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Is it Wise to Try to Force Employers to Pay All the Costs of Training at the Workplace?

Abstract

[Excerpt] This article explores the effects that these regulations have on: (a) the form of labor contracts and on training outcomes such as: (b) who pays for work place training of non-exempt employees, (c) whether training is obtained at schools or firms, (d) how much training non-exempt employees get? The evidence on who gets and who pays for training is consistent with the proposition that these regulations are having the effects that economists would predict for them. Many other explanations fit the data just as well, however, so causal connections between these regulations and training outcomes cannot be proved beyond a reasonable doubt.

Keywords

hours, employ, education, work, jobs, training, occupation, labor, paid, regulation, cost, force

Comments

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Is it Wise to Try to Force Employers to Pay All the Costs of Training at the Workplace?

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Is it Wise to Try to Force Employers to Pay All the Costs of Training at the Workplace?

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

Maximum hours legislation presents employers with the following dilemma: either (a) don't provide training that upgrades your employee's skills or (b) provide such training and pay **all** of its costs-- instructional costs and trainee time costs. No matter how generally useful the skill nor how voluntary the worker's decision to obtain training, if it raises productivity in one's current job and is provided by the employer, the worker must be paid while engaged in training. Workers and employers are prohibited from cutting the following deal-- the company will provide instructors, classrooms and certification, while the worker will commit uncompensated time to learning skills that enhance productivity in their current and future jobs. Federal wages and hours regulations currently specify that:

Sec. 785.27---Attendance at ...training programs ...need not be counted as working hours if the following four conditions are met:

- a) Attendance is outside the employee's regular working hours;
- b) Attendance is in fact voluntary;
- c) The course, lecture or meeting is not directly related to the employee's job; and
- d) The employee does not perform any productive work during such attendance

Sec. 785.28---Attendance... is not voluntary if the employee is given to understand or led to believe that his present working conditions or continuance of employment would be adversely affected by nonattendance.

Sec. 785.29---The training is directly related to the employee's job if it is designed to make the employee handle his job more effectively as distinguished from training him for another job, or to a new or additional skill. For example, a stenographer who is given a course in stenography is engaged in an activity to make her a better stenographer. Time spent in such a course given by the employer or under his auspices is hours workedWhere a training course is instituted for the bona fide purpose of preparing for advancement to a higher skill and is not intended to make the employee more efficient in his present job, the training is not considered directly related to the employee's job even though the course incidentally improves his skill in doing his regular work.

Sec. 785.30---...if an employee on his own initiative attends an independent school, college or trade school after hours, the time is not hours worked for his employers even if the courses are related to his job.

Sec. 785.31---...an employer may establish for the benefit of his employees a program of instruction which corresponds to courses offered by independent bona fide institutions of learning. Voluntary attendance ...at such courses outside working hours would not be hours worked even if they are directly related to his job, or paid for by the employer (Bureau of National Affairs, Wages and Hours, p. 97:3208).

Apparently the intention of these regulations is to require employers to pay all of the costs of training that is related to a non-exempt employee's current job even when the skills being taught

enhance the worker's productivity at other firms. They allow old style firms with hundreds of job classifications to ask employees to share the costs of formal training designed to prepare for promotions and transfers. Firms implementing lean production or high performance work systems with limited numbers of job classifications are, by contrast, required to pay all of the costs of the training necessary to develop flexible multi-skilled employees. The regulations allow unpaid time to be used for training directly related to one's job, if it occurs at a school and is initiated by the employee. No cost sharing is allowed except in highly restricted circumstances--registered apprenticeships and courses patterned after school based training.

This article explores the effects that these regulations have on:

(a) the form of labor contracts

and on training outcomes such as:

(b) who pays for work place training of non-exempt employees,

(c) whether training is obtained at schools or firms,

(d) how much training non-exempt employees get?

The evidence on who gets and who pays for training is consistent with the proposition that these regulations are having the effects that economists would predict for them. Many other explanations fit the data just as well, however, so causal connections between these regulations and training outcomes cannot be proved beyond a reasonable doubt.

1. Is "Employer Pays for Training" the Natural Order of Things?

Let us begin with the issue of whether the regulations are truly a binding constraint. In the absence of federal regulations, would workers and employers freely choose contract formats like ones imposed by the regulations? Is "employer pays the costs of on-the-job training" the natural order of things?

NO. Not according to standard economic theory. Often training develops skills that are useful at other firms as well as the firm providing the training. Courses in Word Perfect, Excel and Autocad are examples of training programs that teach general skills-- skills useful at many firms. Other times, training develops specific skills-- skills useful only at the firm providing training. Examples of specific training are learning how to operate a machine found only at this work place and orientation programs designed to develop company loyalty. Most commonly, workers get both types of training simultaneously.

When training is partially or wholly general, it not only raises the worker's productivity at the current firm, it increases the worker's attractiveness to other employers. Many workers leave the firm and receive the benefits of training in the form of higher wages at their next job. If the worker does not get a raise after training is completed, quit rates are likely to rise. To forestall

the loss of trained workers, firms generally pay higher wages to those who complete training. This implies, however, that some of the productivity benefits of the training are transferred to the worker and the return on the employer's investment in training is correspondingly reduced.

Indeed, the theory of on-the-job training (OJT) tells us that if training in a particular skill raises a worker's productivity at many other firms by the same amount it raises productivity at the current firm (i.e. the training is completely general), competition in the labor market will force the firm to raise the worker's wage by roughly the full amount of the productivity increase (Becker 1962, Hashimoto 1980). Firms will consequently not be able to profit from investing in general training even for the workers who remain with the firm. This does not imply that general training will not occur at work places, only that the worker, as the sole beneficiary of the training, must pay its full costs. There are two ways workers can pay for general training: (a) undertaking it on their own time and paying tuition/fees to cover the costs of instruction or (b) negotiating a package deal whereby training is combined with work and a lower wage is set during training to compensate the employer for instruction costs and the time that will be devoted to training rather than producing. Under this scenario trainees are paid considerably less than they could get in other jobs that do not offer training. Apprenticeships and unpaid internships are examples of the kind of institutional arrangements predicted by OJT theory.

Economic theory predicts that specific training also leads to wage increases, though smaller ones than for general training. The rise in the worker's productivity makes quits more costly so firms find it profitable to reduce quits by raising the worker's wage somewhat above the wage the worker can command in the outside labor market. The tradeoff for getting the wage increase is an employer demand that the worker share some of the costs of the investment in specific training.

Thus a free market leads to workers and employers sharing the costs of work based training, not to employers paying all training costs. The regulation rules out only the 'attend classes during unpaid time' method of sharing training costs. Even here there is a loophole for new hires. Firms are allowed to train workers who have not yet become employees. Alan Krueger's (1993) survey of 83 temporary employment agencies, for example, found that 59 percent of them provided free up-front computer training for the workers they place. Training costs were shared: the worker committed her time and the agency provided an instructor and training facilities. The agencies were willing to share general training costs because secretaries proficient in word processing generated substantially higher weekly fees when placed and the worker received only half of the increment. Indeed new or expanding firms sometime obtain state subsidies of prehire training.

The second method of cost sharing involves making training part of a package deal in which lower initial wage rates are traded off for more training. This is indeed the way Gary Becker and other economists have imagined sharing comes about. Under current regulations this is not really possible for short intermittent spells of training voluntarily undertaken by individual workers. A wage reduction during voluntary training in new computer applications programs or other general skills would probably be forbidden by federal wage and hours regulations. Wage structures reflect a host of efficiency and equity considerations. Even in non-union settings, changing them is very costly-- particularly if compensation is being lowered. Hence when technological change makes a new general skill valuable, the firm must decide whether to provide the training in that skill under the constraint of its predetermined wage structure. By prohibiting the firm from asking workers to take training during uncompensated time, federal wage and hours regulations effectively prevent the firm from inducing its workers to share the costs of training in this general skill.

For new hires, however, flexibility is greater because training is intensive at first and then diminishes and wages customarily rise with tenure on the job. By mixing training with work and setting a low wage during the training period, a labor contract can be designed that results in the workers sharing the costs of training with their employer.

The one caveat needed is the minimum wage. When a worker's initial productivity is very low and the job requires intensive up-front training, the minimum wage constraint may become a binding. Young inexperienced workers may in effect be prevented from bidding for training opportunities by offering to work for a low wage. If the minimum wage constraint is binding, employers can respond either by simplifying the job or asking schools to take over the responsibility for initial training.

Lacking the ability to get employees to pay a major share of the costs of general training (by accepting a low wage during the training period or doing the training on one's own time), employers will adopt production technologies that minimize the skill requirements of the job.¹ The evolution of the diner and the small, family-operated restaurant into franchised fast food operations using specially designed machines and prepackaged food is an example of how this is accomplished. By reducing the skills required to do the job, the employer shortens the time it takes for new employees to reach maximum productivity. The same people may have the job but they are taught less, and what is taught is useful primarily at that firm-- not elsewhere. Opportunities for promotion are minimal and wage increases are small.

2. Are Employers Able to Get Workers to Accept Pay Cuts in Return for General Training?

The problem with the prediction of OJT theory that workers receiving general training must fully finance the training by accepting substantially lower wages during training is that both case studies and econometric analyses of large representative data sets generally fail to confirm it.

Cross-section Studies of Starting Wage Rates

Lengermann (1995) analysis of NLS-Y data found that workers seldom paid much of the costs of employer provided training. More than 90 percent of employers paid the costs of training that occurred at the workplace. Eighty-two percent of employers paid for the training seminars their employees attended away from work (Table 1 of Lengermann). In most cases training occurred during work time. Wage rates and hours worked were not reduced when employer training was underway.

In Parson's (1985, table 7.6) study, when a youth reported that it was "very true" that "the skills [I am] learning would be valuable in getting a better job", his job paid on average 2.4 to 14 percent more than when the above statement was "not at all true" even with an extensive set of controls for schooling and academic achievement included in the model.

Bishop and Kang (1990) conducted another test of this hypothesis by regressing the log of the deflated starting wage of the current or most recent job of a large sample of 21 year olds on indicators of the receipt of employer sponsored training. Here again, the jobs offering some training rather than none or which offer greater amounts of training paid higher starting wage rates even when a whole array of human capital characteristics were controlled. Adding dummies for occupation and industry did not change the results appreciably.

Lynch's (1992) analysis of 1983 NLSY data on workers with less than a bachelors degree found that, controlling on occupation, industry, tenure, experience, schooling and background characteristics, workers who were in the 20th week of an incomplete spell of on-the-job training were paid a significant 5.2 percent extra on average.

Patrice Flynn's (1990) analysis of monthly earnings data in the Survey of Income and Program Participation found, that controlling for size of establishment, tenure, experience, schooling, previous training and demographic background (but not occupation), those currently receiving employer provided training earned a statistically significant 5.7 percent less on average. Lillard and Tan's (1986, Table 4.3-4.5) analysis of NLS Young Mens data and Barron, Black and Loewenstein (1989, Table 2) analysis of EOPP data found no significant tendency for wages to be lower while training is underway. Point estimates were negative but so small they

might as well be zero from a substantive point of view. Barron, Berger and Black's (1993, Table 1) cross section analysis of the SBA financed survey found that doubling on-the-job training intensity lowered the starting wage rate by a significant 2 to 4 percent. Doubling the off-site training intensity, however, was associated with a 4 percent higher wage. Even where training is associated with lower wage rates, the magnitude of the effect appears to be much too small to be consistent with standard theory.

It can be argued, however, that these findings do not constitute a decisive refutation of the proposition that workers pay all of the costs of general training and share the costs of specific training. Maybe the anomalous findings are caused by unobserved heterogeneity. The argument is that hiring decision makers are better at assessing the ability of job candidates than econometricians analyzing nationally representative data sets and the positive association between wages and training arises because workers who are highly able (in ways not observed by the econometrician) are both paid more and also recruited for jobs that are more complex and that consequently require large amounts of training.

Unobserved heterogeneity no doubt has the effect of contributing to the positive association between training and starting wage rates, but to transform the large negative structural relationship implied by theory into either zero impacts or statistically significant positive relationships, sorting of more able job applicants into high training jobs would have to be very powerful indeed. If such a selection process were operating, access to training should depend on ability factors that are visible to the analyst as well as on factors that are not visible to the analyst. Yet models predicting training participation shortly after leaving school estimated by Parsons (1985) and by Bishop and Kang (1988) failed to find large effects of ability proxies such as test scores, grades, and being a disciplined student on the probability of receiving training. On the other hand, Bartel and Sicherman (1993) and Veum's (1993) analysis of 1986 to 1990 NLSY data found that, once the youth had been out of school for many years, workers with high 1980 test scores were considerably more likely to receive company training and to be sent to seminars. Unfortunately, these analyses do not control for occupation and industry, so some of the positive relationship uncovered is probably due to occupational selection.

Another way to control for heterogeneity is to follow workers over time and assess whether entering a training program lowers wage growth. Lowenstein and Spletzer's (1993 Table 4) study provides separate estimates of the effect of complete and incomplete training spells on wage growth. They found that those in the midst of incomplete spells of training did not suffer wage declines relative to those who received no training during the previous year. Paul

Lengermann's study of 1988 to 1992 NLSY data found an insignificant tendency for wage rates to be higher when training was underway.

Further evidence that unobserved heterogeneity and highly specific training can not explain these anomalous findings comes from three additional types of studies which avoid the unobserved heterogeneity problem by holding the job or the individual being trained constant: (a) evidence that some employers pay for training in completely general skills such as mathematics and problem solving, (b) detailed studies of who pays the costs of apprenticeship training and (c) econometric analyses which compare the productivity growth and wage growth impacts of general training received by the individual.

2. Employer Sponsored Workplace Literacy Programs

While the number is currently small, a growing number of firms are training their workers in completely general skills such as mathematics, reading, writing, problem solving and interpersonal skills. Based on a telephone survey that achieved a remarkably good 66 percent response rate, Laurie Bassi (1992) has estimated that 10 percent of manufacturing firms with fewer than 500 employees and 8 percent of similarly sized non-manufacturing firms offered such training at the work site and provided at least partial release time for participation. Hollenbeck and Anderson's (1992) survey of Michigan firms with workplace literacy programs also found that most (81 percent) gave their workers released time when they participated in the training. The National Household Education Survey found that less than one percent of all workers had participated in a workplace literacy program in 1991. One-third of participants said it was required by their employer, 54 percent said they were given time off to attend and 49 percent said the costs of the training were paid by their company (Hollenbeck 1993).

The fact that many companies required worker participation indicates that literacy training is not a new form of untaxed compensation. Indeed one of the reasons why some companies do not offer such training is a concern that workers will feel demeaned by a suggestion that they need to improve their reading and arithmetic skills. To avoid such a reaction, the basic skills training is often integrated with workplace technical training. The word literacy is never used. Companies with such programs believe the training has raised morale, company loyalty, communication on the job, teamwork, quality of output, productivity and customer satisfaction (Bassi 1992 Table 11A). Clearly, some companies feel strongly enough about the need for their workers to improve these general skills, they were willing to pick up most of the costs of developing skills which are highly useful at other companies and in everyday life.

3. Studies of the Sharing of Apprenticeship Costs

Studies of who pays the costs of apprenticeship training have been conducted in Germany, Great Britain, and the United States (Noll et al 1984; Ryan 1980; Jones 1985; Weiderhold-Fritz 1985). Despite the transferable character of the training and significant turnover, these studies concluded that employers made large investments in general training that were not recovered during the apprenticeship. A welding apprenticeship program at a major U.S. shipyard was the subject of the first of these studies (Ryan 1980). The wage profile was quite flat-- starting at \$3.99 and topping out at \$5.26 after about two years on the job-- even though the investments in general training were very considerable. Inexperienced new hires spent 36 days in vestibule training before beginning work. During the first week following vestibule training, the trainee's output net of repair requirements was less than 10 percent of an experienced worker's output. Thirty-seven weeks after being hired it reached a level of 55 percent and at 60 weeks a level of 80 percent of an experienced worker's output. Despite the fact that the local economy was in deep recession, separation rates were extremely high: 10.8 percent per month for beginners and 6.3 percent per month for those with 12 to 24 months of tenure. The shipyard accounted for about one-fifth of the welding jobs in the area. When trained welders left the shipyard, they typically found better paying welding jobs at other local employers. This evidence clearly establishes that the shipbuilding company was contributing to the costs of general training.

The study of German apprenticeship training by the Bundersinstitut fur Berufsforschung found that in 1980 training costs ranged from a high of 25,200 DM per year for telecommunications technician apprentices to 2400 DM for apprentice gardeners and averaged 10,300 DM or X5668 per year at 1980 exchange rates. The apprentice's contribution to output, which was netted out to arrive at the above figure, averaged 6700 DM per year (Weiderhold-Fritz 1985).

Jones's (1985) study of apprentice training in the engineering industry in Great Britain found that the employer's training costs were 1.31 times the annual payroll costs of a skilled worker and the apprentice's contribution to output (which was netted out in calculating the estimate of employer costs) was 1.26 times the payroll costs of a skilled worker. Thus even major upward revisions of these estimates of the apprentice's contribution to output would not change the basic conclusion that employers appear to be sharing the costs of general training.

4. Econometric Studies of the Productivity and Wage Growth Effects of Training

Becker's theory predicts that **when training is general, its impact on wage growth should equal or exceed its impact on productivity growth.** Bishop's (1991) cross section analysis of EOPP data discussed in section 3.3 contradicts this prediction. When proportionate rates of wage and productivity growth during the first year or two of tenure on a job were regressed on time spent training the individual, productivity effects are many multiples larger than wage effects. Barron, Berger and Black (1993) came to a similar conclusion: "Using both the EOPP and SBA data, however, we find little evidence that workers bear a substantial portion of the costs and benefits of training." How can these puzzling results be explained?

One explanation that doesn't fit is that the training is specific to the employer and the employer is financing all of its costs. There is direct evidence that most of the training is general. Employers in the EOPP survey were asked, "How many of the skills learned by new employees in this job are useful outside this company?" Fifty-nine percent responded "almost all," 13 percent responded "most." Only 7.5 percent answered "almost none." When managers provided training in almost completely general skills, doubling training intensity raised productivity by 6.7 percent but wages by only 0.8 percent in a logarithmic model and raised productivity by 3 percent while increasing wage growth by only 0.96 percent in a linear model.

Summary: The evidence appears to be very strong that workers are not paying all of the costs nor receiving all the benefits of training in general skills. Employers are sharing the costs of types of training they are in theory not supposed to be willing to finance. The Fair Labor Standards Act regulations may have contributed to this phenomenon. But we cannot know for sure because there are other plausible explanations for firms being willing to share in the costs of general training-- network externalities, workers inability to finance large investments in training and/or imperfect signaling of general skills. Bishop (1991, 1995) provides a more complete discussion of the under investment thesis and the reasons why firms are willing to share in the costs of general training.

3. Impacts on Who Provides Training and Total Amounts of Training

If employers are paying some of the costs of general training, they are not doing it for altruistic reasons. They are comparing the training costs incurred to the expected productivity benefits the firm will receive from the workers who stay at the firm. Benefits received by other employers and by the trainee will have zero weight in their calculation. Turnover, thus, causes the firm to take only a portion of the true social benefits of general training into account when deciding whether to undertake training investments. Since they pay most of the costs but receive only part of the benefits, optimality for the firm involves less training than optimality

calculated from the workers perspective or optimality from a social perspective. That is why employers are so frequently criticized by policy analysts and union leaders for not investing enough in the training of employees (Office of Technology Assessment 1990, Commission on the Skills of the American Workforce 1990).²

The amount of formal training received at work does appear quite low. Paul Lengermann reports elsewhere in this journal that only 22 percent of 25 to 35 year old workers received any formal company training between 1988 and 1992. On average young adults received just 9 hours of employer-provided formal training per year. Hollenbeck and Wilke's (1985) analysis of CPS data found that only 33 percent of workers with 1 to 5 years of tenure report having received skill improvement training from their current employer. Analyzing 1982 data from the National Longitudinal Survey of Youth (NLS-Y), Parsons (1985) found that only 34 to 40 percent of the young workers in clerical, operative, service and laborer jobs said that it was "very true" that "the skills [I am] learning would be valuable in getting a better job."

While the incidence of formal training appears low, the payoff to getting such training appears to be very high, at least for the worker. In Parson's study, having a high learning job rather than a no learning job in 1979 increased a male youth's 1982 wage rate by 13.7 percent. While the 1980 job had no such effect, the 1981 job raised wages by 7.2 percent when it was a high learning job rather than a no learning job. Lengermann (1995) found that for young adults short term spells of employer sponsored training raised earnings by 5 to 10 percent almost immediately.

The authors of these regulations may well have thought that by lowering the worker's costs of training, total training would increase. In fact, however, the regulations discourage expanded training. First, they discourage some employers from organizing formal training programs that upgrade workers' current skills. Workers at firms that do not offer such training may have no school-based alternative or be unaware of the opportunities that are available. Alternatives may require a long commute or be scheduled at inconvenient times. The training is also likely to take longer because it is less focused on exactly what the worker currently needs to learn. Secondly, at companies that choose to offer training, forcing the employer to pay the full costs may actually reduce the number of employees getting training. Prospective trainees will typically need supervisor's approval and permission may not be forthcoming. Training will be rationed by employers.

One of the implications of this argument is that employees who are exempt from the requirements of the Fair Labor Standards Act-- managers and professionals-- should get more training than non-exempt employees. And indeed they do, though since the exempt/nonexempt

distinction coincides with occupational boundaries technical requirements are an alternative explanation for the difference.

Another implication is that, with employers rationing training to keep their costs down, the workers who do get training should get extremely high rates of return on their investment. Indeed that is the case as well. Lengermann found that most training occurs during work time and is essentially costless for the worker. The worker's benefit/cost ratio was essentially infinite (see column 9 of Table 2 in Lengermann's article). Even training that occurs during non-work time is a super deal for the worker. The worker 7 year benefit/cost ratio was 2.28 for on-site training provided by in-house staff and 12.9 for seminars away from the workplace. Only vendor provided training was a poor investment from the worker's point of view when the training occurs during unpaid time.

Allow Firms to Offer Employees General Training during non-work time.

The Department of Labor should modify its regulations to allow workers to volunteer to undertake employer provided training in general skills during unpaid time. I propose two modest changes in the regulations.

1. Section 785.31 should be modified to read: "An employer may establish for the benefit of his employees a program of instruction which ***develops general skills useful at other firms (e.g. word processing generic computer applications programs like Lotus, Paradox, Harvard Graphics, etc., mathematics, business writing, blueprint reading, statistical process control, group problem solving)*** and then certifies their presence in a way that is credible to other employers or which corresponds to courses offered by independent bona fide institutions of learning. Voluntary attendance ...at such courses outside working hours would not be hours worked even if they are directly related to his job, or paid for by the employer. ***Required training and training which develops firm-specific skills (such as the history and philosophy of the firm, a manufacturing scheduling system for the plant, how to run the cash register)*** would have to occur during compensated time." The standard for allowing workers to share the costs of training by doing it in uncompensated time should be the generality of the skills developed and their certification, not correspondence to school based programs.

2. The requirement that training that is not counted as work time cannot occur during normal work hours should be dropped. If training facilities and staff are to be used efficiently, they need to operate all day not just at 4:30 PM when most workers quit for the day. In an era of flex time, there is no reason why workers who engage in training on their own time should not be allowed to arrange with their employer for their eight hour work day to surround a one hour

training session that happens to occur at noon or 10:00 AM. The key requirement is that the training is voluntary, not when it occurs.

Whether the general training received by workers should occur on company time or on the workers' time is a decision that should be made by workers, unions and employers (i.e. specified in the collective bargaining contract in unionized settings or described in the employee manual in non-union environments), not by federal bureaucrats or administrative law judges. Furthermore, employers should not be banned from encouraging workers to undertake general training on their own time by offering merit pay increases or bonuses to workers who develop their own skills.

Government officials have been urging employers to increase training and to focus training on front-line workers. Probably they do not realize that the Department of Labor's wages and hours regulations are an important reason why non-exempt employees receive less training than in competitor nations. Since workers benefit so significantly from employer sponsored training, it seems only fair that they share the costs by spending some of their leisure time on skill development. Since the time costs of trainees account for about one-half of the total costs of formal training, this would involve a roughly 50-50 sharing of the costs of general training (Castles 1994). Fairer sharing of the costs of training will help produce a more skilled work force.

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Endnotes

1. A second impact of the minimum wage and maximum hours legislation is that the forced increase in the wage during training is partially compensated for by a reduction in wage rates during the post-training period. This increases the quit rate, which in turn reduces the payoffs that employers receive from training and, therefore, their willingness to make such investments or to hire individuals who require substantial training investments. Empirical studies by Hashimoto (1982) and Leighton and Mincer (1981) provide support for this view.

- 2 . "When measured by international standards, most American workers are not well trainedOur major trading competitors provide more and better worker training (Office of Technology Assessment 1990, p. 3,4)."