Abstract

In the empirical literature on work experience, job tenure, training and earnings, only one previous study has made a distinction between the effects of work experience in the current occupation and work experience in previous ones, and no study has made the distinction with respect to training. Yet it is reasonable to hypothesize that the distinction is important. Using data from the US National Longitudinal Survey of Youth, it is found that the returns to work experience in the current occupation with previous employers are similar to those to work experience with the current employer, and that tenure has no independent effect. Similarly it is found that the distinction between training for current and previous occupations gives better results than a distinction between training for current and previous employers. It is found that work experience, classroom training and vocational institute training for the current occupation have highly significant effects on earnings, with work experience having by far the largest absolute impact. Apart from high school vocational institute training, which actually has a significantly negative effect on the earnings of those with high cognitive test scores, the previous-occupation counterparts do not have significant effects.

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The Impact of Work Experience and Training in the Current and Previous Occupations on Earnings: Micro Evidence from the National Longitudinal Survey of Youth

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Introduction

College degree-holders apart, most people in the United States experience at least one major change of occupation after entering the labour force (reference). Nevertheless, in the empirical literature on work experience, job tenure, training and earnings, only Shaw (1984) makes a distinction between work experience in the current occupation and work experience in previous ones, and no study has made the distinction in the case of training. Since human capital theory suggests that current-occupation work experience and training are likely to have a greater effect on earnings than the previous-occupation counterparts, the distinction is important.

That earnings increase with work experience has long been established. A variety of theoretical reasons, not mutually exclusive, have been advanced for anticipating an additional positive tenure effect. First and foremost there is the human capital argument that firms share with their employees some of the returns to investment in specific training in order to protect it (Becker, 1964; Mincer, 1974). Alternatively, a tenure effect could be the consequence of wages increasing in line with upward adjustments of the perceived productivity of well-matched individuals in the context of incomplete information (Jovanovic, 1979); or who wish to insure themselves from overestimating the productivity of new hires in a context of incomplete information and downwards-rigid wages (Freeman, 1977; Harris and Holmstrom, 1982); it could be deliberately established by employers who wish to promote efficient self-selection of new hires by discouraging early quitters (Salop and Salop, 1976); and it could be deliberately established by employers deferring part of their workers' compensation to guarantee their performance on the job (Lazear, 1981).

Nevertheless the empirical literature on the topic is mixed. Abraham and Farber (1987) and Altonji and Shakotko (1987), both using Panel Study in Income Dynamics data, provide statistical reasons for expecting a positive association between earnings and tenure in cross-section data, irrespective of any functional relationship, and conclude that the true tenure effect is relatively unimportant. By contrast Topel (1991), using essentially the same data, asserts that 10 years of tenure raise male wages by at least 25 percent. Shaw (1984), using National Longitudinal Survey of Young Men data and a measure of occupational investment which is a doubly-weighted sum of work experience in the present and previous occupations, finds that tenure has a highly significant effect when the occupational investment variable is excluded from the model, but only a marginally significant effect when it is included. Neal (1995), using the 1984-1990 Current Population Survey supplements on displaced workers, also seeks to differentiate relevant from less-relevant work experience by relating the wage losses of displaced workers to their tenure, current-industry work experience prior to displacement, and total work experience prior to displacement. Although he does not have data on current-industry work experience, he infers that it has a greater effect on wages than previous-industry experience.

In the literature on the impact of private sector training on earnings, most studies are concerned with the effects of current employer training and the distinction between current and previous occupations is not relevant (Bartel, 1995; Krueger and Rouse, 1998). Lillard and Tan (1992) introduce a temporal dimension in their analysis of the impact of training on earnings when using their data set from the National Longitudinal Survey of Young Men, but it relates to the recency of training rather than to a distinction between current and previous occupations or employers. Lynch (1992) and Veum (1995) analyze the effects of training on earnings using National Longitudinal Survey of Youth (NLSY) data, Lynch making a distinction between current and previous employers. The present study is on the same lines as those of Lynch and Veum, but the key distinction is between current and previous occupations rather than employers.

2. Data

The NLSY is used in this study because it is the only nationally-representative data set which permits the reconstruction of employment histories in sufficient detail to detect occupational change. It is also the only nationally-representative data set with sufficient training detail to permit one to quantify training by type and to link training spells with particular jobs.

The determination of occupational change is not a simple matter. In her study, Shaw (1984) considers an individual to have changed occupation if the occupational coding has changed since the previous interview. However, this is unsatisfactory because it is possible, and indeed common, for the coding to change at the one-digit level from interview to interview even though the respondent clearly is still in the same occupation (reference). It is not unusual for an individual in stable employment with the same employer, with the same pay and supervisory responsibilities, to appear to rotate through a sequence of different one-digit occupations. The three-digit occupational classification used by Shaw is even more unstable. To identify genuine occupational change, it is necessary to examine all the data relating to the respondent's employment history.

It follows that there can be no mechanical way of determining whether a training episode was for the current or a previous occupation. Again, the only way to assess the amounts of training received for the current and previous occupations is to look at the training history in conjunction with the employment history. Even estimating the duration of a training episode can be tricky if it spans two or more interviews, for the design of the NLSY survey instrument does not lend itself to the easy extraction of such data.

For these reasons, a case study approach has been adopted here, with the entire educational, training and employment history of each respondent being converted from the digitally-coded data into narrative form using SAS programmes, in effect reconstructing the interviews. From the narratives a secondary data base has been constructed which identifies, among other things, the date of entering the labour force, the date of entering the current occupation, the duration of all training episodes before and since the latter date, and other relevant factors including educational attainment. Because a case study approach of this type is highly labour-intensive, the sample has been restricted to the cohort of 440 males born in the interval October 1, 1961 - September 30, 1962.

Definitions and procedures

A respondent is deemed to have entered the labour force when he embarks on a spell of at least one year working at least 30 hours per week with either working being the only economic activity; or, in a case where the respondent is simultaneously working and enrolled in school or

in a training programme, where there appears to be a lasting commitment to the occupation in question. Individuals enrolled in education or training programmes and working more than 30 hours per week in jobs unrelated to their studies (janitor, cook, etc) are not considered to have entered the labour force for the present purpose. Date of entry of the current occupation is determined by inspecting the entire employment history, from date of entry of the labour force onwards, simultaneously with the individual's education and training histories. After entering the labour force, a respondent is considered to have experienced an occupational break if there has been a clear and radical change of occupation (shipping clerk to security guard, deliveryman or construction labourer). Nearly always occupational breaks occur at a time of change of employers, especially after separation with no new job lined up, and usually with a change of industry. Promotions, demotions and sideways movements to related occupations are not considered to be occupational breaks, even though the occupational classification has changed.

The NLSY records the occurrence and duration of formal training programmes only. Government-sponsored training programmes have always been recorded in great detail. Until 1988 private training was classified as vocational institute (with subdivisions), business college, apprenticeship, other formal company training programmes, correspondence courses, other training programmes and training episodes lasting less than one month. With the exception of the latter, further details were sought on the month of starting the training (if not already enrolled at the previous interview), month of ending the training (if ended by the time of the interview), and the number of hours per week. From this information it is possible to estimate the duration of each training episode in hours, if necessary piecing together information from two or more consecutive interviews. In the case of episodes lasting less than one month, for which there was no information, the duration has arbitrarily been estimated at 40 hours. Such episodes were relatively few in number. From 1988 onwards, training episodes have been recorded to the day and three new categories have been added to the classification: seminars/training programmes at work provided by someone other than the employer, off-site seminars/training programmes and vocational rehabilitation centres.

Since 1988, training episodes have been classified as consisting of classroom training, on-the-job training, work experience, job search assistance or other training, with multiple responses permissible and classroom and on-the-job training being by far the most frequent. For the present analysis job search assistance has not been deemed to be training. Work experience training has been combined with on-the-job training. If the training was described as both classroom training and on-the-job training, the hours have been divided equally between them.

Subsample and variables

The current year for the present analysis is 1992. Table I lists the variables and their means for 1992 for the 282 respondents included in the sample.[1] The educational variables give educational attainment as of the 1992 interview. *AFQT*, the Armed Forces Qualification Test

[1] 10 respondents were deceased by 1992. 25 others were not interviewed in that year. 14 had missing base-round data. 16 did not take the ASVAB tests. 41 had missing data in the 1992 interview. 17 had inconsistent training or earnings data. 21 worked less than 30 or more than 70 hours per week in 1992. 7 were in school at the 1992 interview. 5 had been out of the labour force for a year or more at the 1992 interview. 8 had seriously inconsistent training records. Given the heterogeneity of the reasons for exclusion and the lack of any obvious implication for the regression results, no attempt has been made to address the potential problem of selectivity bias.

score, is a composite of the arithmetic ability, word knowledge and paragraph comprehension scores on the Armed Services Vocational Aptitude Battery, taken by almost all NLSY respondents in 1980.[2] *ASVAB5* is the score on the fifth component of the ASVAB, speed of numerical operations, known to have explanatory power in earnings functions[3]. *TENURE*, years of tenure, is concurrent with *CUROC*, years in current occupation, and its coefficient therefore estimates the extra hourly earnings associated with work experience with the current employer. Vocational institute training undertaken while still in high school has been treated as a separate type of training

Further information on training is provided in Tables II and III. The means in Table I include the 100 respondents in the sample who received no training at all. Table II provides data on the total number of hours of training of a particular type received by the cohort (to assess its relative importance for the cohort as a whole), the number of respondents actually receiving the training, and the mean duration of each training episode. It may be seen that apprenticeship and classroom training have been particularly effective, in terms of the proportion used in the current occupation. By contrast, most of the vocational institute training was for occupations that have been abandoned.

Virtually all the on-the-job training and apprenticeship has been financed by employers. Table III provides a summary of the financing of vocational institute and classroom training. As may be seen, training financed by employers has mostly been classroom training and has not been wasted. There has also been a significant amount of family-financed classroom training, all for the current occupation. But a greater proportion of family-financed training, at least in terms of hours, has been in vocational institutes, with mixed outcomes. Training funded by other sources of finance, government-financed vocational institute training in particular, has had very poor outcomes. However, to the extent that such government-financed training is directed towards those who are marginalized in the labour market, this might be expected.

3. Empirical Results

Work Experience, Tenure and Earnings

The first column of Table IV shows the results of regressing the logarithm of hourly earnings on years of current-occupation work experience, *CUROC*, years of previous-occupation work experience, *PREVOC*, and personal and background characteristics. Current-occupation work experience and its square have highly significant coefficients, while the coefficients of previous-occupation work experience and its square are smaller and not significant [4]. In the second column, *CUROC* is divided into years of tenure with the current employer, *TENURE*, and years of work experience in the current occupation with previous employers, *CUROCBEF*. The coefficients of *TENURE* and *CUROCBEF* are similar and a formal *F* test indicates that they are not significantly different at the 5% level. The finding that tenure has no greater effect on earnings than work experience in the same occupation with previous employers suggests that, in a conventional specification, tenure acts at least partly as a proxy for the latter. Neal (1995) comes to a similar conclusion, except that in his study an upwards bias in the estimated

[2] The study was sponsored by the Department of Defense and used to re-norm the AFQT.

[3] It has a significant effect in the regressions reported in Table IV. See also Bishop (1992) and (reference).

[4] One might conclude that previous work experience does not affect earnings, but the fact that the standard errors of the *PREVOC* variables are actually smaller than those of their *CUROC* counterparts leaves room for the possibility that the lack of significance may be attributable to a relatively weak effect which might have been significant in a larger sample.

effect of tenure is attributed to tenure acting as a proxy for current-industry rather than current-occupation work experience[5]. Whether tenure has an independent effect of its own is moot. In Shaw (1984) it does have a marginally significant effect. In the present one, as in Neal's study, it does not, but that could be because the sample is too small.

Work experience, training and earnings

Current-occupation work experience is itself merely a proxy for various types of skill development, formal and informal, and it is of interest to evaluate training effects explicitly, making a distinction between training for the current occupation and training for previous ones.

Lynch (1992) analyzes the determinants of different types of training, and their effects on earnings in 1983, for those who had completed their schooling by 1980. Training spells, measured in weeks, are categorized as off-the-job training, on-the-job training or apprenticeship, according to whether they took place during the current (1983) job or a previous one and, in the case of current-job on-the-job training and apprenticeship, according to whether it was or was not completed. The main findings are that current-job on-the-job training, whether complete or incomplete, and incomplete current-job apprenticeship have significant effects on earnings. Current-job off-the-job training does not. Previous-job apprenticeship and off-the-job training have significant effects. Previous-job on-the-job training does not. Selection terms do not have significant coefficients and their inclusion does not materially affect the results. Fixed effects regressions, with dependent variable the logarithm of the ratio of 1983 and 1980 earnings, indicate that off-the-job training and apprenticeship have significant effects but on-the-job training does not.

Veum (1995) analyzes the determinants of training received in the period 1986-1990, and the determinants of 1990 earnings, for those who had completed their schooling in 1986. He disaggregates off-the-job training into its main components and he takes account of differing training intensity by measuring training in hours. His main finding is that no type of training has a significant effect on wages. Again, selection terms do not have significant coefficients and their inclusion does not affect the results. In fixed effects regressions using the logarithm of the ratio of the 1990 and 1986 earnings, he finds that vocational institute training has a significant effect but that it is the only type of training that does.

The present analysis extends that of Lynch and Veum by making a distinction between training for the current occupation and training for previous occupations. It covers a much longer period than either in that it takes account of the full training histories of the respondents as far as the 1992 interview. As in Veum's study, each type of training is measured in hours. The third column of Table IV shows the results of regressing the logarithm of hourly earnings on the four main types of current-occupation and previous-occupation training[6] and control variables. The coefficients of classroom and vocational institute training for the current occupation are highly significant and greater than that for on-the-job training. This corresponds to what would be predicted by human capital theory, classroom and vocational institute leading to greater increases in wages both because they are more general types of training and because they are more intensive. The coefficient of the current-occupation on-the-job variable is indeed not significant, but the fact that its standard error is actually lower than those of its

[5] Indeed, the movement of the tenure coefficient is taken as indirect evidence of a current-industry effect. Since changes of industry are highly correlated with changes of occupation, it could also be interpreted as evidence of a current-occupation effect.

[6] Apprenticeship, government, jail and other training were not used because there were very few respondents with these types of training in this sample (see Table II).

classroom and vocational institute counterparts suggests that this may be attributable to its small absolute effect.

The results indicate that previous-occupation training does not have a significant effect on earnings. In the case of classroom training and on-the-job training, this may be because of the small numbers of respondents with these types of (previous-occupation) training in the sample. However, the insignificant impact of vocational institute and high school vocational institute training for previous occupations is disappointing, given that these are two of the most important categories of training.

The coefficient of current-occupation work experience is smaller than before, indicating that the omission of the training variables leads to an upwards-biased estimate of the returns to work experience in the current occupation.

Comparing these findings with those of Veum, it would appear that the current-occupation/previous-occupation distinction used here allows the identification of effects which otherwise would be undetected. Comparing them with those of Lynch, the main difference is in the effect of off-the-job training. Since such training tends to be relatively intensive and general in content, one would expect it to have a relatively strong effect on earnings, at least if it is for the current occupation. That is what is found here. Lynch also finds a strong effect, but for the previous employer rather than for the current one. Lynch suggests that the lack of a significant current-employer effect might be attributable to sharing the cost with the employer by accepting lower wages. Table III confirms that most off-the-job training is paid for by employers, but the reverse is true for vocational institute training. An alternative explanation of the apparent difference in the findings could be that in 1983 most of her respondents had had relatively little time in the labour force and much of the previous-employer training was in fact for the current occupation. This hypothesis is tested in the fourth column of Table IV, where the current/previous classification refers to employer and not to occupation. Previous-employer classroom training has a significantly positive coefficient, as in Lynch's study.

Neither Lynch nor Veum find significant selection effects in their earnings functions, which suggests that the problem of selection bias is mitigated by the use of a broad range of controls in their earnings functions. As a further check, in one specification Lynch includes one-digit industry and occupation dummies, with no great effect on the results apart from some shading of the training coefficients. However, the occupations comprised by most one-digit occupational categories are highly heterogeneous in terms of their training requirements and it is reasonable to suppose that an explicit training-requirement variable would provide a more powerful control. One such measure is the Specific Vocational Preparation (SVP) requirement associated with the current occupation. SVPs have been estimated by the Bureau of Labor Statistics for the Dictionary of Occupational Titles (DOT) classification with nine categories ranging from 0 (no training needed) to 9 (more than ten years)[7]. There are two problems with its use in the present context: it is defined as an ordinal variable, and it is defined for the DOT classification rather than the census three-digit classification employed by the NLSY. Skating lightly over the first problem, Levine and Zimmerman (1995) have made SVP estimates for the census classification as weighted averages of those for the underlying DOT occupations. The fifth column of Table IV shows the results with SVP included. Even this more focused variable has little effect on the results.

An inspection of the residuals revealed that a disproportionate number of high AFQT score, low earnings respondents had received vocational institute training while in high school. This suggests that, for those with superior academic ability, such training has a negative effect

[7] US Department of Labor (1972). The full classification is (upper bounds of ranges only): 0 no training needed; 1 short demonstration only; 2 up to thirty days; 3 up to three months; 4 up to six months; 5 up to a year; 6 up to two years; 7 up to four years; 8 up to ten years; and 9 more than ten years.

on career aspirations or locks them into unduly unambitious career patterns. This was tested by splitting the variable *PREVHSVT* into *PREVHSVT1* for AFQT score < 76 and *PREVHSVT2* for AFQT score > 75, with the results shown in the sixth column of Table IV. The coefficient becomes effectively zero for the former category and significantly negative for the latter[8].

The results of a fixed effects regression are shown in Table V. In principle, a fixed effects model eliminates the problem of unobserved heterogeneity, at the cost of losing information on the effects of unchanged observable variables. In the present context there is a further price to pay. The dependent variable becomes the logarithm of the ratio of hourly earnings in 1992 to hourly earnings at the beginning of the study period. The requirement that a respondent should have entered the labour force by the time of the beginning of the study period inevitably means that the observations contain relatively little data on those types of training associated with entry to the labour force. In particular, all information relating to high school vocational institute training is lost and much relating to vocational institute training after graduating from high school.

The 1986 interview was taken as the beginning date for the study period because nearly all the respondents in the cohort had completed their formal education by that date, most of those with bachelor's degrees earning them in 1984 or 1985. A second consideration was the substantial reorganization in the recording of training in the NLSY after that interview (government and private training sections being merged and questions changed). The regression confirms that classroom and vocational institute training for the current occupation have significant effects on earnings and indicates that on-the-job training also has an effect significant at the 5% level. The coefficient of classroom training is similar to that in the previous model while those of vocational institute and on-the-job training are actually larger. The implausible increase in the vocational institute coefficient may be attributable to the fact that there were relatively few respondents in the fixed effects regression with this type of training, for the reason already given[9]. However, some increase in the coefficient might have been anticipated since it is reasonable to hypothesize that these respondents were making better training choices and were more motivated than the typical vocational institute trainee. They had already been in the labour force for a few years, they were relatively mature, and they were bearing relatively high opportunity costs in terms of forgone earnings. The regression sheds little light on the effect of previous-occupation training of any type on earnings because there were relatively few instances in the period, those respondents experiencing occupational breaks during the period being mostly those receiving little or no training.

The results therefore confirm the fixed-effects findings of Lynch and Veum that off-the-job training (Lynch) and vocational institute training (Veum) have significant effects on earnings. On-the-job training has a smaller but significant effect.

4. Quantitative Estimates of the Relative Importance of Work Experience and Training

[8] High school vocational institute training used in the current occupation has a large positive coefficient but it is effectively random, for there were only two respondents who were using such training in their current occupation.

[9] There were 11 respondents with vocational institute training, as opposed to 68 with classroom training and 41 with on-the-job training for the current occupation. In the previous regressions the corresponding figures were 29, 79 and 50.

What is the quantitative impact of the different types of work experience and training? Table VI provides estimates using the quadratic coefficients of the with-SVP specification reported in Table IV and the mean values reported in Table I[10]. They indicate that an individual with the mean values, compared with an individual with no work experience or training, will earn: 38% more on account of his work experience in his current occupation; 5% more on account of classroom training in his current occupation; and 3% more on account of vocational institute training for the current occupation. Work experience in previous occupations adds 6% but the coefficient is not significantly different from zero. The effects of other categories of training are less than 1% and insignificant. The figures suggest that the invisible accumulation of skills via work experience in the current occupation is in practice more important for earnings than formal training.

5. Conclusions

By the standards of the literature on earnings functions, the size of the present sample is small, but there is compensation in the form of the relatively high goodness of fit attributable to the quality of the data[11]. The results suggest that the distinction between current occupation and previous occupation is important for understanding the impact of both work experience and training on earnings. Current-occupation work-experience is an important determinant of earnings, both in terms of the statistical significance of its coefficients and its absolute effect, even when the training variables are included in the specification. Previous-occupation work-experience has a smaller and insignificant effect. Tenure does not have any independent effect and it is hypothesized that it may have been acting as a proxy for current-occupation work experience in those studies that have found an apparent effect.

The finding that the returns to relevant work experience with previous employers are approximately the same as those to current job tenure is parallel to that of Neal (1995) and provides support for his assertion that the literature on returns to job seniority has focused too narrowly on firm-specific factors. In Neal's study, relevant work experience is defined to be work experience in the same industry, while here it is work experience in the same occupation, but they are highly correlated.

The findings on the returns to training provide further evidence of the importance of the distinction between current and previous occupations. Current-occupation classroom and vocational institute training both have significant effects on earnings. Current-occupation on-the-job training may also have an effect, but as one would expect, it is smaller. Apart from classroom training, where there are too few observations for a definite conclusion, and high school vocational institute training for those with high AFQT scores, which has a significantly negative effect, previous-occupation training does not have a significant effect on earnings. The lack of a significant impact of previous-occupation training casts doubt on the deutero-learning hypothesis[12], which suggests that trainees who do not enter training-related occupations have at least learnt to learn and that this is likely to be of benefit to them in the

[10] The figure for each variable is calculated as [exp(z) - 1], where z is the evaluation of the quadratic terms at the mean value of the variable.

[11] It is reasonable to hypothesize that the hand-processing of each individual's employment, education and training histories has eliminated a substantial amount of measurement error. The regressions with training in Table V have R^2=0.51 and the fixed effects regression has R^2=0.27. These compare favourably with those of Lynch and Veum, even after adjusting for the difference in sample size.

[12] The term is due to Bateson (1972).

labour market (a standard defence of the provision of types of training with poor training-related job placement rates).

Several caveats are in order. First, the sample size is small and it is possible, indeed likely, that some of the insignificant coefficients (in particular, for reasons given above, current-occupation on-the-job training and previous-occupation work experience in the main regressions) would become significant if it were increased. Second, the figures reflect the endowments of the sample studied and, while representative of the cohort in question, are not representative of the male labour force more generally. Third, there may be educational and occupational variations in the coefficients that might be detected with a larger sample. Fourth, the present paper is limited in its scope in that it does not attempt to assess the effects of vocational college degree courses or vocational secondary education.

Table I
Variable Definitions and Sample Means*

CUROC	5.63	years in current occupation
TENURE	3.91	tenure with current employer
PREVOC	3.41	years in previous occupation(s)
CURCLASS	0.59	hours (100s) classroom training for current occupation
CURVOTEC	0.61	hours (100s) vo-tech training for current occupation
CUROTJ	0.47	hours (100s) on-the-job training for current occupation
CURHSVT	0.03	hours (100s) high school vo-tech training for current occupation
PREVCLASS	0.07	hours (100s) classroom training for previous occupation
PREVVOTEC	1.14	hours (100s) vo-tech training for previous occupation
PREVOTJ	0.34	hours (100s) on-the-job training for previous occupation
PREVHSVT	0.86	hours (100s) high school vo-tech training for previous occupation

Table II
Training Experienced by 1992 Interview, by Source: Total Number of Hours, Number of Respondents Experiencing Training, and Mean Duration

	Previous Occupation	*Current Occupation*
Classroom	1,891	16,537
	13	79
	145	209
Vocational or technical institute	32,192	17,215
	35	29
	920	593
On-the-job	9,602	13,320
	10	50
	960	266
Apprenticeship	3,505	27,284
	3	13
	1,168	2,099
High school vocational or technical institute	24,322	811
	28	2
	869	406
Government	3,417	0
	6	0
	570	-
Jail	1,276	240
	2	1
	638	240
Other	1,657	1,777
	7	14
	237	127
Less than one month	420	480
	17	20
	25	24

Table III
Financing of Vocational Institute and Classroom Training (Hours)

	Previous Occupation		Current Occupation	
	Vocational Institute	*Classroom*	*Vocational Institute*	*Classroom*
TOTAL	32,192	1,891	17,215	16,537
No question	2,999	600	2,444	120
SUBTOTAL	29,193	1,291	14,771	16,417
Employer	240	1,211	1,632	12,688
Self/family	6,498	0	10,553	3,502
Friends	8,299	0	1,475	0
Bank loan	1,662	0	1,095	0
Govt grant	5,490	0	16	0
Govt loan	3,600	0	0	0
Other	3,404	80	0	227

Table IV: Earnings Functions, Dependent Variable Logarithm of 1992 Hourly Earnings

				previous employer, not previous occupation	*with SVP*	*high school vo-tech split*
CUROC	0.090**	-	0.081**	0.087**	0.084**	0.081**
	(0.026)		(0.031)	(0.031)	(0.031)	(0.031)
$CUROC^2$	-0.005**	-	-0.005*	-0.005*	-0.005*	-0.005*
	(0.002)		(0.002)	(0.002)	(0.002)	(0.002)
TENURE	-	0.080**	-0.011	-0.013	-0.010	-0.009
		(0.029)	(0.027)	(0.028)	(0.027)	(0.027)
$TENURE^2$	-	-0.004	0.001	0.001	0.001	0.001
		(0.003)	(0.002)	(0.002)	(0.001)	(0.002)
CUROCBEF	-	0.107**	-	-	-	-
		(0.033)				
$CUROCBEF^2$	-	0.007**	-	-	-	-
		(0.003)				
PREVOC	0.011	0.010	0.012	0.011	0.019	0.014
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
$PREVOC^2$	-0.000	-0.000	-0.000	-0.000	-0.001	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
CURCLASS	-	-	0.098**	0.069*	0.087**	0.086**
			(0.028)	(0.031)	(0.028)	(0.028)
$CURCLASS^2$	-	-	-0.004**	-0.002	-0.004*	-0.004*
			(0.002)	(0.002)	(0.002)	(0.002)
CURVOTEC	-	-	0.060**	0.138**	0.055**	0.056**
			(0.023)	(0.042)	(0.023)	(0.022)
$CURVOTEC^2$	-	-	-0.003**	-0.008**	-0.003**	-0.003**
			(0.001)	(0.003)	(0.001)	(0.001)
CUROTJ	-	-	0.012	0.034	0.011	0.015
			(0.022)	(0.024)	(0.022)	(0.022)
$CUROTJ^2$	-	-	-0.001	-0.001*	-0.001	-0.001
			(0.001)	(0.001)	(0.001)	(0.001)
PREVCLASS	-	-	0.128	0.164**	0.154	0.155
			(0.156)	(0.064)	(0.156)	(0.155)
$PREVCLASS^2$	-	-	-0.039	-0.021**	-0.044	-0.044
			(0.031)	(0.009)	(0.031)	(0.031)
PREVVOTEC	-	-	0.007	0.017	0.005	0.002
			(0.019)	(0.016)	(0.019)	(0.019)
$PREVVOTEC^2$	-	-	-0.000	-0.001	-0.000	-0.000
			(0.001)	(0.001)	(0.001)	(0.001)
PREVOTJ	-	-	0.003	-0.012	-0.006	-0.013
			(0.039)	(0.030)	(0.039)	(0.039)
$PREVOTJ^2$	-	-	0.000	0.000	0.000	0.000
			(0.001)	(0.000)	(0.001)	(0.001)
PREVHSVT	-	-	-0.018	-0.013	-0.023	-
			(0.017)	(0.018)	(0.017)	-
$PREVHSVT^2$	-	-	0.000	0.000	0.001	-
			(0.001)	(0.001)	(0.001)	-
PREVHSVT1	-	-	-	-	-	-0.002
			-	-	-	(0.022)
$PREVHSVT1^2$	-	-	-	-	-	-0.001
			-	-	-	(0.001)
PREVHSVT2	-	-	-	-	-	-0.067*
			-	-	-	(0.030)
$PREVHSVT2^2$	-	-	-	-	-	0.002*
			-	-	-	(0.001)
SVP	-	-	-	-	0.030*	0.028*
			-	-	(0.015)	(0.015)
Constant	1.552	1.556	1.660	1.562	1.493	1.500
	(0.217)	(0.218)	(0.214)	(0.216)	(0.230)	(0.227)
R^2	0.43	0.43	0.50	0.50	0.51	0.52

** significant at 1% level, * significant at 5% level

n = 282 all regressions. Controls include schooling, ethnicity, score on Armed Forces Qualification Test, whether wages were determined by collective bargaining, region, local unemployment rate, and place of residence age 14.

Table V
Fixed Effects Model, Dependent Variable Logarithm of the Ratio of 1992 to 1986 Hourly Earnings

	coef.	s.e.
CUROC	-0.103	0.079
$CUROC^2$	0.023	0.012
PREVOC	0.159	0.104
$PREVOC^2$	-0.024	0.016
CURCLASS	0.082**	0.030
$CURCLASS^2$	-0.004*	0.002
CURVOTEC	0.217**	0.086
$CURVOTEC^2$	-0.021**	0.009
CUROTJ	0.052*	0.023
$CUROTJ^2$	-0.001*	0.001
PREVCLASS	0.103	0.293
$PREVCLASS^2$	-0.018	0.071
Constant	0.245	0.214
R^2	0.27	
n	233	

** significant at 1% level
* significant at 5% level

Table VI
Contribution of Work Experience and Training to Earnings Enhancement
(Sample Mean Relative to Zero Values)

	effect	*t ratio*
CUROC	0.375	2.94
PREVOC	0.059	0.88
CURCLASS	0.051	3.15
CURVOTEC	0.033	2.40
CUROTJ	0.005	0.50
PREVCLASS	0.010	0.98
PREVOTJ	0.005	0.23

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