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ABSTRACT

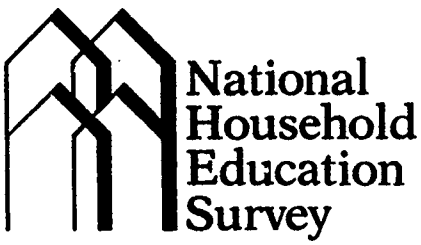
Data from the 1991 National Household Education Survey, which was a random telephone survey of the noninstitutionalized civilian population of the 50 states and District of Columbia, were analyzed to identify patterns of adult enrollment in employment-related training. The analysis established that one of every three employed individuals aged 17 years or older was enrolled in at least one job-related training course during the 12 months prior to spring 1991. The most frequently attended types of training courses were as follows: professional development (25%), technical or skilled job training (20%), executive or management development (13%), supervisory skills (12%), job health and safety (12%), word processing/computer software and quality or statistical process control (10%), sales and marketing (8%), and new employee (7%). Managers and professionals accounted for 56% of adults enrolled in job-related training programs. Holders of a baccalaureate or higher degree constituted 53% of those undertaking work-related training. Men and women were equally likely to enroll in some type of work-related training and were most likely to do so between the ages of 35 and 44 years. White enrollment in professional development courses tended to be higher than Hispanic enrollment. (Contains 12 tables/figures.) (MN)

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report **May 1994**

National Household Education Survey

Adult Education: Employment-Related Training



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May 1994

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Highlights

- One out of three employed adults enrolled in at least one job-related training course during the 12 months previous to the spring of 1991. The type of training most often cited was professional development (25 percent), followed by technical or skilled job training (20 percent), executive or management development (13 percent), supervisory skills (12 percent), and job health and safety (12 percent), both word processing and computer software and quality or statistical process control (10 percent), sales and marketng (8 percent), and new employee (7 percent).
- Managers and professionals were much more likely (56 percent) to enroll in any job-related training course than workers in other occupational categories.
- Holders of a baccalaureate degree and above were more likely (53 percent) to undertake job training than those with less than a college degree.
- As a whole, men and women were equally likely to enroll in some type of work-related training.
- Enrollment in work-related training peaked at mid-career, that is, between ages 35 to 44.
- Whites tended to enroll more in professional development than either blacks or Hispanics.

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Introduction

In an era of rapid technological change, workers are called upon to upgrade skills and even change careers several times during their working lives. Hence, workers need more training and retraining. Today, this demand for training is often met through various adult education classes which are supplied not only by educational institutions but also by employers in the workplace.

In a recent study[1] on adult education, it was reported that 32 percent of adults age 17 and over were enrolled in some type of part-time educational activity over a 12-month period, prior to the spring of 1991. It was also reported that the most frequently cited reason for participation in adult education was to improve, advance, and keep up-to-date in their jobs. This report was designed to further examine employed participants in adult education and determine in what types of training courses they enrolled.

The data for this study were drawn from the 1991 National Household Education Survey (NHES:91), administered by the National Center for Education Statistics (NCES), U.S. Department of Education. NHES:91 is a random-digit-dialing (RDD) telephone survey of the civilian, noninstitutionalized population of the 50 states and the District of Columbia. Details are presented in the Methodology and Data Reliability section.

All Employed Adults

In this report, adult education is defined as any *part-time* enrollment in any educational activity at any time in a specific 12-month period by individuals 17 years of age and older. The population of interest is *employed* adults age 17 and over. The employment status of these individuals was determined by their work status during the week of the survey.

Types of Training Courses

In NHES:91, each adult was first asked to give a main reason for enrolling in an adult education course. If the main reason was job-related, the person was then asked to indicate whether this course included any of the following nine types of employment- or career-related training:

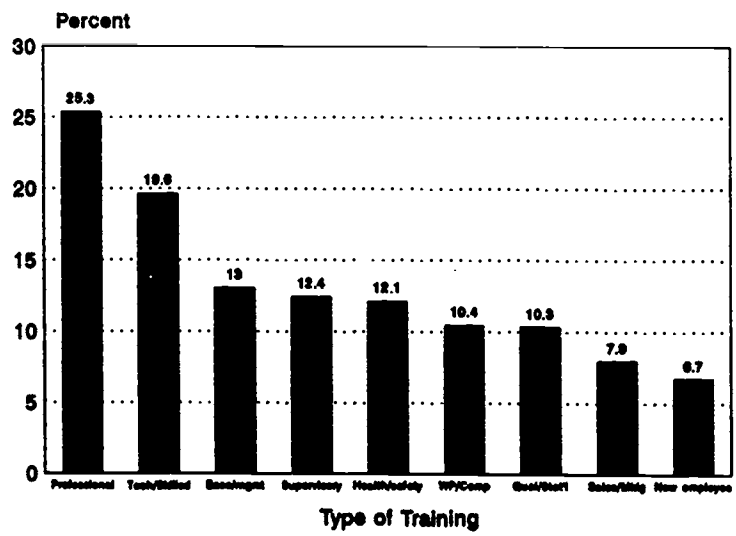
1. Professional development;
2. Technical or skilled job training;
3. Executive or management development;
4. Supervisory skills;
5. Job health and safety;
6. Word processing or computer software;
7. Quality or statistical process control;
8. Sales and marketing; and
9. New employee training.

Further clarification of the types of training was not given so respondents had to provide their own interpretation. Each person could report up to a maximum of four courses

(see Methodology and Data Reliability section), and for each course, multiple types of employment-related training could be reported. If a person gave a different type of employment-related training for each course, the person was counted in the calculation of the participation rate for each type of training reported. On the other hand, if a person gave the same type of employment-related training for all four courses, he or she was counted only once in the calculation of the participation rate for that type of job-related training.

Results of analyses revealed that about one out of every three (33 percent) *employed adults* enrolled in some type of adult education training that was related to his or her job during the 12 months preceding the survey which was taken in the spring of 1991 (table 1). Of the nine types of training, professional development was cited most often (25 percent). This was followed by technical or skilled job training (20 percent), executive or management development (13 percent), supervisory skills (12 percent), and job health and safety (12 percent). Ten percent of employed adults took training in both word processing and computer software and quality or statistical process control, 8 percent in sales and marketing, and 7 percent enrolled in new employee training (table 1 and figure 1).

Figure 1. Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by type of training: 1991



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 1.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by occupation: 1991

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total, 17 years and over	33.3	25.3	19.6	13.0	12.4	12.1	10.4	10.3	7.9	6.7	0.8
Managerial and professional specialty	55.7	46.9	29.7	24.8	22.5	15.5	16.6	15.7	10.6	8.2	1.3
Technical, sales, and administrative support	32.4	24.5	18.7	12.7	11.2	9.0	14.1	9.2	12.0	7.8	0.7
Service occupations	21.2	12.9	12.5	6.1	7.5	14.5	3.2	6.2	3.7	5.7	0.6
Precision production, craft, and repair	25.8	14.8	20.1	7.9	9.7	12.9	6.1	13.2	4.1	5.7	0.4
Operators, fabricators, and laborers	16.8	8.3	11.7	4.0	4.2	12.0	1.9	3.0	2.4	5.7	0.5

1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Differences by Occupation

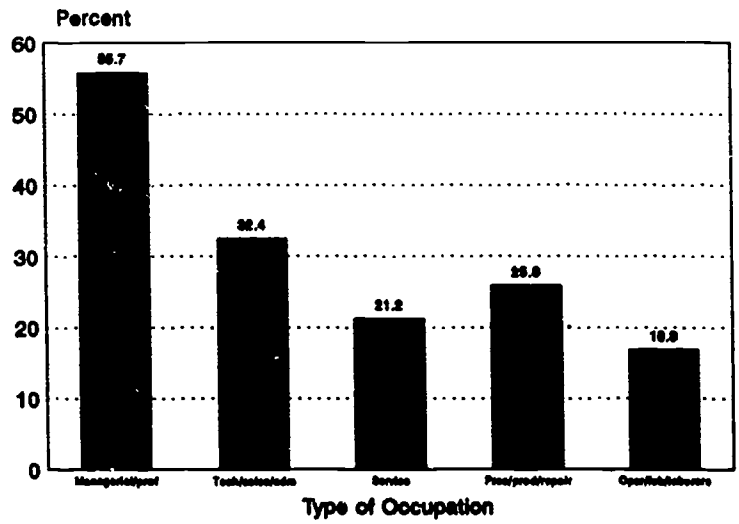
Occupations were classified into five categories:

1. Managerial and professional specialty;
2. Technical, sales, and administrative support;
3. Service occupations;
4. Precision production, craft, and repair; and
5. Operators, fabricators, laborers and workers in farming, fishing, and forestry.

See Methodology section for definitions.

Enrollment in employment-related training courses varied by occupation. Employed adults in the managerial and professional occupational category (56 percent) were much more likely to enroll in any job-related training than any of the other four occupational groups (table 1 and figure 2): technical, sales, and administrative support (32 percent); service occupations (21 percent); precision production, craft and repair (26 percent); and operators, fabricators, and laborers (17 percent).

Figure 2. Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by type of occupation: 1991



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

These disparities were very evident in four types of training: professional development, technical or skilled job training, executive or management development, and supervisory skills training. In fact, the probability that managers or professionals would enroll in professional development was almost twice as high as it was for technicians, salespersons, and clerks (49 vs. 25 percent). This pattern was repeated in executive or management development (25 vs. 13 percent) and supervisory skills training (23 vs. 11 percent).

Data also showed that technicians, salepersons, and clerks trained more than service workers, precision production, craft, and repair workers, and operators, fabricators and laborers in four kinds of work-related training: professional development, executive or management development, word processing or computer software, and sales or marketing (table 1).

With changing technology and the widespread use of the personal computer in industry, business, and government, white-collar[2] workers (as expected) enrolled in more word processing and computer software training than their blue-collar[2] counterparts. Seventeen percent of managers and professionals and 14 percent of technicians, salespersons and clerks enrolled in computer-related training. Percentage of enrollment in computer training was low in the service occupations (3 percent), precision production, and repair (6 percent) and operators, fabricators, and laborers (2 percent).

Differences by Educational Attainment, Sex, Age, and Race-Ethnicity

Differences by Educational Attainment and Occupation

For this analysis the level of education was classified into four categories: 1) less than high school, 2) high school diploma or its equivalent, 3) some postsecondary education, and 4) bachelor's degree and above. Each educational level was further subdivided into the five occupational categories.

There is a positive relationship between the level of education and enrollment in employment-related training. Adults with a baccalaureate degree and above (53 percent) were the most likely to take any job-related training (table 2). This group was followed by those who had some postsecondary education (38 percent), those who had a high school diploma or its equivalent (22 percent), and those who did not finish high school (9 percent). This finding is consistent with the finding of a RAND study on youth training in the United States, Great Britain, and Australia which concluded that, "in general, the probability of getting most kinds of formal training rises with the level of schooling attainment[3]."

In professional development, differences among the four groups were very significant. Forty-six percent of employed adults with at least a bachelor's degree and 5 percent of those with less than a high school education enrolled in professional development training.

This relationship persisted in two other types of training: executive or management training and supervisory skills. Interestingly, for both executive or management and supervisory skills training, the percentages were the same for the first three levels of educational attainment:

Table 2.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by educational attainment and occupation: 1991

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stati control	Sales/ mktg	New employee	Other
Total, educational attainment											
Less than high school	9.4	4.9	5.5	2.7	2.7	6.0	1.9	3.6	1.5	3.7	0.3
High school diploma or equivalent	22.1	13.2	14.3	7.4	7.4	10.5	5.9	6.9	4.7	5.0	0.5
Some postsecondary education	38.3	29.7	24.7	15.0	14.7	15.7	13.5	13.7	10.7	9.0	0.8
Bachelor's degree and above	52.7	45.7	26.8	22.6	20.8	12.4	16.5	13.9	11.7	7.7	1.3
Less than high school											
Managerial and professional specialty	*	*	*	*	*	*	*	*	*	*	*
Technical, sales, and administrative support	20.0	11.2	9.5	7.1	3.7	11.5	6.7	8.4	2.5	7.1	--
Service occupations	8.5	4.0	4.3	2.3	2.5	6.4	1.1	3.0	1.2	4.0	--
Precision production, craft, and repair	9.7	4.8	7.0	1.9	2.2	6.0	1.2	3.9	1.7	3.1	--
Operators, fabricators, and laborers	3.7	1.5	2.1	1.1	1.5	2.6	0.0	--	--	1.4	--
High school diploma or equivalent											
Managerial and professional specialty	38.7	29.4	19.6	22.0	13.0	11.2	10.2	9.9	4.9	6.3	0.7
Technical, sales, and administrative support	23.9	15.8	15.2	7.8	7.2	7.0	10.3	6.1	7.7	6.0	0.7
Service occupations	19.6	10.0	10.7	4.7	7.6	15.4	1.9	5.2	3.1	4.5	0.6
Precision production, craft, and repair	20.7	11.1	16.6	6.6	8.1	10.5	3.0	10.3	3.1	5.3	0.2
Operators, fabricators, and laborers	17.1	7.1	11.6	2.6	3.0	13.5	1.8	2.5	2.3	3.4	--

Table 2.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by educational attainment and occupation: 1991--Continued

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Some postsecondary education											
Managerial and professional specialty	50.8	44.5	31.3	23.3	22.9	22.5	14.0	17.6	12.3	9.3	1.2
Technical, sales, and administrative support	37.9	29.9	21.9	15.4	14.0	11.9	18.0	11.8	14.8	9.8	0.7
Service occupations	29.7	21.9	21.0	11.6	11.2	17.6	6.8	10.8	6.2	7.0	1.1
Precision production, craft, and repair	44.2	28.1	37.1	10.9	14.9	19.7	14.7	24.6	6.2	7.1	0.7
Operators, fabricators, and laborers	25.9	12.4	17.7	6.4	5.8	16.5	2.4	5.1	2.9	17.4	--
Bachelor's degree and above											
Managerial and professional specialty	61.8	55.1	31.3	26.3	24.3	13.6	19.2	16.2	11.1	8.0	1.5
Technical, sales, and administrative support	43.4	36.4	21.7	19.7	16.5	6.0	15.5	10.6	18.7	7.3	1.2
Service occupations	29.5	19.5	13.6	5.6	6.7	17.0	3.9	5.1	4.7	10.5	--
Precision production, craft, and repair	61.0	34.9	26.0	33.6	34.4	38.1	21.3	28.3	16.1	13.7	0.0
Operators, fabricators, and laborers	33.0	30.5	29.0	20.1	20.0	17.1	7.4	9.1	7.7	5.6	--

--Less than 0.05 percent.
*Too few sample observations for a reliable estimate.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

3 percent for less than high school,
7 percent for those with a high school diploma, and
15 percent for those with some postsecondary school experience.

In technical or skilled job training, as expected, workers with the lowest level of schooling were the least likely to enroll. In word processing and computer software training, the percentage of enrollment rose with the level of education, from 2 percent to 17 percent. However, the difference of three percentage points between the two highest levels of schooling was not significant.

When the four levels of education were analyzed separately, some significant differences showed among employed individuals with at least a high school diploma.

It was more probable for managers and professionals, and technicians, and salespersons, and clerks (each 10 percent) who completed a high school education to enroll in computer training than the other three types of occupation (table 2).

As expected, managers and professionals with some postsecondary school experience were more likely to undertake professional development than any of the other four occupational categories. In addition, even with the same level of education, managers and professionals were more likely than their counterparts holding technical, sales, or clerical positions to enroll in job health and safety, supervisory, or technical and skilled job training.

More than six out of ten (62 percent) managers and professionals with a bachelor's degree and above took at least one employment-related training. It was only 43 percent for technicians, salespersons, and clerks. This relationship was found in four types of training: professional development, technical or skilled job training, supervisory training, and job health and safety.

Differences by Sex and Occupation

As a whole, men (33 percent) and women (34 percent) were equally likely to enroll in any type of work-related training (table 3).

However, men tended to train more than women in quality and statistical process control, technical or skilled job training, and executive or management development.

When employed adults were grouped according to their occupation only a few differences were shown between the sexes. For example, male technicians, salespersons, and clerks were more likely to train in executive or management development, supervisory skills training, and sales and marketing than their female counterparts. While 22 percent of men in precision production, craft and repair jobs took technical or skilled job training, only 12 percent of the women did.
When men and women were analyzed separately, very significant differences emerged among the occupational categories. Both men (48 percent) and women (50 percent) managers and professionals showed a higher probability of enrolling in professional development

Table 3.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by sex, and occupation: 1991

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stati control	Sales/ mktg	New employee	Other
Total	33.3	25.3	19.6	13.0	12.4	12.1	10.4	10.3	7.9	6.7	0.8
Men	33.1	24.8	21.5	14.1	13.4	12.2	9.8	11.9	8.5	6.1	0.5
Women	33.5	26.0	17.6	11.8	11.4	11.9	11.0	8.6	7.3	7.4	1.0
Men											
Managerial and professional specialty	55.2	48.0	32.2	28.0	23.9	12.9	17.4	17.4	12.2	7.7	0.9
Technical, sales, and administrative support	36.9	28.5	21.1	16.7	14.7	9.9	15.0	12.2	18.5	8.4	0.5
Service occupations	19.3	13.8	14.2	6.4	8.4	13.7	3.2	7.9	3.1	4.0	0.3
Precision production, craft, and repair	27.3	15.8	21.7	8.4	10.3	13.8	6.4	14.0	4.2	5.1	0.4
Operators, fabricators, and laborers	17.0	8.0	12.5	4.3	4.5	12.8	1.9	2.9	1.7	5.1	0.4
Women											
Managerial and professional specialty	56.2	49.7	27.1	21.5	21.1	18.1	15.8	14.1	9.0	8.6	1.7
Technical, sales, and administrative support	30.3	22.6	17.5	10.8	9.6	8.6	13.7	7.7	9.0	7.5	0.8
Service occupations	22.4	12.4	11.4	5.9	7.0	15.0	3.2	5.2	4.1	6.8	0.8
Precision production, craft, and repair	18.1	10.0	11.6	5.2	6.8	8.6	4.3	9.0	3.3	8.5	--
Operators, fabricators, and laborers	16.2	9.1	8.5	2.6	3.0	8.9	1.7	3.0	5.1	8.1	--

--Less than 0.05 percent.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

than men or women in the four other types of occupations. This pattern was repeated in technical or skilled job training, executive or management development, and supervisory skills training. It is interesting to note that in word processing and computer software the relationship among the occupational groups was the same for both men and women.

Differences by Age and Occupation

Enrollment in job-related training started low at 17 percent for those workers ages 17 to 19, peaked at ages 35 to 44 (40 percent) and dropped to 17 percent at age 65 and over (table 4). This pattern was repeated in all the different types of training.

Employed adults at ages 35 to 44 (31 percent) and 25 to 34 (26 percent) were more likely to enroll in professional development than the 20- to 24-year-old cohort (19 percent). This relationship between these three groups persisted in technical and skilled job training.

When age groups were compared, some significant differences showed when older age groups were compared with the youngest cohort, 17 to 19 years old. This was expected. Younger workers are more interested in exploring the labor market than in job training. The majority of them are not firmly attached to the workplace and tend to hold temporary or part-time work.

When each age group was analyzed separately, differences among the five occupational categories were evident. Managers and professionals, ages 20 to 54, enrolled more (50 to 61 percent) in any job-related training than any of the four other types of occupation. As would be expected, this pattern was repeated in professional development and supervisory skills training. Again, it is interesting to note that in computer-related training no significant differences showed between the categories of managerial and professional specialities and technical, sales, or clerical workers.

Differences by Race-ethnicity and Occupation

Whites[4] (27 percent) tended to enroll more in professional development than either blacks or Hispanics (both 19 percent) during the 12 months previous to the spring of 1991 (table 5). One fourth of white technicians, salespersons, and clerks were trained in professional development compared to only 16 percent for blacks.

Although there were few marked differences among the three racial groups, significant differences among the five occupational groups did occur when race-ethnicity was used as a control variable. As a whole, for whites, managers and professionals were more likely to participate in any employment-related training than the other four occupational groups. The percentage of enrollment of white managers and professionals for professional development (50 percent) was higher than any of the other four types of occupation. This pattern was repeated for technical and skilled job training, executive and management development, and supervisory training. Again, in

Table 4.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total	33.3	25.3	19.6	13.0	12.4	12.1	10.4	10.3	7.9	6.7	0.8
17-19 years	17.4	12.1	9.4	4.1	4.7	9.3	5.1	4.0	7.5	11.1	0.8
20-24 years	26.9	19.2	15.1	10.2	10.9	12.6	8.5	9.8	7.1	10.4	0.4
25-34 years	34.9	26.4	20.9	13.2	13.8	13.2	11.2	11.7	9.2	8.0	0.9
35-44 years	40.0	30.8	23.6	16.1	14.4	13.3	11.9	11.8	8.5	5.6	0.8
45-54 years	31.7	25.1	18.7	12.5	12.3	10.2	11.6	9.8	7.4	4.0	0.9
55-64 years	28.5	22.5	17.1	12.7	9.7	10.8	7.4	7.3	5.1	5.4	0.6
65 years and over	16.5	9.2	8.3	3.9	3.5	4.3	2.7	2.2	2.5	4.1	0.7
17-19 years old											
Managerial and professional specialty	3.6	2.5	--	0.0	--	1.7	0.0	0.0	0.0	--	0.0
Technical, sales, and administrative support	23.8	19.2	11.5	5.2	5.6	11.2	8.6	4.0	10.4	16.9	0.8
Service occupations	17.1	8.8	9.2	4.8	4.4	12.2	3.9	5.6	9.8	10.7	--
Precision production, craft, and repair	11.2	3.8	9.4	--	5.6	3.7	--	5.6	--	3.0	--
Operators, fabricators, and laborers	11.7	8.9	9.0	--	--	8.8	--	--	--	7.1	0.0
20-24 years old											
Managerial and professional specialty	50.2	42.8	22.2	25.0	24.7	22.7	17.4	19.1	13.2	22.4	--
Technical, sales, and administrative support	25.6	17.8	14.8	8.2	7.8	8.1	9.8	7.9	8.4	9.2	0.6
Service occupations	20.1	11.2	10.7	7.8	9.9	14.4	4.5	7.1	5.5	8.7	--
Precision production, craft, and repair	25.4	18.2	21.8	7.8	7.5	14.0	5.9	14.9	3.8	9.6	0.9
Operators, fabricators, and laborers	17.7	6.2	8.1	3.3	9.8	14.3	--	3.5	2.9	4.6	0.0

Table 4.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991--Continued

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
25-34 years old											
Managerial and professional specialty	53.2	46.3	29.8	21.4	21.1	14.6	17.4	16.5	10.0	10.8	1.3
Technical, sales, and administrative support	34.5	25.8	19.2	14.0	13.0	9.9	14.9	10.3	13.4	8.0	1.0
Service occupations	33.4	20.1	18.6	7.9	13.1	25.7	3.6	9.5	5.7	7.1	1.2
Precision production, craft, and repair	27.7	16.9	22.1	9.8	12.4	12.7	6.9	13.6	7.4	8.0	--
Operators, fabricators, and laborers	12.1	7.0	7.3	3.8	2.2	7.3	2.4	3.5	2.3	4.4	--
35-44 years old											
Managerial and professional specialty	61.4	54.2	32.7	29.5	25.1	15.2	17.5	16.6	12.7	6.0	1.7
Technical, sales, and administrative support	36.4	27.4	21.5	14.7	12.6	8.4	15.3	10.0	12.2	6.1	0.5
Service occupations	22.0	13.8	14.1	5.7	4.9	12.1	4.5	6.0	1.9	5.7	0.5
Precision production, craft, and repair	32.9	18.3	23.4	8.0	10.0	19.7	7.0	15.6	3.0	5.4	--
Operators, fabricators, and laborers	22.2	9.7	19.1	4.3	5.2	17.7	2.1	3.9	2.6	5.0	--
45-54 years old											
Managerial and professional specialty	54.1	47.6	30.1	21.5	23.1	15.7	16.7	14.4	9.8	3.8	1.2
Technical, sales, and administrative support	31.7	25.0	17.3	13.7	10.0	7.2	17.0	8.7	13.0	6.6	1.1
Service occupations	18.3	12.2	12.4	7.9	8.3	12.7	2.1	5.6	2.9	3.5	--
Precision production, craft, and repair	18.3	11.0	14.6	5.7	7.3	8.4	5.8	11.6	1.7	2.7	0.6
Operators, fabricators, and laborers	10.2	6.6	7.8	4.0	3.8	7.3	1.7	2.1	2.6	1.9	--

Table 4.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991--Continued

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
55-64 years old											
Managerial and professional specialty	60.8	55.4	28.0	32.0	19.2	15.0	14.0	13.5	6.5	7.1	1.4
Technical, sales, and administrative support	29.2	23.1	20.2	11.5	11.1	11.8	12.7	8.7	10.7	7.5	--
Service occupations	6.8	4.7	2.8	2.6	2.5	3.2	--	1.8	1.0	1.2	--
Precision production, craft, and repair	12.6	3.8	9.8	7.0	7.9	4.5	2.0	8.2	1.1	0.9	0.0
Operators, fabricators, and laborers	40.6	23.2	38.2	7.6	6.4	35.1	--	1.7	2.2	16.4	--
65 years and over											
Managerial and professional specialty	42.7	34.9	20.2	14.5	13.5	17.9	8.2	9.8	5.2	5.9	2.3
Technical, sales, and administrative support	28.1	20.1	14.7	8.2	8.8	--	10.1	--	15.2	4.6	--
Service occupations	*	*	*	*	*	*	*	*	*	*	*
Precision production, craft, and repair	*	*	*	*	*	*	*	*	*	*	*
Operators, fabricators, and laborers	*	*	*	*	*	*	*	*	*	*	*

--Less than 0.05 percent.
*Too few sample obeservations for a reliable estimate.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 5.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by race-ethnicity, and occupation: 1991

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total	33.3	25.3	19.8	13.0	12.4	12.1	10.4	10.3	7.9	6.7	0.8
White, non-Hispanic	35.4	26.9	20.4	13.1	12.5	12.0	10.6	10.3	8.0	6.3	0.8
Black, non-Hispanic	23.6	19.3	15.4	13.2	13.1	11.4	9.9	9.8	7.3	7.8	0.6
Hispanic	27.4	19.2	18.0	12.1	12.3	14.3	8.7	11.4	8.6	10.1	0.5
White, non-Hispanic											
Managerial and professional specialty	57.2	50.0	30.2	24.8	22.2	15.2	16.4	15.5	10.9	7.4	1.3
Technical, sales, and administrative support	33.6	25.3	18.7	12.3	10.9	8.6	13.8	8.8	12.4	7.8	0.8
Service occupations	25.1	14.7	13.9	6.5	7.6	16.4	4.1	7.2	4.2	6.5	0.8
Precision production, craft, and repair	26.1	14.9	20.2	7.0	9.2	12.6	6.1	13.1	3.1	4.2	0.3
Operators, fabricators, and laborers	17.3	8.8	12.1	3.7	4.6	12.2	2.1	2.8	1.8	4.5	0.5
Black, non-Hispanic											
Managerial and professional specialty	46.0	43.2	22.9	27.4	27.5	17.2	18.7	16.8	10.1	15.4	1.3
Technical, sales, and administrative support	20.9	15.9	16.1	11.9	10.9	8.1	11.2	9.0	8.8	7.1	0.5
Service occupations	13.2	9.3	9.3	6.6	6.7	11.7	1.4	5.5	3.3	5.0	0.3
Precision production, craft, and repair	20.2	9.5	17.2	5.9	8.2	11.3	5.4	8.6	4.2	7.8	--
Operators, fabricators, and laborers	6.6	4.8	3.6	2.2	1.7	4.9	2.3	2.1	1.4	2.0	--

Table 5.--Percentage of employed adults who took at least one employment-related training course during the previous 12 months, by race-ethnicity, and occupation: 1991--Continued

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stati control	Sales/ mktg	New employee	Other
Hispanic											
Managerial and professional specialty	47.8	41.3	29.4	23.9	21.2	17.2	15.3	18.8	8.3	8.3	--
Technical, sales, and administrative support	36.8	29.1	20.1	16.3	15.4	15.0	20.3	13.7	14.1	10.2	0.5
Service occupations	17.6	12.6	13.4	5.6	11.1	13.1	2.0	4.0	3.0	4.5	--
Precision production, craft, and repair	27.1	16.8	20.3	14.6	14.2	15.7	7.4	18.7	11.9	14.9	1.0
Operators, fabricators, and laborers	24.8	8.6	17.2	7.4	3.7	18.1	--	6.6	7.0	17.8	0.0

--Less than 0.05 percent.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

computer-related training there was no significant difference between managers and technicians.

Like whites, more black managers and professionals tended to enroll in classes (43 percent) to improve and update their professional skills than their counterparts in the other four occupational groups. Although this pattern showed among Hispanics, the difference between managers and technicians was not significant.

Summary

Data show that the level of educational attainment and type of occupation are related to enrollment in employment-related training. They also show that enrollment in work-related training peaked during the mid-career of individuals.

A few differences by sex, age, and race-ethnicity emerged. However, after controlling for these variables, in general, the probability for taking any work-related training was greater for managers and professionals than all the other occupational groups. The high level of attendance reported by these white-collar workers reflect the new demands in the workplace, particularly in an office environment.

It is evident in this study that workers with higher levels of education who tend to have high-paying jobs, are more likely to enroll in some form of job training than those who have less schooling. This analysis implies that those members of society who may need more training or retraining are less likely to enroll in courses that may compensate for their educational deficiencies. This phenomenon does not help them in the labor market and, in fact, tends to widen the income gap between the less and more educated.

Notes

[1]Chan Kopka, T.L., and Peng, S.S. *Adult Education: Main Reasons for Participating,* Washington, DC, U.S. Department of Education, National Center for Education Statistics, 1993.

[2]White-collar workers are included in the managerial and professional specialty, and in the technical, sales, and administrative support occupations; blue-collar workers are included in precision production, craft, and repair, and in the operators, fabricators, and laborers occupations. Two other kinds of workers are service workers and workers in farming, forestry, and fishing.

[3]Tan, H., Chapman, B., Peterson, C., and Booth, A., *Youth Training in the United States, Britain, and Australia,* RAND, R–4022–ED and U.S. Department of Education, Washington DC, pp. 14-15, 1991.

[4]In this report, both white and black include only non-Hispanic.

Methodology and Technical Notes

The NHES:91 is a telephone survey conducted by NCES. The survey is designed to be representative of all civilian, noninstitutionalized persons in the 50 states and the District of Columbia. The sample is selected using random-digit-dialing (RDD) methods and data are collected using computer-assisted telephone interviewing (CATI) technology.

The NHES:91 included two survey components: an early childhood (EC) survey of children 2 to 9 years old and an adult education (AE) survey of persons 16 years of age and older. In this report 16-year-olds were excluded from the analysis. Two different survey instruments were used to collect data for the AE component. The first instrument, a household screener administered to an adult member of the household, was used to enumerate each adult over the age of 15, including those living away from home in school housing. The screener respondent was asked a series of questions about each adult's educational participation over the past 12 months. Adults currently enrolled as full-time high school or elementary students were not sampled. Part-time AE participants were included with certainty, full-time students were sampled at a rate of 50 percent, and nonparticipants were sampled at a rate of about 8 percent.

The participation status determined from the screener was used for sampling purposes only. Once an adult was sampled for an interview, that person's responses were used to determine participation status, rather than information provided in the screener. The interview covered all forms of participation in educational activities over the 12 months prior to the interview. For courses taken on a part-time basis, some of the data collected were on types and sponsorship of courses, main reasons for enrolling, and benefits of and barriers to participation. If a respondent reported that the main reason for enrolling in a certain course was employment-related, he or she was asked to indicate if this course included any of the nine given types of job-related training. Each participant was asked questions for each course attended during the previous 12 months, (up to a maximum of four courses).

Around 15 percent of adult education participants reported that they enrolled in more than four courses. Since a respondent can describe up to four courses only, other courses taken after the fourth course are not included in this analysis. However, an examination of distribution of participation rates by type of training, based on information from one to four courses reported by respondents, revealed that the distribution based on three courses is not different from the distribution based on four courses. This indicates that participation rates by the type of training based on information on four courses is likely to be consistent with the participation rates based on all courses if they were available.

The distribution of the participation rates by number of courses is shown below.

	Total	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Qual/ stat cont'l	Sales/ mktg	New emp
					(in percent)					
One	31.4	22.0	16.4	10.3	9.7	9.8	7.5	7.7	6.4	5.3
1–2	32.8	24.6	18.7	12.1	11.5	9.8	9.3	9.1	7.4	5.3
1–3	33.1	25.1	19.4	12.6	12.1	11.7	10.0	9.7	7.8	6.5
1–4	33.3	25.3	19.6	13.0	12.4	12.1	10.4	10.3	7.9	6.7

Definitions of Occupational Categories

Managerial and professional specialty
Includes: executive, administrative, managerial and professional specialty.

Technical, sales, and administrative support
Includes: technicians and related support, sales occupations, administrative support including clerical.

Service occupations
Includes: private household, protective service, and all other service workers.

Precision production, craft, and repair
Includes: mechanics and repairers, construction trades, and other precision production, craft, and repair.

Operators, fabricators, and laborers
Includes: machine operators, assemblers, and inspectors, transportation and material moving operations, handlers, equipment cleaners, helpers, laborers, and workers in farming, forestry, and fishing.

Response Rates

In NHES:91, the household screener response rate was 81 percent. Based on the screener, a total of 14,226 adults were sampled. Of these, 32 were ineligible and 12,568 were interviewed. The weighted completion rate of the adult interview (AE) was 84.7 percent. The overall weighted response rate for the adult education component was 69 percent (the product of the household screening response rate and the AE interview completion rate).

Data Reliability

Estimates produced using NHES:91 data are subject to two types of error, sampling and nonsampling. Sampling errors occur because the data are collected from a sample rather than a census of a population. Nonsampling error is the term used to describe variations in the estimates which may be caused by coverage, data collection, or data processing.

Sampling Errors

The sample of telephone households selected for the NHES is just one of many possible samples that could have been selected. Therefore, estimates produced from the NHES sample may differ from estimates that would have been produced from other samples. This type of variability is called sampling error because it arises from using a sample of households with telephones, rather than all households with telephones.

Nonsampling Errors

Nonsampling errors can be attributed to many sources-e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness of the respondents to provide correct information, inability to recall information, errors made in processing the data, and errors made in estimating values for missing data.

In general, it is difficult to identify and estimate either the amount of nonsampling error or the bias caused by this error. However, in the NHES survey, efforts were made to prevent nonsampling errors from occurring and to compensate for it where possible. For instance, during the survey design phase, which entailed over 500 hours of CATI instrument testing and a pretest with over 200 households, efforts were made to check for consistency of interpretation of items and to eliminate ambiguity in items.

An important nonsampling error for a telephone survey is the failure to include persons who do not live in households with telephones. About 93 percent of all adults live in households with telephones. Estimation procedures were used to help reduce the bias in the estimates associated with adults who did not live in households with telephones.

Standard Errors

Standard errors for some of the major variables in this report are presented in tables 6, 7, 8, 9 and 10. These standard errors can be used to produce confidence intervals. For example, an estimated 33.3 percent of employed adults enrolled in at least one employment-related training during the 12 months prior to the survey. This figure has an estimated standard error of 0.96 percent. Therefore, the estimated 95 percent confidence interval for this statistic is approximately 31.4-35.2 percent (33.3 percent plus/minus 1.96 times 0.96).

All differences cited in the text of this report are significant at the 0.05 level of significance. Where applicable, Bonferroni adjustments for multiple comparisons were used.

Table 6.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months by occupation: 1991

(table 1)

Occupation	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ statl control	Sales/ mktg	New employee	Other
Total, 17 years and over	0.96	0.85	0.75	0.54	0.57	0.61	0.56	0.48	0.39	0.35	0.09
Managerial and professional specialty	1.69	1.66	1.47	1.37	1.16	0.96	1.28	0.96	0.83	0.80	0.25
Technical, sales, and administrative support	1.67	1.40	1.13	0.85	0.75	0.72	0.92	0.62	0.83	0.74	0.12
Service occupations	2.25	1.43	1.42	0.79	1.12	2.01	0.71	1.04	0.48	0.98	0.12
Precision production, craft, and repair	1.67	1.30	1.83	0.82	1.17	1.02	0.96	1.29	0.66	0.81	0.11
Operators, fabricators, and laborers	2.64	1.79	2.72	0.88	1.18	2.29	0.47	0.88	0.69	1.48	0.24

1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 7.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by educational attainment, and occupation: 1991
(table 2)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total, educational attainment											
Less than high school	1.26	0.92	0.96	0.78	0.56	1.12	0.64	0.87	0.38	0.76	0.15
High school diploma or equivalent	1.29	1.09	1.09	0.88	0.72	1.05	0.54	0.66	0.50	0.46	0.09
Some postsecondary education	1.92	1.74	1.45	1.05	0.98	1.18	1.15	1.03	1.00	0.88	0.14
Bachelor's degree and above	1.89	1.69	1.60	1.15	1.14	0.91	1.48	1.14	0.79	0.84	0.25
Less than high school											
Managerial and professional specialty	*	*	*	*	*	*	*	*	*	*	*
Technical, sales, and administrative support	6.47	4.97	4.77	4.47	1.60	5.53	4.70	4.55	1.31	4.47	--
Service occupations	2.10	1.34	1.40	0.92	1.02	1.76	0.50	1.12	0.57	1.27	--
Precision production, craft, and repair	2.57	1.93	2.29	0.62	0.64	1.88	0.56	1.90	0.63	1.15	--
Operators, fabricators, and laborers	1.27	0.86	0.97	0.71	0.85	1.18	0.00	--	--	0.85	--
High school diploma or equivalent											
Managerial and professional specialty	5.55	6.60	3.78	6.57	2.00	1.97	2.41	1.86	1.07	1.34	0.30
Technical, sales, and administrative support	1.62	1.27	1.29	0.79	0.73	0.89	0.88	0.49	0.73	0.90	0.22
Service occupations	3.41	1.84	2.09	1.00	2.02	3.47	0.58	1.28	0.62	0.78	0.27
Precision production, craft, and repair	2.58	1.73	2.32	1.58	1.69	1.58	0.64	1.83	1.28	1.36	0.09
Operators, fabricators, and laborers	3.77	2.49	4.36	0.95	1.55	3.51	0.61	0.97	1.11	1.24	--

Table 7.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by educational attainment, and occupation: 1991--Continued
(table 2)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Some postsecondary education											
Managerial and professional specialty	3.99	3.57	2.72	2.84	2.54	2.68	2.27	2.02	2.21	1.86	0.30
Technical, sales, and administrative support	2.76	2.43	1.86	1.56	1.51	1.44	1.57	1.37	1.67	1.42	0.21
Service occupations	3.93	3.53	3.06	2.29	2.06	2.74	2.16	2.56	1.52	1.66	0.36
Precision production, craft, and repair	4.66	4.01	4.46	1.84	2.77	3.06	3.43	3.40	2.06	1.38	0.32
Operators, fabricators, and laborers	8.05	3.72	6.23	2.05	1.88	5.91	1.32	1.55	1.00	6.85	--
Bachelor's degree and above											
Managerial and professional specialty	2.06	2.11	1.59	1.57	1.50	1.13	1.95	1.54	1.12	0.97	0.33
Technical, sales, and administrative support	4.09	3.56	2.97	2.25	2.28	1.06	2.63	2.22	2.81	1.89	0.36
Service occupations	9.18	8.40	5.16	2.30	2.54	5.78	1.39	2.14	2.11	7.13	--
Precision production, craft, and repair	11.78	8.15	7.35	9.16	10.41	12.13	8.86	8.11	7.46	3.86	0.00
Operators, fabricators, and laborers	11.48	11.01	10.53	8.36	8.65	6.58	2.70	4.95	3.12	3.16	--

*Too few sample observations for a reliable estimate.
--Less than 0.05 percent.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 8.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by sex, and occupation: 1991

(table 8)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total	0.96	0.85	0.75	0.54	0.57	0.61	0.56	0.48	0.39	0.35	0.09
Men	1.32	1.10	1.17	0.86	0.93	0.79	0.82	0.76	0.60	0.48	0.09
Women	1.34	1.19	0.94	0.65	0.62	0.82	0.66	0.54	0.47	0.52	0.16
Men											
Managerial and professional specialty	2.70	2.79	2.37	2.62	2.15	1.30	1.99	1.48	1.46	1.04	0.19
Technical, sales, and administrative support	2.65	2.64	1.68	1.79	1.74	1.17	1.77	1.16	1.71	1.53	0.19
Service occupations	2.89	2.22	2.46	1.06	1.74	2.49	0.80	1.68	0.54	0.80	0.14
Precision production, craft, and repair	2.33	1.81	2.45	1.07	1.37	1.38	1.22	1.76	0.81	0.90	0.14
Operators, fabricators, and laborers	3.18	2.00	3.38	1.04	1.36	2.81	0.53	0.78	0.35	1.60	0.27
Women											
Managerial and professional specialty	2.71	2.49	1.70	1.71	1.55	1.33	1.59	1.23	1.18	1.26	0.48
Technical, sales, and administrative support	1.93	1.59	1.52	0.84	0.71	0.82	1.21	0.73	0.80	0.86	0.17
Service occupations	3.56	2.00	1.84	1.09	1.48	3.20	0.92	1.17	0.71	1.53	0.18
Precision production, craft, and repair	3.31	2.21	2.50	1.41	1.59	2.02	1.21	2.01	0.97	2.35	--
Operators, fabricators, and laborers	5.07	3.25	3.22	0.88	1.09	3.22	0.75	0.99	3.01	4.03	--

--Less than 0.05 percent.

1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 9.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991

(table 4)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Total	0.96	0.85	0.75	0.54	0.57	0.61	0.56	0.48	0.39	0.35	0.09
17-19 years	3.61	3.20	2.64	0.99	1.09	2.27	2.26	0.88	2.33	3.31	0.32
20-24 years	2.15	1.78	1.33	1.47	1.59	1.36	1.36	1.35	1.11	1.64	0.15
25-34 years	1.70	1.51	1.27	0.97	1.10	1.26	1.06	1.00	0.82	0.79	0.14
35-44 years	1.92	1.54	1.35	1.13	1.00	1.15	1.10	0.98	0.83	0.54	0.19
45-54 years	2.61	2.18	1.91	1.46	1.31	0.95	1.37	1.26	1.17	0.72	0.18
55-64 years	3.80	3.47	2.56	3.01	1.46	2.02	1.38	1.60	1.11	1.34	0.25
65 years and over	3.30	1.61	2.32	0.98	0.85	0.99	0.81	0.60	0.65	2.24	0.32
17-19 years old											
Managerial and professional specialty	1.58	2.14	--	0.00	--	1.33	0.00	0.00	0.00	--	0.00
Technical, sales, and administrative support	6.67	6.19	5.09	1.62	1.65	4.50	4.69	1.23	4.70	6.64	0.17
Service occupations	4.21	3.25	3.16	2.09	1.99	3.25	1.94	2.13	3.09	3.32	--
Precision production, craft, and repair	5.49	2.30	4.68	--	3.26	2.60	--	3.52	--	2.03	--
Operators, fabricators, and laborers	5.46	5.17	5.21	--	--	5.16	--	--	--	4.60	0.00
20-24 years old											
Managerial and professional specialty	6.78	6.42	4.03	6.49	6.25	5.24	5.80	5.53	5.05	7.09	--
Technical, sales, and administrative support	3.26	2.73	2.22	1.31	1.30	1.56	1.62	1.20	1.35	1.50	0.33
Service occupations	4.33	2.54	2.30	2.54	2.93	3.49	1.36	1.96	1.66	2.28	--
Precision production, craft, and repair	4.11	2.75	3.57	3.02	3.05	2.80	2.58	2.37	1.41	3.25	0.54
Operators, fabricators, and laborers	7.17	2.28	2.63	1.41	6.72	6.95	--	1.78	1.43	1.76	0.00

Table 9.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991--Continued

(table 4)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
25-34 years old											
Managerial and professional specialty	3.75	3.44	2.76	2.66	2.36	2.22	2.71	2.34	1.84	1.93	0.29
Technical, sales, and administrative support	2.76	2.15	1.80	1.34	1.33	1.26	1.67	1.29	1.66	1.25	0.27
Service occupations	6.11	3.06	2.88	1.79	2.66	6.02	1.13	2.37	1.22	1.46	0.43
Precision production, craft, and repair	3.58	2.77	3.44	1.72	3.05	2.23	1.88	2.10	1.87	2.24	--
Operators, fabricators, and laborers	2.86	2.20	2.16	1.76	0.80	1.96	1.06	1.52	1.70	1.88	--
35-44 years old											
Managerial and professional specialty	3.61	3.56	2.55	2.97	2.60	1.53	2.15	2.06	1.80	0.71	0.56
Technical, sales, and administrative support	3.44	2.65	2.46	1.72	1.44	1.24	2.07	1.41	1.67	1.01	0.12
Service occupations	3.75	2.84	2.85	1.28	1.05	2.15	1.91	2.14	0.60	2.78	0.30
Precision production, craft, and repair	2.89	2.58	2.84	1.35	1.48	2.72	1.85	2.24	0.63	1.12	--
Operators, fabricators, and laborers	8.19	3.26	8.15	1.32	1.54	8.54	0.83	1.62	0.92	2.30	--
45-54 years old											
Managerial and professional specialty	4.58	4.19	4.22	3.16	2.90	2.15	2.81	2.18	2.64	0.69	0.33
Technical, sales, and administrative support	3.29	3.21	2.06	2.38	1.89	1.67	1.94	1.61	2.06	1.85	0.48
Service occupations	5.35	4.03	3.94	3.00	3.02	4.16	1.05	1.96	1.24	1.55	--
Precision production, craft, and repair	4.78	3.30	4.01	1.67	2.16	2.24	2.47	3.79	0.61	1.10	0.34
Operators, fabricators, and laborers	2.67	2.22	2.09	1.42	1.34	2.35	0.73	0.88	1.24	0.81	--

Table 9.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by age, and occupation: 1991--Continued

(table 4)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stnl control	Sales/ mktg	New employee	Other
55-64 years old											
Managerial and professional specialty	8.76	9.17	4.31	10.01	2.87	2.84	2.65	2.72	1.36	1.65	0.80
Technical, sales, and administrative support	6.38	5.22	4.88	3.68	3.55	3.64	3.94	3.37	3.44	3.17	--
Service occupations	1.95	1.56	1.08	0.95	0.99	1.37	--	0.75	0.56	0.57	--
Precision production, craft, and repair	4.09	1.05	3.80	4.22	4.18	1.28	0.85	4.00	0.59	0.57	0.00
Operators, fabricators, and laborers	15.05	13.40	15.38	3.85	3.43	15.52	--	1.10	1.37	12.11	--
65 years and older											
Managerial and professional specialty	8.54	7.21	4.91	3.83	3.19	4.07	2.80	2.95	2.34	2.21	1.37
Technical, sales, and administrative support	0.00	7.55	4.94	4.84	3.80	--	4.36	--	4.99	2.75	--
Service occupations	*	*	*	*	*	*	*	*	*	*	*
Precision production, craft, and repair	*	*	*	*	*	*	*	*	*	*	*
Operators, fabricators, and laborers	*	*	*	*	*	*	*	*	*	*	*

--Less than 0.05 percent.
*Too few sample observations for a reliable estimate.
1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

Table 10.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by race-ethnicity, and occupation: 1991

(table 5)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stati control	Sales/ mktg	New employee	Other
Total	0.96	0.85	0.75	0.54	0.57	0.61	0.56	0.48	0.39	0.35	0.09
White, non-Hispanic	1.06	0.98	0.81	0.62	0.59	0.68	0.58	0.58	0.40	0.39	0.10
Black, non-Hispanic	2.93	2.71	2.21	2.43	2.50	1.57	1.88	1.81	1.56	1.45	0.20
Hispanic	3.17	2.65	2.97	1.75	2.32	2.18	1.59	1.67	1.66	2.18	0.17
White, non-Hispanic											
Managerial and professional specialty	1.78	1.84	1.54	1.56	1.31	1.04	1.33	1.12	0.86	0.91	0.30
Technical, sales, and administrative support	1.74	1.48	1.19	0.94	0.83	0.67	1.01	0.59	0.93	0.79	0.15
Service occupations	3.19	1.96	2.04	0.96	1.28	2.78	1.02	1.49	0.60	1.40	0.18
Precision production, craft, and repair	2.07	1.56	2.05	0.76	1.07	1.12	1.08	1.56	0.61	0.55	0.11
Operators, fabricators, and laborers	3.02	2.17	3.25	0.94	1.49	2.61	0.61	0.55	0.41	1.34	0.30
Black, non-Hispanic											
Managerial and professional specialty	7.59	7.23	4.81	6.33	6.28	3.76	5.39	4.92	3.37	4.88	0.56
Technical, sales, and administrative support	3.18	2.77	2.77	2.39	2.41	1.63	2.29	2.14	2.06	1.52	0.28
Service occupations	3.21	2.52	2.29	2.14	2.37	2.94	0.61	1.77	1.63	1.90	0.20
Precision production, craft, and repair	5.24	2.54	4.07	2.02	2.23	3.12	1.95	2.58	1.41	3.31	--
Operators, fabricators, and laborers	2.29	1.88	1.34	1.15	0.93	2.06	1.05	1.28	0.89	1.40	--

Table 10.--Standard errors for percentage of employed adults who took at least one employment-related training course during the previous 12 months, by race-ethnicity, and occupation: 1991-Continued

(table 5)

Characteristic	1/Any	Profes-sional	Tech/ skilled	Exec/ mgmt	Super-visory	Job health/ safety	Word proc/ comp	Quality/ stat control	Sales/ mktg	New employee	Other
Hispanic											
Managerial and professional specialty	5.50	5.02	3.88	3.44	3.21	3.22	3.20	3.39	2.10	2.41	--
Technical, sales, and administrative support	6.26	5.32	4.70	4.72	3.76	4.07	4.49	3.67	4.39	2.54	0.26
Service occupations	6.09	5.39	5.39	2.27	5.34	5.63	0.82	1.39	1.10	1.32	--
Precision production, craft, and repair	5.17	6.44	6.93	3.77	6.22	4.30	3.75	4.46	3.37	6.30	0.59
Operators, fabricators, and laborers	9.21	4.34	7.97	4.11	1.91	8.09	--	4.19	4.90	8.46	0.00

--Less than 0.05 percent.

1/Participants can be counted in more than one type of training.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, "Adult Education Component", 1991.

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