational training]

Age, sex, and color	Workers with training [1]		Using at least 1 skill on current job (last job if unemployed)	Not using on current job, used at least 1 skill on prior job	Never used	Use not available
	Number (in thousands)	Percent				
ALL PERSONS						
Both sexes						
22 to 64 years	23,555	100.0	60.0	20.9	18.7	.4
22 to 34 years	8,004	100.0	57.5	18.9	23.4	.2
35 to 44 years	7,286	100.0	60.7	21.0	17.9	.4
45 to 54 years	5,461	100.0	59.1	22.8	17.4	.7
55 to 64 years	2,804	100.0	67.1	22.3	9.9	.7
Men						
22 to 64 years	15,108	100.0	57.0	22.1	20.4	.5
22 to 34 years	5,220	100.0	52.6	20.5	26.5	.3
35 to 44 years	4,766	100.0	58.1	22.4	19.0	.5
45 to 54 years	3,321	100.0	56.0	24.7	18.4	.8
55 to 64 years	1,741	100.0	68.9	20.9	9.6	.6
Women						
22 to 64 years	8,447	100.0	65.5	18.7	15.6	.3
22 to 34 years	2,784	100.0	66.7	15.8	17.4	.1
35 to 44 years	2,520	100.0	65.6	18.4	15.9	.1
45 to 54 years	2,080	100.0	64.3	19.6	15.7	.4
55 to 64 years	1,063	100.0	64.2	24.7	10.3	.8
NONWHITE PERSONS						
Both sexes						
22 to 64 years	1,952	100.0	43.1	26.1	30.8	.1
22 to 34 years	791	100.0	37.7	23.6	38.7	----
35 to 44 years	660	100.0	40.5	32.3	26.9	.3
45 to 54 years	376	100.0	53.6	21.9	24.5	----
55 to 64 years	125	100.0	58.4	21.6	20.0	----
Men						
22 to 64 years	1,174	100.0	36.9	29.0	34.0	----
22 to 34 years	476	100.0	32.9	26.4	40.7	----
35 to 44 years	407	100.0	35.6	35.9	28.5	----
45 to 54 years	224	100.0	42.2	24.4	33.3	----
55 to 64 years	67	[2]	[2]	[2]	[2]	[2]
Women						
22 to 64 years	778	100.0	52.2	21.7	25.8	.3
22 to 34 years	315	100.0	44.9	19.4	35.7	----
35 to 44 years	253	100.0	48.4	26.6	24.2	.8
45 to 54 years	152	100.0	70.1	18.2	11.7	----
55 to 64 years	58	[2]	[2]	[2]	[2]	[2]

[1] Excludes workers still taking training who had no previous training.

[2] Percent not shown where base is less than 100,000.

Table 10. Use of Most Recent Training,[1] by Age When Started, Current Age, Sex, and Color, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college and who had formal occupational training]

Current age, use of training, and color	Age when most recent training started												
	Men							Women					
	Total	Less than 18 years	18 to 24 years	25 to 34 years	35 to 44 years	45 to 64 years	Not available	Total	Less than 18 years	18 to 24 years	25 to 34 years	35 to 44 years	45 to 64 years	Not available
All Persons														
Total, 22 to 64 years:														
Number (in thousands)	15,108	3,525	5,825	3,640	1,236	384	498	8,447	4,065	2,408	819	612	267	274
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Used on current job	51.0	42.4	50.5	56.2	61.3	66.4	43.6	61.3	60.6	60.8	61.5	68.5	70.8	49.6
Used on earlier job	23.5	24.2	23.9	22.6	18.9	18.5	36.5	20.8	17.1	26.6	23.6	14.4	20.2	29.9
Never used	24.7	32.5	25.0	20.7	19.3	14.6	17.5	17.6	21.8	12.4	14.9	15.7	9.0	20.4
Not available	.7	.9	.6	.5	.3	.5	2.4	.4	.4	.2	----	1.3	----	----
22 to 34 years:														
Number (in thousands)	5,218	1,429	2,679	986	----	----	124	2,782	1,602	911	217	----	----	52
Percent	100.0	100.0	100.0	100.0	----	----	100.0	100.0	100.0	100.0	100.0	----	----	[2]
Used on current job	46.6	36.5	48.2	58.4	----	----	34.7	62.0	63.4	60.3	63.6	----	----	[2]
Used on earlier job	21.7	24.0	21.2	16.8	----	----	42.7	18.2	15.0	24.7	14.7	----	----	[2]
Never used	31.3	38.8	30.4	23.8	----	----	22.6	19.7	21.5	15.0	21.7	----	----	[2]
Not available	.5	.7	.3	.9	----	----	----	.1	.1	----	----	----	----	[2]
35 to 44 years:														
Number (in thousands)	4,765	930	1,889	1,366	434	----	146	2,521	1,201	672	318	276	----	84
Percent	100.0	100.0	100.0	100.0	100.0	----	100.0	100.0	100.0	100.0	100.0	100.0	----	[2]
Used on current job	51.4	39.9	48.0	58.2	68.7	----	52.7	61.1	61.4	56.7	63.2	75.6	----	[2]
Used on earlier job	23.9	26.5	27.4	20.3	11.3	----	32.9	20.6	16.7	29.3	19.5	12.6	----	[2]
Never used	24.1	32.5	24.1	21.0	19.6	----	14.4	18.1	21.6	14.0	17.3	11.0	----	[2]
Not available	.6	1.2	.5	.5	.5	----	----	.2	.2	----	----	.8	----	[2]
45 to 54 years:														
Number (in thousands)	3,383	720	764	982	570	223	124	2,079	895	520	191	219	176	78
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	[2]
Used on current job	50.5	43.6	53.7	48.2	54.6	69.1	37.9	60.3	52.2	66.3	58.1	75.3	65.9	[2]
Used on earlier job	26.3	24.0	25.1	32.3	23.9	14.3	33.1	22.2	21.1	24.6	34.0	11.0	21.6	[2]
Never used	21.9	30.7	19.6	19.3	21.1	16.6	19.4	16.9	25.7	8.8	7.9	11.9	12.5	[2]
Not available	1.2	1.7	1.6	.2	.5	----	9.7	.7	1.0	.2	----	1.8	----	[2]
55 to 64 years:														
Number (in thousands)	1,742	446	493	306	232	161	104	1,063	367	305	93	147	91	60
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	[2]	100.0	[2]	[2]
Used on current job	64.5	64.1	68.2	66.0	64.2	62.7	48.1	61.7	65.9	62.0	[2]	46.9	[2]	[2]
Used on earlier job	22.7	20.2	23.5	20.6	20.7	24.2	38.5	25.3	18.5	29.8	[2]	22.4	[2]	[2]
Never used	12.2	15.7	7.1	13.4	14.2	11.8	13.5	12.1	14.7	6.9	[2]	29.3	[2]	[2]
Not available	.6	----	1.2	----	.9	1.2	----	.8	.8	1.3	[2]	1.4	[2]	[2]
Nonwhite Persons														
Total, 22 to 64 years:														
Number (in thousands)	1,173	281	371	341	121	33	26	785	302	193	142	66	33	49
Percent	100.0	100.0	100.0	100.0	100.0	[2]	[2]	100.0	100.0	100.0	100.0	[2]	[2]	[2]
Used on current job	32.3	21.4	35.8	34.9	39.7	[2]	[2]	47.9	41.1	48.7	60.6	[2]	[2]	[2]
Used on earlier job	29.2	32.0	30.7	27.6	13.2	[2]	[2]	23.3	18.9	29.5	27.5	[2]	[2]	[2]
Never used	38.5	46.6	33.4	37.5	47.1	[2]	[2]	28.5	39.4	21.8	12.0	[2]	[2]	[2]
Not available	----	----	----	----	----	[2]	[2]	.3	.7	----	----	[2]	[2]	[2]

[1] Excludes workers still taking training who had no previous training. "Use on current job" includes workers currently unemployed who used their most recent training on their last job.

[2] Percent not shown where base is less than 100,000.

Table 11. All Ways and Most Helpful Way of Learning Current Job,[1] by Current Occupation, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college]

Current occupation [1]	Total in occupation	No training needed	All ways of learning [2]				Most helpful way of learning									
							Formal training			On-the-job learning			Casual methods			
			Formal training [3]	On-the-job learning [4]	Casual methods [5]	Not available	School	Apprenticeship	Armed Forces	On-the-job instruction	Company training course	Worked way up	From friend or relative	Picked it up	Other	Not available
Total, all occupations	100.0	7.5	30.2	56.2	45.4	1.6	8.7	2.0	1.2	29.6	3.6	3.9	6.0	20.4	2.5	14.6
Professional, technical, and kindred workers	100.0	2.1	64.6	66.7	33.2	1.2	25.2	2.0	2.5	24.9	4.3	5.7	2.3	6.4	8.7	16.0
Accountants and auditors	100.0	.8	61.2	80.2	28.9	.8	24.8	.8	.8	26.5	1.2	10.7	.8	10.7	2.1	20.7
Draftsmen	100.0	-------	77.4	84.8	26.3	.9	26.3	6.5	5.5	37.3	2.3	3.2	-------	.9	5.1	12.9
Engineers	100.0	1.2	70.4	80.8	34.0	.6	20.4	4.1	4.1	24.9	5.0	10.1	.6	6.5	6.5	16.6
Nurses, professional	100.0	1.8	92.1	38.7	22.4	.5	54.5	.5	.5	11.4	.8	-------	-------	-------	16.8	13.7
Teachers, except college	100.0	6.8	55.8	41.5	27.9	6.8	29.9	-------	1.4	19.0	-------	2.0	6.8	2.0	10.9	21.1
Technicians, electrical and electronic and other engineering and physical sciences	100.0	4.7	54.2	83.5	30.2	-------	10.8	1.9	7.1	34.4	6.1	5.2	.9	2.4	2.8	23.6
Other technicians (n.e.c.)	100.0	2.2	54.4	73.5	23.5	-------	25.0	-------	3.7	36.8	5.9	1.5	-------	2.9	5.1	16.9
All other professional, technical, and kindred workers	100.0	2.1	53.9	64.8	43.1	1.4	17.0	1.6	1.3	24.3	6.8	7.0	4.6	11.5	10.1	13.7
Farmers and farm managers	100.0	8.4	20.6	17.6	79.7	4.0	3.4	.1	.6	7.3	.3	.4	30.5	23.9	5.8	19.2
Managers, officials, and proprietors, except farm	100.0	4.0	36.2	57.1	55.7	1.2	7.8	1.6	1.8	20.8	3.3	9.2	8.5	24.0	3.3	15.7
Buyers and department heads, store	100.0	2.6	35.2	83.3	35.7	.9	9.7	.9	.9	25.6	4.0	23.3	-------	15.9	3.1	14.1
Officials and administrators (n.e.c.), public administration	100.0	12.7	51.5	72.4	43.3	-------	15.7	-------	1.5	28.4	-------	9.7	1.5	11.9	5.2	13.4
Managers, officials, and proprietors (n.e.c.)	100.0	3.7	36.2	54.3	58.0	1.3	7.4	1.8	1.8	19.9	3.6	8.2	9.6	25.0	3.4	15.5
Construction	100.0	.7	44.1	61.8	65.3	1.5	7.0	8.1	1.3	22.7	.4	4.6	15.9	17.9	1.1	20.3
Manufacturing	100.0	.7	46.4	71.4	50.8	1.3	10.9	2.1	2.7	26.0	2.1	13.4	5.6	16.6	5.0	14.9
Transportation and public utilities	100.0	.8	41.6	70.6	50.8	.8	9.5	1.5	1.9	17.9	9.2	13.4	6.1	22.9	1.9	14.9
Wholesale and retail trade	100.0	5.4	26.4	45.9	63.1	1.2	5.1	.5	1.4	18.6	3.5	6.9	10.7	31.3	3.2	13.4
Banking, insurance, and real estate	100.0	1.5	54.3	81.0	30.4	.9	9.8	-------	1.8	26.1	12.6	12.6	.9	7.7	2.8	24.2
All other industries	100.0	5.7	38.6	40.4	60.7	1.5	9.1	1.9	2.1	14.6	1.5	5.9	11.5	27.8	4.4	15.5
All other managers and officials	100.0	4.8	32.9	68.3	44.5	1.7	7.6	.7	2.1	25.0	.7	11.9	3.3	22.2	2.1	19.5
Clerical and kindred workers	100.0	2.0	53.6	71.4	29.5	.7	21.7	.2	.4	37.9	4.1	4.9	1.6	9.9	1.9	15.3
Agents	100.0	1.9	47.7	70.1	48.6	-------	13.1	-------	-------	25.2	10.3	7.5	11.2	9.3	2.8	18.7
Bank tellers	100.0	-------	44.1	96.6	10.2	-------	4.2	-------	-------	69.5	2.5	5.9	1.7	1.7	-------	14.4
Bookkeepers	100.0	1.8	64.4	61.6	34.3	.2	26.6	.2	.1	36.7	2.0	3.5	3.3	9.7	2.1	13.9
Cashiers	100.0	5.1	23.3	66.6	37.6	1.5	5.7	-------	1.2	43.9	6.0	3.0	2.4	20.3	------	12.5
Mail carriers	100.0	4.3	13.5	80.8	23.6	1.4	2.9	-------	-------	64.4	1.0	3.4	1.0	8.7	4.3	10.1
Office machine operators	100.0	-------	58.9	76.5	14.3	.6	25.6	-------	-------	38.1	15.2	2.1	-------	2.1	2.1	14.9
Payroll and timekeeping clerks	100.0	-------	59.2	93.1	21.5	-------	15.4	-------	-------	50.8	3.8	3.8	-------	3.8	2.3	20.0
Postal clerks	100.0	3.6	17.9	80.5	30.8	2.6	7.7	1.0	1.0	46.7	3.6	1.5	1.0	11.3	1.5	21.0
Receptionists	100.0	2.2	67.4	57.0	35.6	-------	25.2	-------	-------	31.1	3.7	5.9	.7	18.5	3.7	8.9
Secretaries	100.0	1.3	85.5	60.8	24.6	.2	50.1	-------	.2	21.7	.9	4.9	.6	5.2	1.3	13.9
Shipping and receiving clerks	100.0	6.2	7.8	64.8	42.6	3.5	.8	-------	1.6	37.9	1.6	8.2	2.3	21.9	.8	18.8
Stenographers	100.0	-------	94.1	66.2	9.6	-------	54.4	-------	-------	19.9	1.5	4.4	-------	3.7	-------	16.2
Stock clerks and storekeepers	100.0	9.1	15.3	67.9	46.7	.7	4.9	1.0	1.7	37.3	.7	3.8	1.7	21.3	1.4	17.1
Telephone operators	100.0	1.2	32.5	80.0	14.5	.8	4.8	-------	-------	43.4	21.7	2.8	-------	6.4	2.0	17.7
Typists	100.0	-------	85.5	66.2	25.2	.4	41.0	-------	.4	29.5	1.1	3.0	.4	8.1	1.9	14.5
All other clerical workers	100.0	1.6	45.5	78.1	31.7	.8	11.4	.4	.4	43.8	4.7	6.6	1.8	10.7	2.3	16.2
Sales workers	100.0	7.5	23.4	60.2	47.4	1.0	5.1	.2	.4	30.8	8.2	4.2	3.5	23.8	3.5	12.7
Insurance agents, brokers, and underwriters	100.0	-------	51.5	84.7	33.6	.9	3.1	.9	.9	38.4	18.3	.9	1.3	11.4	5.2	19.6
Real estate agents and brokers	100.0	2.0	49.3	45.9	56.8	1.4	22.3	-------	-------	15.5	2.7	--------	2.0	23.0	13.5	18.9
Salesmen and salesclerks (n.e.c.)	100.0	8.5	19.1	58.7	49.1	.9	4.2	.2	.4	30.9	6.6	4.8	4.0	25.4	2.8	12.1
Manufacturing	100.0	2.9	33.5	67.3	46.5	2.4	5.7	1.2	2.0	30.6	6.9	11.8	4.5	17.6	2.9	13.9
Wholesale trade	100.0	4.8	28.2	72.8	51.0	-------	2.4	.7	.7	26.9	9.2	11.2	3.7	19.7	4.8	16.0
Retail trade	100.0	9.7	15.7	54.9	49.8	.9	4.3	-------	.1	31.6	6.2	2.7	4.2	27.8	2.5	10.9
All other sales workers	100.0	7.1	26.1	61.5	36.7	2.2	6.6	-------	.9	31.9	18.1	4.0	.9	19.0	3.1	8.4
Craftsmen, foremen, and kindred workers	100.0	1.8	40.6	64.8	47.5	.8	6.0	8.3	2.4	27.6	3.9	5.5	6.2	17.9	1.6	18.9
Bakers	100.0	1.8	21.6	56.8	46.8	1.8	4.5	9.0	-------	38.7	1.8	6.3	8.1	20.7	-------	9.0
Compositors and typesetters	100.0	-------	73.3	65.7	25.7	-------	19.0	25.7	-------	28.6	1.9	6.7	-------	8.6	-------	9.5
Construction craftsmen	100.0	1.7	39.4	54.8	57.2	.9	4.3	11.0	2.2	24.8	.9	2.2	10.5	21.9	1.5	19.0
Brickmasons, stonemasons, and tile setters	100.0	2.5	44.7	56.6	53.5	-------	6.9	12.6	-------	27.7	-------	1.3	15.1	13.2	-------	20.8
Carpenters	100.0	2.8	31.1	48.7	67.8	.6	2.4	7.0	2.3	21.9	1.2	2.3	14.2	28.1	1.7	16.2
Electricians	100.0	-------	72.9	71.2	33.4	-------	10.7	20.5	4.9	24.9	1.9	2.2	1.9	6.6	1.4	24.9
Excavating, grading, and road machinery operators	100.0	2.2	11.2	47.0	72.2	1.0	.6	.6	2.6	23.6	-------	3.2	8.6	40.6	3.5	14.4
Painters	100.0	1.9	27.8	46.9	58.7	.5	5.4	12.0	.5	22.9	.9	1.2	17.2	21.5	-------	16.5
Plumbers and pipefitters	100.0	.7	55.0	66.6	39.1	2.6	3.0	15.6	.7	35.1	-------	2.3	5.3	10.3	2.0	25.1
Tinsmiths, coppersmiths, and sheetmetal workers	100.0	-------	70.9	58.1	44.4	1.7	10.3	13.7	4.3	20.5	1.7	4.3	-------	27.4	1.7	16.2

See footnotes at end of table.

Table 11. All Ways and Most Helpful Way of Learning Current Job,[1] by Current Occupation, April 1963—Continued

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college]

Current occupation [1]	Total in occupation	No training needed	All ways of learning [2]				Most helpful way of learning									
							Formal training			On-the-job learning			Casual methods			
			Formal training [3]	On-the-job learning [4]	Casual methods [5]	Not available	School	Apprenticeship	Armed Forces	On-the-job instruction	Company training course	Worked way up	From friend or relative	Picked it up	Other	Not available
Craftsmen, foremen, and kindred workers—Continued																
Construction craftsmen—Con.																
Other construction craftsmen	100.0	1.1	34.1	59.1	68.8	2.3	-------	14.8	3.4	27.9	-------	1.1	9.1	17.0	1.1	24.4
Cranemen, derrickmen, and hoistmen	100.0	1.7	17.5	60.0	49.2	1.7	-------	-------	7.5	35.0	4.2	4.2	5.8	23.3	3.3	15.0
Foremen (n.e.c.)	100.0	.6	32.7	83.7	36.4	.8	4.5	4.3	2.3	26.3	4.3	20.0	1.6	13.8	.5	21.7
Manufacturing	100.0	-------	32.6	85.9	33.8	1.3	3.8	3.4	2.0	25.6	5.3	23.4	1.0	12.7	.7	22.1
Durable goods	100.0	-------	33.2	87.8	38.1	1.4	2.3	4.0	1.2	27.6	5.4	22.4	1.2	13.6	.5	21.9
Nondurable goods	100.0	-------	31.8	82.8	27.0	1.1	6.2	2.6	3.3	22.6	5.1	24.8	.7	11.3	1.1	22.3
All other industries	100.0	1.8	33.0	79.6	41.4	-------	5.8	6.0	2.9	27.5	2.6	13.9	2.6	16.0	-------	20.9
Linemen and servicemen, telegraph, telephone, and power	100.0	2.5	55.0	94.7	30.7	-------	1.2	9.9	1.6	38.5	21.1	5.9	1.2	5.0	-------	13.0
Machinists	100.0	-------	56.1	70.9	36.6	.5	10.4	19.7	1.3	28.8	4.7	2.6	.5	9.4	1.0	21.6
Mechanics and repairmen	100.0	2.5	43.4	60.0	52.4	.5	9.2	2.3	3.8	25.4	5.6	2.1	5.8	21.8	2.7	18.9
Airplane	100.0	-------	72.6	84.1	31.9	-------	16.8	2.7	8.8	23.0	4.4	1.8	1.8	10.6	1.8	28.3
Auto	100.0	1.4	40.5	48.1	61.9	1.0	8.3	1.6	4.4	21.3	5.2	2.1	10.3	27.5	3.0	14.8
Radio and television	100.0	-------	86.3	49.0	30.4	-------	48.0	2.0	11.8	8.8	4.9	-------	2.0	6.9	4.9	10.8
All other	100.0	3.6	38.7	65.7	50.7	.3	5.6	2.8	2.2	29.4	6.0	2.4	3.8	20.8	2.4	21.1
Stationary engineers	100.0	4.2	39.5	73.7	33.5	1.8	12.0	1.2	7.2	27.5	-------	7.2	1.8	9.0	4.2	25.7
Toolmakers, and die makers and setters	100.0	4.4	64.6	55.2	32.6	-------	8.8	32.6	-------	17.1	2.8	4.4	1.1	11.0	1.7	16.0
All other craftsmen and kindred workers	100.0	1.4	34.2	69.7	41.3	1.4	3.5	8.8	.4	35.7	3.3	6.6	6.5	13.9	1.3	18.7
Operatives and kindred workers	100.0	8.6	12.9	61.8	42.6	1.2	2.8	.9	.8	41.4	3.8	2.3	4.4	22.1	1.3	11.6
Assemblers	100.0	6.9	11.9	81.2	28.4	.3	2.6	-------	.6	63.9	3.8	.5	.6	13.5	.8	6.7
Attendants, auto service and parking	100.0	13.0	14.4	43.8	58.7	1.0	1.4	-------	2.9	25.0	6.2	-------	2.4	39.4	1.0	8.7
Bus drivers	100.0	11.1	14.2	52.1	41.6	-------	2.1	-------	-------	18.4	21.6	1.1	3.7	25.3	6.8	10.0
Checkers, examiners, and inspectors, manufacturing	100.0	4.5	15.8	85.8	32.1	.9	5.1	.4	2.6	55.3	5.7	2.6	1.5	7.0	.6	14.7
Deliverymen and routemen	100.0	7.8	13.0	57.8	49.1	2.1	1.8	-------	.5	33.8	7.5	2.1	8.7	24.6	.5	12.8
Dressmakers and seamstresses, except factory	100.0	3.1	21.0	25.3	81.5	-------	10.5	-------	-------	11.1	1.2	-------	11.7	45.7	6.2	10.5
Filers, grinders, and polishers, metal	100.0	7.9	13.3	66.1	39.4	-------	3.0	-------	-------	49.1	1.8	1.8	1.2	25.5	-------	9.7
Laundry and dry cleaning operatives	100.0	12.5	12.7	48.7	59.8	-------	.8	-------	-------	31.2	1.7	2.0	9.3	30.3	.6	11.6
Meatcutters, except slaughter and packing house	100.0	-------	36.0	57.7	49.2	1.6	5.3	9.5	1.1	34.4	4.2	-------	11.1	15.3	3.7	15.3
Mine operatives and laborers (n.e.c.)	100.0	16.0	3.5	52.0	50.0	-------	-------	1.0	-------	29.0	1.0	5.0	4.5	27.5	1.5	14.5
Packers and wrappers (n.e.c.)	100.0	13.6	4.8	60.2	41.6	1.1	.3	-------	-------	41.6	2.0	1.1	2.5	21.5	.9	16.3
Painters, except construction and maintenance	100.0	7.6	13.6	47.5	56.8	1.7	5.9	3.4	1.7	27.1	-------	2.5	3.4	32.2	-------	16.1
Sewers and stitchers, manufacturing	100.0	3.2	12.4	60.2	40.3	1.5	5.1	1.3	-------	47.3	5.3	.7	7.7	21.2	1.9	6.3
Taxicab drivers and chauffeurs	100.0	24.6	14.5	29.7	49.3	2.9	-------	-------	1.4	13.8	5.8	2.2	5.1	26.8	2.2	18.1
Truck and tractor drivers	100.0	17.5	7.6	32.5	61.2	2.4	.7	.1	1.8	15.9	1.7	2.0	6.3	39.5	1.7	12.9
Welders and flame-cutters	100.0	4.2	41.3	62.4	34.9	-------	15.1	1.8	1.8	30.7	7.7	2.1	4.8	15.6	1.9	14.3
Other operatives	100.0	5.1	17.6	71.4	36.6	1.9	1.7	3.2	1.9	43.6	6.0	4.0	5.5	13.3	1.2	14.4
Operatives and kindred workers (n.e.c.)	100.0	6.6	11.3	71.7	36.0	1.0	2.3	.9	.3	51.7	2.7	3.0	3.0	17.8	.9	10.7
Manufacturing	100.0	6.4	10.8	73.8	34.5	.9	2.2	1.0	.2	54.2	2.8	2.9	2.7	16.6	.8	10.3
Durable goods	100.0	6.5	14.1	74.6	34.8	.8	3.1	1.4	.2	54.6	2.3	1.9	2.3	15.9	.7	11.1
Furniture and fixtures	100.0	14.8	18.3	58.3	36.5	3.5	6.1	-------	-------	41.7	1.7	1.7	7.0	16.5	-------	10.4
Stone, clay, and glass products	100.0	12.6	4.6	68.2	31.1	1.3	-------	1.3	-------	53.6	2.0	4.6	3.3	12.6	-------	9.9
Primary metal industries	100.0	4.3	13.0	75.5	32.6	1.6	1.1	2.2	1.1	50.0	3.8	4.9	-------	15.8	1.1	15.8
Fabricated metal products	100.0	5.0	12.3	82.2	31.3	.9	1.5	.9	-------	62.0	.6	.9	2.6	12.6	.6	13.4
Machinery, except electrical	100.0	7.1	29.4	72.0	32.4	.7	4.7	5.7	-------	48.3	.7	2.7	1.0	15.2	-------	14.5
Electrical machinery, equipment, and supplies	100.0	3.4	13.3	84.3	22.5	-------	4.4	-------	.7	71.3	3.1	.7	1.4	8.2	.7	6.1
Transportation equipment [6]	100.0	4.9	14.6	77.2	42.7	-------	6.5	-------	-------	56.5	1.2	-------	-------	16.7	1.2	13.0
Motor vehicles and motor vehicle equipment	100.0	6.7	6.7	80.6	37.2	-------	2.8	-------	-------	65.5	-------	-------	-------	11.7	1.7	11.7
Other durable goods	100.0	7.1	5.5	65.9	48.7	.6	1.0	.6	-------	42.9	5.2	1.9	5.2	28.2	1.6	6.2
Nondurable goods	100.0	6.2	7.4	73.0	34.2	.9	1.2	.5	.1	53.8	3.4	3.9	3.1	17.4	.9	9.5
Food and kindred products	100.0	6.7	5.5	67.0	37.0	.7	.7	-------	.5	52.6	3.2	3.0	2.2	23.3	.7	7.0
Textile mill products	100.0	1.7	8.7	82.6	28.8	1.0	2.1	.7	-------	66.0	2.4	1.0	7.6	7.3	1.0	10.1
Apparel and other fabricated textile products	100.0	8.7	8.3	63.0	39.2	1.9	3.0	1.1	-------	51.7	.8	1.9	3.8	21.0	-------	7.2

See footnotes at end of table.

Table 11. All Ways and Most Helpful Way of Learning Current Job,[1] by Current Occupation, April 1963—Continued

[Percent distribution of civilian workers 21 to 64 years old who completed less than 3 years of college]

Current occupation [2]	Total in occupation	No training needed	All ways of learning [3]				Most helpful way of learning									
							Formal training			On-the-job learning			Casual methods			
			Formal training [4]	On-the-job learning [5]	Casual methods [6]	Not available	School	Apprenticeship	Armed Forces	On-the-job instruction	Company training course	Worked way up	From friend or relative	Picked it up	Other	Not available
Operatives and kindred workers—Continued																
Operatives and kindred workers (n.e.c.)—Con.																
Manufacturing—Continued																
Nondurable goods—Con.																
Paper and allied products	100.0	7.1	3.8	78.6	33.6	-------	.8	.8	-------	50.0	2.1	12.6	1.7	17.7	-------	7.1
Chemicals and allied products	100.0	2.9	9.7	84.6	26.9	1.1	-------	-------	-------	58.3	6.7	8.0	1.1	12.0	1.1	10.9
Rubber and miscellaneous plastic products	100.0	10.1	8.2	65.8	30.4	-------	1.3	-------	-------	54.4	4.4	1.3	-------	19.6	4.4	4.4
Leather and leather products	100.0	9.2	2.3	68.2	45.7	1.2	1.2	-------	-------	42.2	1.7	1.2	4.0	19.7	-------	20.8
Other nondurable goods	100.0	4.3	16.0	78.4	28.4	1.2	...	1.2	-------	50.6	10.5	2.5	2.5	14.2	1.2	13.0
Nonmanufacturing	100.0	8.5	14.1	57.8	46.2	1.9	3.4	.4	1.6	35.3	1.4	4.1	4.6	25.9	1.2	13.7
Private household workers	100.0	27.9	10.3	9.3	56.4	5.5	4.4	-------	.7	4.8	.1	.5	13.9	31.9	2.5	27.9
Baby sitters	100.0	48.9	11.7	12.2	30.6	5.0	6.7	-------	-------	8.3	-------	-------	4.4	22.2	1.1	48.9
Housekeepers	100.0	19.1	13.6	20.0	63.6	4.5	4.5	-------	-------	6.4	-------	4.5	7.3	37.3	4.5	19.1
All other private household workers	100.0	25.7	9.9	7.9	59.3	5.7	4.1	-------	.8	4.2	.2	.2	15.8	32.8	2.5	25.7
Service workers, except private household	100.0	13.5	24.6	45.5	42.7	2.3	10.6	.7	1.1	25.9	4.0	1.4	4.3	23.7	2.2	13.5
Attendants, hospital and other institutions	100.0	5.3	38.8	76.2	29.0	.7	10.3	-------	2.7	48.3	7.8	2.2	.4	10.0	2.0	5.3
Attendants, professional and personal service (n.e.c.) and recreation and amusement	100.0	15.7	14.0	38.8	61.2	.8	8.3	-------	-------	24.8	2.5	-------	1.7	38.0	-------	15.7
Barbers	100.0	1.4	84.8	23.4	26.2	1.4	38.6	18.6	-------	6.9	-------	-------	6.2	4.8	-------	1.4
Bartenders	100.0	7.1	8.8	30.1	54.9	8.0	4.4	-------	-------	20.4	-------	4.4	3.5	41.6	1.8	7.1
Chambermaids and maids, except private household	100.0	19.3	11.4	38.6	45.2	2.4	2.4	-------	-------	25.9	4.8	1.2	7.8	30.7	-------	7.8
Charwomen and cleaners	100.0	28.7	2.3	25.5	52.8	2.3	1.4	-------	-------	16.2	.9	-------	3.7	41.7	.9	6.5
Cooks, except private household	100.0	7.8	12.3	41.8	59.8	1.9	1.9	-------	3.0	21.6	1.6	2.6	10.4	37.1	2.2	11.9
Counter and fountain workers	100.0	20.5	8.7	59.1	44.9	-------	-------	-------	-------	45.7	1.6	1.6	2.4	22.0	-------	6.3
Hairdressers and cosmetologists	100.0	1.4	87.8	26.5	12.7	-------	68.5	2.2	-------	9.1	-------	.8	.6	4.4	1.4	11.6
Housekeepers and stewards, except private household	100.0	13.0	15.3	47.3	42.7	2.3	5.3	-------	-------	26.7	5.3	1.5	6.1	27.5	1.5	13.0
Janitors and sextons	100.0	22.4	7.2	36.0	50.4	3.6	2.6	-------	-------	22.4	2.1	.9	3.6	31.8	.9	13.4
Kitchen workers (n.e.c.) except private household	100.0	25.4	4.8	34.7	44.3	3.0	1.8	-------	2.1	22.8	1.5	.6	6.0	29.0	1.2	9.6
Porters	100.0	37.3	4.9	22.5	47.2	1.4	2.1	1.4	-------	14.1	1.4	-------	4.9	27.5	-------	11.3
Practical nurses	100.0	2.3	72.9	54.2	28.2	.8	35.5	-------	.8	31.7	.8	.8	.8	7.2	4.2	16.0
Firemen	100.0	-------	42.2	79.5	23.0	8.1	6.2	-------	3.7	28.0	19.3	5.6	-------	5.0	6.2	26.1
Guards, watchmen, and doorkeepers	100.0	14.6	15.5	62.6	29.1	3.4	6.8	-------	4.4	35.9	8.7	1.5	1.0	11.2	-------	16.0
Policemen and detectives	100.0	2.4	55.2	79.9	31.9	.7	12.2	1.0	3.1	21.2	18.7	3.1	.7	8.9	8.7	20.8
Waiters and waitresses	100.0	14.2	5.2	42.3	55.8	1.9	1.3	-------	-------	30.8	2.8	.3	5.6	35.2	1.9	7.8
All other service workers	100.0	21.3	14.3	42.3	41.9	3.8	5.0	-------	-------	26.6	3.0	1.6	6.2	17.8	4.0	13.9
Farm laborers and foremen	100.0	17.7	11.1	19.2	64.8	5.4	2.6	.2	.4	13.2	.2	.3	13.5	30.4	4.7	16.9
Farm laborers, unpaid family workers	100.0	18.6	13.3	11.4	64.7	6.5	3.9	.5	-------	5.8	.5	-------	17.9	26.1	7.2	19.6
All other farm laborers and foremen	100.0	17.3	9.9	23.4	64.9	4.8	1.9	-------	.6	17.2	-------	.4	11.1	32.6	3.4	15.5
Laborers, except farm and mine	100.0	18.1	6.9	40.0	50.5	2.3	1.7	.4	.9	26.6	1.2	1.8	5.1	31.4	1.4	11.3
Gardeners, except farm, and groundskeepers	100.0	20.6	5.8	32.8	51.9	1.6	1.1	-------	1.1	23.3	-------	3.2	1.6	34.4	-------	14.8
Lumbermen, raftsmen, and wood choppers	100.0	20.5	-------	9.8	75.9	1.8	-------	-------	-------	1.8	-------	-------	29.5	38.4	-------	9.8
Other laborers	100.0	13.1	5.6	41.5	54.8	3.2	-------	-------	-------	27.0	1.5	2.1	6.2	36.4	3.0	10.7
Laborers (n.e.c.)	100.0	18.9	7.7	42.0	48.0	2.1	2.2	.5	1.2	28.2	1.4	1.7	3.8	29.6	1.3	11.3
Manufacturing	100.0	18.4	5.1	47.3	44.6	3.1	.8	-------	1.1	32.1	1.1	2.2	1.8	27.6	1.7	13.1
Durable goods	100.0	19.7	6.0	48.5	45.4	2.4	.9	-------	1.3	29.6	1.3	3.1	1.8	27.9	1.5	12.8
Metal industries	100.0	21.6	8.3	49.5	39.4	4.1	.9	-------	2.8	28.4	1.8	5.0	1.4	23.4	.9	12.8
Other durable goods	100.0	17.9	3.8	47.4	50.9	.9	.9	-------	-------	30.8	.9	1.3	2.1	32.1	2.1	12.0
Nondurable goods	100.0	16.2	3.5	45.2	43.2	4.2	.3	-------	.8	36.3	.8	.8	1.9	27.0	1.9	13.5
Nonmanufacturing	100.0	19.2	9.2	39.2	49.8	1.6	3.0	.8	1.2	26.1	1.5	1.4	4.8	30.6	1.0	10.3
Construction	100.0	13.4	11.5	41.3	55.0	.7	3.7	1.6	1.0	28.8	.3	.7	4.4	35.3	1.0	9.7
Other nonmanufacturing	100.0	25.2	6.8	37.0	44.4	2.6	2.3	-------	1.4	23.3	2.7	2.1	5.3	25.8	1.1	10.9

[1] Last job if unemployed.

[2] Since some persons indicated more than one way, sums of ways, when added to "No training needed," exceed 100.0 percent.

[3] Includes school (company training school only if training was full-time for at least 6 weeks), apprenticeship, and Armed Forces.

[4] Includes on-the-job instruction by supervisors or fellow workers, company training courses (part-time, or full-time for less than 6 weeks), and "worked way up by promotion."

[5] Includes "learned from friend or relative," "just picked it up," and other methods.

[6] Includes occupations not shown separately.

Table 12. Occupation Making Best Use of Training or Experience of Employed Persons, by Current Occupation Group and Sex, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college]

Current occupation group and sex	Job making best use				Occupation group of different job										
	Total	Current	Different	Not available	Total	Professional	Managers	Clerical	Sales	Craftsmen	Operatives	Private household	Service	Farm	Nonfarm laborers
MEN															
All occupation groups	100.0	78.5	8.2	13.3	100.0	9.5	5.4	7.5	2.7	35.4	19.2	-------	6.2	11.2	2.9
Professional, technical, and kindred workers	100.0	90.4	4.9	4.6	(1)	(1)	(1)	(1)	(1)	(1)	(1)	-------	(1)	(1)	(1)
Managers, officials, and proprietors, except farm	100.0	83.8	5.8	10.5	100.0	16.8	16.4	6.6	1.2	29.7	17.6	-------	2.0	9.0	.8
Clerical and kindred workers	100.0	78.7	10.8	10.6	100.0	13.2	7.2	17.9	3.8	26.4	15.3	-------	8.1	6.4	1.7
Sales workers	100.0	78.3	11.0	10.7	100.0	7.7	11.3	13.1	10.7	27.4	9.5	-------	15.5	4.8	-------
Craftsmen, foremen, and kindred workers	100.0	86.0	5.2	8.9	100.0	13.9	3.7	3.9	2.7	51.4	13.7	-------	2.0	5.6	3.2
Operatives and kindred workers	100.0	76.8	9.8	14.4	100.0	5.6	2.5	6.8	2.4	36.4	24.2	-------	4.3	15.7	2.1
Service workers, including private household	100.0	69.0	12.9	18.1	100.0	6.8	5.8	6.5	.7	36.4	17.7	-------	14.6	8.9	2.7
Farmers and farm managers	100.0	69.8	3.8	26.4	100.0	7.0	3.9	3.9	-------	27.9	24.0	-------	1.6	18.6	13.2
Farm laborers and foremen	100.0	67.4	8.6	24.0											
Laborers, except farm and mine	100.0	63.2	13.9	22.9	100.0	2.7	1.8	5.8	1.5	34.3	26.7	-------	7.9	14.0	5.2
WOMEN															
All occupation groups [2]	100.0	77.7	7.8	14.4	100.0	12.4	3.1	44.9	4.7	3.2	10.9	1.4	13.5	5.6	.3
Professional, technical, and kindred workers	100.0	88.7	5.4	5.9	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Managers, officials, and proprietors, except farm	100.0	77.6	8.3	14.1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Clerical and kindred workers	100.0	85.4	7.4	7.1	100.0	16.5	4.6	62.6	1.3	1.8	2.8	-------	4.9	4.4	1.0
Sales workers	100.0	72.4	11.3	16.4	100.0	5.1	3.2	61.1	7.6	3.2	9.6	-------	5.7	4.5	-------
Craftsmen, foremen, and kindred workers	100.0	85.4	4.5	10.1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Operatives and kindred workers	100.0	76.1	7.4	16.4	100.0	6.1	.9	36.8	7.4	6.1	22.9	1.7	13.0	5.2	-------
Private household workers	100.0	63.5	8.2	28.3	100.0	7.5	2.5	17.5	4.2	9.2	10.8	5.8	33.3	9.2	-------
Service workers, except private household	100.0	73.7	8.3	18.0	100.0	9.7	1.6	34.9	7.0	1.9	12.4	3.1	22.9	6.6	-------
Farm laborers and foremen	100.0	65.0	4.4	30.6	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

[1] Percent not shown where base is less than 100,000.

[2] Includes occupation groups not shown separately.

Table 13. Ways of Learning Occupation Which Made Best Use of Training or Experience for Persons Not Currently Doing That Kind of Work, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed less than 3 years of college]

Occupation group of job which made best use of training or experience	Total [1]		Ways in which occupation was learned									No training needed	Not available
	Number (in thousands)	Percent	Formal training			On-the-job learning			Casual methods				
			School	Apprenticeship	Armed Forces	On the job instruction	Company training course	Worked way up	From friend or relative	Picked it up	Other		
All occupation groups	4,350	100.0	31.3	8.9	11.6	38.1	10.3	14.8	10.7	24.1	6.2	2.3	5.9
Professional, technical, and kindred workers	457	100.0	57.8	8.5	19.9	31.1	7.4	13.8	4.6	16.6	12.7	-------	4.2
Managers, officials, and proprietors, except farm	193	100.0	25.9	6.7	6.2	38.3	7.8	36.3	18.1	39.9	6.2	5.7	8.3
Clerical and kindred workers	837	100.0	52.1	1.4	7.3	40.4	10.6	18.5	3.5	11.1	6.8	.8	4.2
Sales workers	156	100.0	9.6	6.4	3.2	40.4	18.6	17.9	7.7	26.9	7.7	1.9	10.3
Craftsmen, foremen, and kindred workers	1,064	100.0	29.0	21.0	20.9	33.3	10.0	13.5	11.7	26.5	4.1	.9	5.0
Operatives and kindred workers	771	100.0	10.6	7.1	4.0	54.3	12.5	12.3	6.0	25.7	3.0	3.9	5.1
Private household workers	21	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Service workers, except private household	360	100.0	35.8	3.9	13.1	34.4	12.8	8.3	17.2	24.7	5.6	3.3	7.8
Farmers, farm managers, and farm laborers and foremen	390	100.0	17.7	3.6	8.5	26.7	7.7	12.3	30.8	34.4	9.2	5.6	9.0
Laborers, except farm and mine	101	100.0	5.0	6.9	-------	38.6	-------	5.0	11.9	50.5	7.9	2.0	9.9

[1] Since some persons indicated more than one way, sums of ways, when added to "No training needed," exceed 100.0 percent.

[2] Percent not shown where base is less than 100,000.

Table 14. Use of College Training on Current Job,[1] by Major Field of Study, Years of College Completed, Age, and Sex, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed 3 years of college or more]

Major field of study, years of college completed, and age	Both sexes					Men					Women				
	Total		Using training	Not using training	Use not available	Total		Using training	Not using training	Use not available	Total		Using training	Not using training	Use not available
	Number (in thousands)	Percent				Number (in thousands)	Percent				Number (in thousands)	Percent			
THREE YEARS OF COLLEGE OR MORE															
Total, 22 to 64 years	8,691	100.0	78.9	19.1	2.0	6,057	100.0	79.1	19.1	1.8	2,634	100.0	78.4	19.1	2.5
Agriculture	211	100.0	68.2	31.8	-------	200	100.0	67.5	32.5	-------	11	(2)	(2)	(2)	(2)
Biological sciences	278	100.0	66.9	33.1	-------	191	100.0	74.3	25.7	-------	87	(2)	(2)	(2)	(2)
Business	1,543	100.0	86.0	13.9	.1	1,317	100.0	86.0	13.9	.2	226	100.0	86.3	13.7	-------
Education	1,949	100.0	82.3	17.5	.2	711	100.0	74.1	25.5	.4	1,238	100.0	87.0	13.0	-------
Engineering	1,110	100.0	89.5	10.4	.2	1,096	100.0	89.8	10.2	-------	14	(2)	(2)	(2)	(2)
Health sciences	756	100.0	92.6	6.9	.5	492	100.0	92.5	7.1	.4	264	100.0	92.8	6.4	.8
Humanities	894	100.0	68.0	31.8	.2	483	100.0	73.5	26.5	-------	411	100.0	61.6	38.0	.5
Physical sciences	363	100.0	75.8	24.2	-------	336	100.0	76.5	23.5	-------	27	(2)	(2)	(2)	(2)
Social sciences	617	100.0	63.7	36.3	-------	445	100.0	60.2	39.8	-------	172	100.0	72.7	27.3	-------
All other fields	818	100.0	76.5	21.3	2.2	695	100.0	77.1	20.3	2.6	123	100.0	73.2	26.8	-------
Not available	152	100.0	1.3	3.9	94.7	91	(2)	(2)	(2)	(2)	61	(2)	(2)	(2)	(2)
Total, 22 to 44 years	5,823	100.0	79.7	18.4	1.9	4,197	100.0	80.1	18.3	1.6	1,626	100.0	78.6	18.8	2.6
Agriculture	145	100.0	70.3	29.7	-------	136	100.0	69.9	30.1	-------	9	(2)	(2)	(2)	(2)
Biological sciences	216	100.0	74.5	25.5	-------	149	100.0	82.6	17.4	-------	67	(2)	(2)	(2)	(2)
Business	1,072	100.0	85.9	14.1	-------	917	100.0	86.2	13.8	-------	155	100.0	84.5	15.5	-------
Education	1,200	100.0	83.4	16.3	.2	505	100.0	76.0	23.4	.6	695	100.0	88.8	11.2	-------
Engineering	795	100.0	91.4	8.3	.3	783	100.0	92.0	8.0	-------	12	(2)	(2)	(2)	(2)
Health sciences	483	100.0	93.8	6.2	-------	304	100.0	91.8	8.2	-------	179	100.0	97.2	2.8	-------
Humanities	585	100.0	67.2	32.5	.3	342	100.0	71.9	28.1	-------	243	100.0	60.5	38.7	.8
Physical sciences	274	100.0	75.2	24.8	-------	251	100.0	75.7	24.3	-------	23	(2)	(2)	(2)	(2)
Social sciences	446	100.0	61.4	38.6	-------	322	100.0	57.5	42.5	-------	124	100.0	71.8	28.2	-------
All other fields	510	100.0	78.4	19.2	2.4	430	100.0	80.9	16.3	2.8	80	(2)	(2)	(2)	(2)
Not available	97	(2)	(2)	(2)	(2)	58	(2)	(2)	(2)	(2)	39	(2)	(2)	(2)	(2)
Total, 45 to 64 years	2,868	100.0	77.3	20.4	2.3	1,860	100.0	76.9	20.8	2.3	1,008	100.0	78.1	19.7	2.2
Agriculture	66	(2)	(2)	(2)	(2)	64	(2)	(2)	(2)	(2)	2	(2)	(2)	(2)	(2)
Biological sciences	62	(2)	(2)	(2)	(2)	42	(2)	(2)	(2)	(2)	20	(2)	(2)	(2)	(2)
Business	471	100.0	86.2	13.4	.4	400	100.0	85.5	14.0	.5	71	(2)	(2)	(2)	(2)
Education	749	100.0	80.5	19.5	-------	206	100.0	69.4	30.6	-------	543	100.0	84.7	15.3	-------
Engineering	315	100.0	84.4	15.6	-------	313	100.0	84.3	15.7	-------	2	(2)	(2)	(2)	(2)
Health sciences	273	100.0	90.5	8.1	1.5	188	100.0	93.6	5.3	1.1	85	(2)	(2)	(2)	(2)
Humanities	309	100.0	69.6	30.4	-------	141	100.0	77.3	22.7	-------	168	100.0	63.1	36.9	-------
Physical sciences	89	(2)	(2)	(2)	(2)	85	(2)	(2)	(2)	(2)	4	(2)	(2)	(2)	(2)
Social sciences	171	100.0	69.6	30.4	-------	123	100.0	67.5	32.5	-------	48	(2)	(2)	(2)	(2)
All other fields	308	100.0	73.4	24.7	1.9	265	100.0	70.9	26.8	2.3	43	(2)	(2)	(2)	(2)
Not available	55	(2)	(2)	(2)	(2)	33	(2)	(2)	(2)	(2)	22	(2)	(2)	(2)	(2)
THREE YEARS OF COLLEGE															
Total, 22 to 64 years	1,498	100.0	63.2	34.4	2.3	923	100.0	61.2	36.5	2.3	575	100.0	66.4	31.1	2.4
Business	346	100.0	76.9	22.5	.6	256	100.0	74.6	24.6	.8	90	(2)	(2)	(2)	(2)
Education	304	100.0	56.2	43.8	-------	92	(2)	-------	-------	-------	212	100.0	64.6	35.4	-------
Engineering	234	100.0	75.6	23.5	.9	230	100.0	76.1	23.9	-------	4	(2)	(2)	(2)	(2)
Health sciences	167	100.0	88.6	11.4	-------	42	(2)	(2)	(2)	(2)	125	100.0	92.8	7.2	-------
Humanities	160	100.0	40.0	58.8	1.2	81	(2)	(2)	(2)	(2)	79	(2)	(2)	(2)	(2)
All other fields	258	100.0	46.9	52.3	.8	203	100.0	45.3	53.7	1.0	55	(2)	(2)	(2)	(2)
Not available	29	(2)	(2)	(2)	(2)	19	(2)	(2)	(2)	(2)	10	(2)	(2)	(2)	(2)
Total, 22 to 44 years	970	100.0	63.6	34.0	2.4	619	100.0	60.9	37.6	1.5	351	100.0	68.4	27.6	4.0
Business	225	100.0	69.8	30.2	-------	163	100.0	66.3	33.7	-------	62	(2)	(2)	(2)	(2)
Education	175	100.0	55.4	44.6	-------	62	(2)	(2)	(2)	(2)	113	100.0	66.4	33.6	-------
Engineering	164	100.0	78.0	20.7	1.2	162	100.0	79.0	21.0	-------	2	(2)	(2)	(2)	(2)
Health sciences	104	100.0	93.3	6.7	-------	19	(2)	(2)	(2)	(2)	85	(2)	(2)	(2)	(2)
Humanities	101	100.0	46.5	51.5	2.0	61	(2)	(2)	(2)	(2)	40	(2)	(2)	(2)	(2)
All other fields	182	100.0	50.0	48.9	1.1	143	100.0	51.0	47.6	1.4	39	(2)	(2)	(2)	(2)
Not available	19	(2)	(2)	(2)	(2)	9	(2)	(2)	(2)	(2)	10	(2)	(2)	(2)	(2)
Total, 45 to 64 years	528	100.0	62.5	35.2	2.3	304	100.0	61.8	34.2	3.9	224	100.0	63.4	36.6	-------

See footnotes at end of table.

Table 14.—Use of College Training on Current Job,[1] by Major Field of Study, Years of College Completed, Age, and Sex, April 1963—Continued

Major field of study, years of college completed, and age	Both sexes					Men					Women				
	Total		Using training	Not using training	Use not available	Total		Using training	Not using training	Use not available	Total		Using training	Not using training	Use not available
	Number (in thousands)	Percent				Number (in thousands)	Percent				Number (in thousands)	Percent			
Four Years of College or More															
Total, 22 to 64 years	7,193	100.0	82.2	15.9	1.9	5,134	100.0	82.4	15.9	1.7	2,059	100.0	81.7	15.8	2.5
Agriculture	180	100.0	70.6	29.4	-------	173	100.0	70.5	29.5	-------	7	(2)	(2)	(2)	(2)
Biological sciences	250	100.0	69.6	30.4	-------	175	100.0	78.3	21.7	-------	75	(2)	(2)	(2)	(2)
Business	1,197	100.0	88.6	11.4	-------	1,061	100.0	88.7	11.3	-------	136	100.0	88.2	11.8	-------
Education	1,645	100.0	87.1	12.7	.2	619	100.0	79.6	19.9	.5	1,026	100.0	91.6	8.4	-------
Engineering	876	100.0	93.2	6.8	-------	866	100.0	93.4	6.6	-------	10	(2)	(2)	(2)	(2)
Health sciences	589	100.0	93.7	5.6	.7	450	100.0	94.0	5.6	.4	139	100.0	92.8	5.8	1.4
Humanities	734	100.0	74.1	25.9	-------	402	100.0	78.1	21.9	-------	332	100.0	69.3	30.7	-------
Physical sciences	327	100.0	78.9	21.1	-------	304	100.0	80.3	19.7	-------	23	(2)	(2)	(2)	(2)
Social sciences	543	100.0	67.6	32.4	-------	384	100.0	64.1	35.9	-------	159	100.0	76.1	23.9	-------
All other fields	729	100.0	79.1	18.7	2.2	628	100.0	79.1	18.3	2.5	101	100.0	79.2	20.8	-------
Not available	123	100.0	1.6	3.3	95.1	72	(2)	(2)	(2)	(2)	51	(2)	(2)	(2)	(2)
Total, 22 to 44 years	4,853	100.0	82.9	15.3	1.8	3,578	100.0	83.4	15.0	1.6	1,275	100.0	81.4	16.3	2.3
Agriculture	127	100.0	71.7	28.3	-------	120	100.0	71.7	28.3	-------	7	(2)	(2)	(2)	(2)
Biological sciences	190	100.0	78.4	21.6	-------	135	100.0	87.4	12.6	-------	55	(2)	(2)	(2)	(2)
Business	847	100.0	90.2	9.8	-------	754	100.0	90.4	9.6	-------	93	(2)	(2)	(2)	(2)
Education	1,025	100.0	88.2	11.5	.3	443	100.0	81.7	17.6	.7	582	100.0	93.1	6.9	-------
Engineering	631	100.0	94.9	5.1	-------	621	100.0	95.3	4.7	-------	10	(2)	(2)	(2)	(2)
Health sciences	379	100.0	93.9	6.1	-------	285	100.0	93.0	7.0	-------	94	(2)	(2)	(2)	(2)
Humanities	484	100.0	71.5	28.5	-------	281	100.0	76.2	23.8	-------	203	100.0	65.0	35.0	-------
Physical sciences	243	100.0	79.0	21.0	-------	224	100.0	80.4	19.6	-------	19	(2)	(2)	(2)	(2)
Social sciences	399	100.0	64.4	35.6	-------	279	100.0	60.2	39.8	-------	120	100.0	74.2	25.8	-------
All other fields	450	100.0	80.7	17.1	2.2	387	100.0	81.7	15.8	2.6	63	(2)	(2)	(2)	(2)
Not available	78	(2)	(2)	(2)	(2)	49	(2)	(2)	(2)	(2)	29	(2)	(2)	(2)	(2)
Total, 45 to 64 years	2,340	100.0	80.7	17.1	2.3	1,556	100.0	79.9	18.1	2.0	784	100.0	82.3	14.9	2.8
Business	350	100.0	84.9	15.1	-------	307	100.0	84.4	15.6	-------	43	(2)	(2)	(2)	(2)
Education	620	100.0	85.3	14.7	-------	176	100.0	74.4	25.6	-------	444	100.0	89.6	10.4	-------
Engineering	245	100.0	88.6	11.4	-------	245	100.0	88.6	11.4	-------	-------	(2)	(2)	(2)	(2)
Health sciences	210	100.0	93.3	4.8	1.9	165	100.0	95.8	3.0	1.2	45	(2)	(2)	(2)	(2)
Humanities	250	100.0	79.2	20.8	-------	121	100.0	82.6	17.4	-------	129	100.0	76.0	24.0	-------
Social sciences	144	100.0	76.4	23.6	-------	105	100.0	74.3	25.7	-------	39	(2)	(2)	(2)	(2)
All other fields	476	100.0	71.6	27.1	1.3	414	100.0	72.5	26.1	1.4	62	(2)	(2)	(2)	(2)
Not available	45	(2)	(2)	(2)	(2)	23	(2)	(2)	(2)	(2)	22	(2)	(2)	(2)	(2)

[1] Last job if unemployed.

[2] Percent not shown where base is less than 100,000.

Table 15. Ways of Learning Current Job[1] for Workers Not Using College Training, by Current Occupation Group, April 1963

[Percent distribution of civilian workers 22 to 64 years old who completed 3 years of college or more]

Current occupation group	Total not using college training	Ways of learning current job									No training needed
		Total, all methods[2]	College[3]	Trade or business school	Technical institute	Company training	Armed Forces	On the job	Other	Not available	
Total, all occupation groups	100.0	100.0	19.0	8.7	3.2	27.4	4.1	65.0	13.3	3.6	6.3
Professional, technical, and kindred workers	23.6	100.0	37.0	9.9	7.9	25.3	5.1	50.8	14.0	5.6	4.3
Managers, officials, and proprietors, except farm	24.0	100.0	18.1	6.8	2.0	31.7	3.8	80.9	15.6	2.3	1.5
Salaried workers	15.8	100.0	21.8	6.5	1.9	40.1	3.8	84.0	12.6	3.4	----------
Self-employed workers	8.2	100.0	11.0	7.4	2.2	15.4	3.7	75.0	21.3	1.5	4.4
Clerical and kindred workers	22.2	100.0	14.1	13.6	.5	27.2	2.4	74.2	10.6	1.9	2.4
Sales workers	11.2	100.0	9.2	3.8	3.8	40.0	1.1	53.0	16.8	2.7	15.1
Craftsmen, foremen, operatives, and kindred workers	9.8	100.0	7.4	9.8	3.7	25.2	10.4	65.0	11.0	5.5	8.0
All other occupations	9.2	100.0	11.2	3.9	.7	9.9	3.3	52.0	10.5	3.9	20.4

[1] Last job if unemployed.

[2] Since some persons indicated more than one way, sums of ways, when added to "No training needed," exceed 100.0 percent.

[3] Courses outside the major field.

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