# Work and Family: Employer-Provided Training Among Young Adults

Data from the National Longitudinal Surveys

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This issue of *Work and Family* examines employer-provided training among young persons over the 1986-90 period. About 20 percent of individuals aged 25-33 in 1990 received company training during the 5-year period. Men were more likely to get training than women, although much of this disparity stems from differences in weeks worked by men and women. There is no gender differential in receiving training among those with substantial labor force attachment. Both education and aptitude appear to have positive and independent impacts on the receipt of company training. Those who had employer-provided training spent about 24 hours per week in training for about 7 weeks. Among training recipients, the training for men lasted twice as long as that for women on average, and training among blacks lasted longer than that for whites or Hispanics.

## Overview

Much concern has recently arisen over sluggish productivity growth in the United States. Slow productivity growth is often attributed to a lack of investment in education and training. If this is true, improvements in education and worker training may help the United States to compete in the global market.

Although numerous studies examine the effects of education and governmental training programs, research into employer-provided training is extremely limited. This information gap about company training exists primarily because there is a lack of comprehensive and representative data on actual investment in training. Also, because much training occurs informally on the job, the extent of training often proves very difficult to measure. This report does not consider such informal training on the job.

The report presents information on employer-provided training using data from the Youth cohort of the National Longitudinal Surveys (NLS). These data describe a sample of young men and women who were between the ages of 14 and 22 in 1979 and who have been interviewed annually since that year. This survey contains some of the most comprehensive data currently available on training among young adults. Between the years of 1979 and 1986, the survey collected information about the occurrence and duration of all government-sponsored training programs and all privately supported training that lasted at least 4 weeks. In subsequent years, the training questions in the survey changed in order to ask respondents about all types of training (up to four programs) since the last interview, regardless of duration. Potential sources of training include business schools, apprenticeships, vocational and technical institutes, correspondence courses, company training, seminars outside of work, and vocational rehabilitation centers. These sources of training exclude any training received through formal schooling. It is important to emphasize that the measures of training do not capture informal training. Hence, any learning that occurs through methods such as observing coworkers, learning by doing, or speaking with supervisors is not measured here.

Between 1986 and 1990, the age range of the young workers in the sample changed from 21-29 to 25-33. The discussion focuses on who received training; the duration of training, as measured in weeks; and the intensity of training, as measured by hours per week. A comprehensive measure of total hours of employer-provided training over the time period is provided.

## Employer-provided training received

The lack of information on training prevents formation of a consensus on who actually receives company training.[1] Table 1 provides figures on the receipt of training by a variety of individual characteristics, namely sex, race and ethnicity, educational attainment, and score on the Armed Forces Qualifying Test (AFQT), which is taken to be a measure of aptitude. The AFQT score derives from selected sections of the Armed Services Vocational Aptitude Test (ASVAB), and ranges in value from 0 to 105. The Armed Forces consider an AFQT score as a measure of "trainability," and they use the score as a primary criterion of enlistment eligibility.

[1] For a summary, see Charles Brown, "Empirical Evidence on Private Training," in *Investing in People*, Background Papers, Vol. 1, Commission on Workforce Quality and Labor Market Efficiency, U.S. Department of Labor, Washington, DC, September 1989, pp. 301-330.

**Table 1. The receipt of company training from 1986 to 1990 among individuals age 21-29 in 1986**

| Characteristics | Entire cohort | Individuals who worked 200 or more weeks between the 1986 and 1990 interview dates[1] | |
|---|---|---|---|
| | Percent who received training | Percent who received training | Percent of total |
| **Total** | 20.4 | 23.9 | 58.2 |
| White | 21.3 | 24.3 | 61.2 |
| Black | 17.4 | 21.7 | 45.1 |
| Hispanic | 15.4 | 21.0 | 50.2 |
| Less than high school | 7.6 | 10.1 | 40.1 |
| High school graduate | 16.5 | 18.9 | 56.4 |
| Some college | 24.8 | 26.6 | 63.0 |
| College graduate | 30.6 | 33.9 | 66.8 |
| AFQT<50 | 7.6 | 9.8 | 42.4 |
| 50≤AFQT<65 | 16.1 | 18.9 | 50.6 |
| 65≤AFQT<80 | 21.1 | 24.2 | 60.7 |
| AFQT≥80 | 27.6 | 29.3 | 67.1 |
| **Men** | 22.3 | 22.8 | 67.0 |
| White | 23.2 | 23.2 | 70.7 |
| Black | 19.3 | 20.1 | 49.5 |
| Hispanic | 18.2 | 21.8 | 60.8 |
| Less than high school | 6.8 | 8.5 | 54.3 |
| High school graduate | 18.4 | 18.3 | 67.4 |
| Some college | 28.5 | 27.4 | 68.4 |
| College graduate | 33.4 | 33.2 | 72.1 |
| AFQT<50 | 8.1 | 9.4 | 52.6 |
| 50≤AFQT<65 | 18.3 | 18.3 | 61.8 |
| 65≤AFQT<80 | 23.2 | 22.9 | 70.7 |
| AFQT≥80 | 30.2 | 28.8 | 73.9 |
| **Women** | 18.4 | 25.4 | 49.3 |
| White | 19.4 | 26.0 | 51.5 |
| Black | 15.4 | 23.7 | 40.6 |
| Hispanic | 12.4 | 19.8 | 39.6 |
| Less than high school | 8.6 | 15.0 | 22.7 |
| High school graduate | 14.5 | 19.9 | 45.0 |
| Some college | 21.6 | 25.7 | 58.2 |
| College graduate | 27.6 | 34.8 | 61.3 |
| AFQT<50 | 7.1 | 10.2 | 29.6 |
| 50≤AFQT<65 | 14.1 | 19.7 | 40.7 |
| 65≤AFQT<80 | 19.2 | 25.9 | 51.7 |
| AFQT≥80 | 24.7 | 30.1 | 59.9 |

[1] Because the 1986 interviews were conducted primarily in the winter and spring, and the 1990 interviews occurred predominantly in the summer and fall, the maximum number of weeks worked between interview dates ranges from 234 to 260.

Source: National Longitudinal Survey of Youth

Acquisition of company training depends on decisions of both the firm and the individual worker. The receipt of training is also largely a function of labor force attachment, because those who spend more time working have more opportunities to receive training. Table 1 thus also indicates the receipt of training by those who worked 200 weeks or more over the 1986-90 timespan.

About one-fifth of the individuals in the cohort received company training between 1986 and 1990. This estimate of training is somewhat higher than suggested by previous research, but these other studies are usually restricted to training obtained through the current employer. Men were much more likely to receive employer-provided training than women (27 percent versus 19.4 percent). This finding is driven primarily by the low receipt of training among women who are not strongly attached to the labor force. The probability of receiving training among women who worked 200 weeks or more closely resembles that of men who worked 200 weeks or more.[2]

Whites were more likely to receive training than blacks, and blacks were more likely to receive training than Hispanics. The differential between blacks and Hispanics does not exist for those who worked 200 weeks or more. For the most part, more educated workers were more likely to receive training. In addition, the likelihood of receiving training increased with AFQT score.

## Amount of training received

Table 2 provides information on the duration (weeks), intensity (hours per week), and total hours spent in training for training recipients. Individuals who had em-

[2] Although the percentage of women who received training is greater than that for men among those who worked 200 weeks or more, this difference is not statistically significant at the 90-percent confidence level.

**Table 2. The amount of company training received from 1986 to 1990 among those who received company training for individuals age 21-29 in 1986**

| Characteristic | Average number of weeks in training | Average hours per week in training | Average number of hours in training[1] |
|---|---|---|---|
| **Total** | 7.0 | 23.6 | 183.5 |
| White | 6.8 | 23.4 | 178.2 |
| Black | 8.0 | 25.0 | 218.8 |
| Hispanic | 6.6 | 24.3 | 184.2 |
| Less than high school | 6.6 | 22.6 | 121.7 |
| High school graduate | 6.1 | 22.7 | 154.6 |
| Some college | 7.7 | 25.3 | 209.4 |
| College graduate | 7.3 | 23.3 | 202.0 |
| AFQT < 50 | 6.7 | 23.8 | 174.2 |
| 50 ≤ AFQT < 65 | 6.4 | 23.5 | 161.9 |
| 65 ≤ AFQT < 80 | 6.4 | 24.0 | 185.0 |
| AFQT ≥ 80 | 7.4 | 23.4 | 189.1 |
| **Men** | 7.8 | 27.0 | 241.1 |
| White | 7.4 | 26.9 | 234.4 |
| Black | 10.0 | 27.5 | 295.4 |
| Hispanic | 7.5 | 26.4 | 218.5 |
| Less than high school | 6.3 | 24.0 | 96.1 |
| High school graduate | 7.0 | 25.3 | 197.1 |
| Some college | 9.1 | 28.9 | 281.3 |
| College graduate | 7.8 | 27.7 | 275.5 |
| AFQT < 50 | 7.4 | 24.5 | 207.8 |
| 50 ≤ AFQT < 65 | 7.1 | 26.1 | 207.8 |
| 65 ≤ AFQT < 80 | 7.8 | 27.5 | 270.8 |
| AFQT ≥ 80 | 7.9 | 27.3 | 240.5 |
| **Women** | 5.9 | 19.4 | 112.0 |
| White | 6.1 | 19.0 | 109.9 |
| Black | 5.4 | 21.7 | 120.1 |
| Hispanic | 5.3 | 20.9 | 130.4 |
| Less than high school | 7.0 | 21.3 | 146.5 |
| High school graduate | 5.0 | 19.3 | 98.2 |
| Some college | 6.1 | 21.2 | 127.3 |
| College graduate | 6.7 | 17.7 | 108.2 |
| AFQT < 50 | 5.7 | 22.8 | 126.3 |
| 50 ≤ AFQT < 65 | 5.6 | 20.5 | 109.2 |
| 65 ≤ AFQT < 80 | 4.9 | 20.2 | 92.9 |
| AFQT ≥ 80 | 6.6 | 18.3 | 120.9 |

[1] Average total hours are calculated by taking the product of weeks and hours per week and computing the mean. Average total hours do not necessarily equal the product of average weeks and average hours per week.

Source: National Longitudinal Survey of Youth

ployer-provided training spent 7 weeks in training over the 5-year period on average. Men averaged about 2 weeks more in training than women. Interestingly, among men, blacks spent more weeks in training on average than whites or Hispanics. This finding results from the longer duration of training of black men, who typically received 10 weeks of training, whereas white and Hispanic men averaged about 7 weeks of training. In contrast, black women spent fewer weeks in training than white women and about the same number of weeks as Hispanic women.

Young persons with AFQT scores higher than 80 had longer durations of training than others. This result is mainly driven by women with scores above 80, who had longer durations of training than other women.

The intensity of employer-provided training, as measured by hours per week, averaged 23.6 for training recipients. Intensity varies substantially by gender; men spent over 7 hours more per week in training than women on average. Training intensity differs very little by any other characteristic.

Due to the small differences in training intensity, most of the differences in average total hours in training mirror the differences in weeks of training. Overall, individuals were provided, on average, 183.5 hours of company training.[3] Men averaged over twice as many hours in training as women, and blacks averaged more hours in training than whites and Hispanics. Among males, high school dropouts received considerably fewer hours of training than those with more education. Among females, Hispanics received more hours of training than blacks on average, and blacks spent more hours in training than whites.

Although the receipt of company training follows fairly clear patterns by race, education, and aptitude, the time spent in training does not follow these same patterns. Because the patterns of receipt of employer-provided training differ from the patterns of time spent in company training, the receipt of training and time spent in training should probably be considered as two distinct concepts.

## Education and aptitude

When examining training, researchers commonly face a problem in estimating the direct impact of education on training. The results from the previous section and from prior studies indicate that more educated workers are more likely to receive training. More educated workers, however, probably have a higher aptitude for training, and the information in table 1 indicates that high aptitude also correlates positively with the receipt of training. Consequently, the relationship between education and training may reflect the influence of both aptitude and education on training.

In an attempt to examine the differential effects of education and aptitude on training, table 3 displays the incidence of training by AFQT score within each educational category. The data indicate that the receipt of training is positively associated with aptitude within each educational category, and this implies that aptitude plays a role independent of schooling in the receipt of training. Still, education also appears to affect the receipt of training independently, given that for each AFQT level, those with more education are more likely to receive training. A complementary relationship apparently exists between training and both education and aptitude.

There appears to be no overall pattern in duration or intensity of training by AFQT levels within educational

[3] Average total hours are calculated by taking the product of weeks and hours per week and computing the mean. Average total hours do not necessarily equal the product of average weeks and average hours per week.

**Table 3. Variation in the receipt, use, and amount of company training received within educational category by AFQT score from 1986 to 1990 for individuals age 21-29 in 1986**

| Education/AFQT score | Percent who received training | Among those who received company training | | |
|---|---|---|---|---|
| | | Average number of weeks in training | Average hours per week in training | Average number of hours in training |
| **Less than high school** | 7.6 | 6.6 | 22.6 | 121.7 |
| AFQT<50 | 5.6 | 7.5 | 20.9 | 138.7 |
| 50≤AFQT<65 | 10.3 | 5.1 | 22.7 | 98.2 |
| 65≤AFQT<80 | 11.1 | 6.7 | 23.2 | 66.5 |
| AFQT≥80 | 13.9 | 7.0 | 32.6 | 230.9 |
| **High school graduate** | 16.5 | 6.1 | 22.7 | 154.6 |
| AFQT<50 | 7.9 | 5.4 | 26.1 | 151.5 |
| 50≤AFQT<65 | 15.0 | 5.8 | 22.2 | 119.6 |
| 65≤AFQT<80 | 18.6 | 6.1 | 21.8 | 170.2 |
| AFQT≥80 | 22.3 | 6.5 | 23.0 | 161.5 |
| **Some college** | 24.8 | 7.7 | 25.3 | 209.4 |
| AFQT<50 | 13.4 | 9.8 | 24.6 | 239.4 |
| 50≤AFQT<65 | 21.2 | 7.1 | 27.3 | 178.1 |
| 65≤AFQT<80 | 25.2 | 7.4 | 23.9 | 238.0 |
| AFQT≥80 | 27.4 | 7.8 | 25.3 | 191.2 |
| **College graduate** | 30.6 | 7.3 | 23.3 | 202.0 |
| AFQT<50 | 24.2 | 5.5 | 13.9 | 61.8 |
| 50≤AFQT<65 | 26.7 | 9.7 | 22.6 | 268.7 |
| 65≤AFQT<80 | 28.1 | 5.4 | 24.5 | 158.4 |
| AFQT≥80 | 31.3 | 7.5 | 23.2 | 199.8 |

Source: National Longitudinal Survey of Youth

category. High school dropouts with AFQT scores greater than 80, however, average many more hours of training than other dropouts. College graduates with AFQT scores below 50 average less than half as many hours of training as other college graduates. These findings provide some evidence that there are distinctions in total hours of training by aptitude within education levels.

## Related NLS research on training

Two recent research projects have used earlier years of the NLS Youth cohort to investigate the determinants and consequences of postsecondary training.[4] Both of these projects examined company training as well as a number of other forms of training. A study by Lisa Lynch shows that private sector training plays an important role in determining wages and wage growth for noncollege bound youth. In particular, training received from proprietary institutions appears to be useful for increasing wages. Lynch also finds that company training increases an individual's wages only in the firm providing the training, even for workers in their first jobs.

A group of studies conducted by James Heckman, Stephen Cameron, and Peter Schochet analyzes a variety of nonacademic training options available to young workers. The studies indicate that the economic rewards from private training are greater the longer the duration of training. The effect of 6 months of off-the-job training or training in the military is estimated to equal between 1 and 2 years of college education. The research also finds that those who complete their education with a high school equivalency degree obtained through the General Educational Development (GED) exam do no better in the labor market than high school dropouts with similar years of training.

[4] See Lisa Lynch, "The Impact of Private Sector Training on Race and Gender Wage Differentials and the Career Patterns of Young Workers," NLS Discussion Paper No. 8; and James Heckman, Stephen Cameron, and Peter Schochet, "The Determinants and Consequences of Public Sector and Private Sector Training," NLS Discussion Paper No. 15. For a copy of either of these reports, contact National Longitudinal Surveys according to the instructions given in the technical note.

## Technical Note

Data in this report are from the National Longitudinal Surveys (NLS), which the Bureau of Labor Statistics (BLS) sponsors. The Bureau contracts with the Center for Human Resource Research of The Ohio State University to manage the surveys and provide user services. The NLS were begun in the mid-1960's with the drawing of four samples: Young Men who were 14-24 years old as of January 1, 1966, Young Women who were 14-24 years old as of January 1, 1968, Older Men who were 45-59 years old as of January 1, 1966, and Mature Women who were 30-44 years old as of January 1, 1967. Each sample originally had about 5,000 individuals with oversamples of blacks. In the early 1980's, the Young Men and Older Men surveys were discontinued. The two women's surveys continue and are currently collected every 2 years. The Bureau of the Census undertakes the data collection for BLS.

In 1979, a new cohort was begun with a sample of over 12,000 young men and women who were 14-21 years of age as of January 1, 1979. It includes oversamples of blacks, Hispanics, economically disadvantaged whites, and youth in the military. The military oversample was discontinued after the 1984 survey, and the economically disadvantaged white oversample was discontinued after the 1990 survey. This survey is called the Youth cohort, and the cohort members have been interviewed every year since it began. The data collection for the Youth cohort is undertaken by NORC (National Opinion Research Center), a social science research center affiliated with the University of Chicago.

The data in this report are weighted so that the sample is representative of the age group studied. The sample includes those individuals who were respondents in 1990, and the 1990 sample weight is used. All inferences that are discussed in the text are statistically significant at the 90-percent confidence level. Due to sampling variability, small differences between estimates that are not discussed in the text should be interpreted with caution. For a detailed explanation of the NLS, see *NLS Handbook 1992* (Center for Human Resource Research, The Ohio State University) or *BLS Handbook of Methods* (U.S. Department of Labor, September 1992, Bulletin 2414). For information about the NLS, or to be placed on a mailing list for this publication, write to National Longitudinal Surveys, Bureau of Labor Statistics, Office of Research and Evaluation, 2 Massachusetts Ave., NE., room 4915, Washington, DC 20212-0001, or call (202) 606-7405.

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