Effect of State-subsidized, Firm-specific Training Programs on Firm Training Decisions: Evidence from the New Jersey Customized Training Program

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Presented November 2, 2006
Association of Public Policy Analysis and Management Research Conference
Madison, Wisconsin

I. Introduction

One common economic development strategy is for states to offer financial assistance to firms to support the training of their employees. In 1999, nearly every state (47 of 50) provided some form of cash-assistance to selected firms to assist them to upgrade the skills of current or new employees (Regional Technology Strategies, 1999). In that year, state spending on these programs totaled $593 million or $4.71 per capita. Most of these programs are targeted to manufacturing firms.

These programs are designed to influence the behavior of firms in two different ways. First, these programs are intended to encourage firms to relocate to the state or to encourage existing firms to remain in the state by subsidizing a firm's costs. These policies are also intended to encourage firms to increase the amount of training provided to employees, a defensible policy goal given the demonstrated benefits to firms of training. These multiple purposes have allowed these programs to be politically popular in many states. As a result, resources allocated for these programs increased by 63% from 1989 to 1999 (Duscha and Graves, 1999).

Despite the popularity and extent of state-subsidized, firm-specific training programs, only a small number of evaluations have been conducted of these programs and while each contribute to our understanding of these programs, they have not definitively answered one key question about the effectiveness of these programs.

Question: To what extent do these programs influence firms to provide more training to their employees than they would have without government assistance?

Studies on the effect of these programs on firm training practices have produced mixed results. One study of programs in Illinois, North Carolina, South Carolina and California conducted by Osterman suggests that firms use the assistance to pay for training that they would have provided even without the assistance (Osterman, 1992). However, two other studies that utilized a more rigorous methodology concluded that grants could lead to an increase in a firm's investment in training. Holzer and his colleagues used a survey of small to mid sized manufacturing firms that had applied for a state-subsidized, firm-specific training grant from the Michigan Job Opportunity Bank-Upgrade Program to conclude that receipt of a grant led to a one-time increase in the

amount of training offered by the firm (Holzer et al, 1993). The authors, however, concluded that the program did not have a long term effect on firm training practices.

However, Moore and his colleagues used a study of the California Employment Training Panel (ETP) program to conclude that the program did lead to an increased long-term investment in training following participation in the program (Moore et al., 2000a). The qualitative study of 23 firms participating in the California ETP program concluded that firms had an increased commitment to training and provided an increased amount of training after participating in the program. The authors concluded that the ETP program is a "catalyst to training" (Moore et al., 2000a).

This paper uses information gathered through a multi-year evaluation of New Jersey's Customized Training (CT) program to answer the question.[1] The New Jersey program is an appropriate selection for such a study for four primary reasons. First, the New Jersey Customized Training program is similar in goals, strategy and funding source to other state-subsidized, firm-specific training programs and uses the same mechanism to achieve them (Duscha and Graves, 1999)(Regional Technology Strategies, 1999). Like those of many other states in the northeast, the New Jersey program was created in the late 1970's (1978) and significantly expanded in the early 1990's (1992) in the midst of an economic recession when the state was threatened by high unemployment and the continued loss of manufacturing employment.

Second, the program is one of the larger programs in the country. In 1998-99, the New Jersey Customized Training program had a budget of $20 million, ranking the state as the ninth largest program in the country (Duscha and Graves, 1999). In that period, the state spent $5.27 per capita on the program, ranking the state 15th in the nation. The state typically awarded between 65 and 80 grants per year during the mid-1990's.

Third, the program, like most others, is focused on the needs of manufacturing firms and of smaller firms (Duscha and Graves, 1999)(Regional Technology Strategies, 1999). In 1994, 1995 and 1996, manufacturing firms received nearly 80% of the grants awarded to individual firms and 86% of the total amount awarded to firms. During this same period, firms with less than 1,000 employees received nearly 90% of the grants awarded to firms and two-thirds of the total amount awarded to firms.

Finally, the program, like most others, requires that firms contribute a portion of the cost of the training but gives them a great deal of flexibility in deciding the content and structure of the training.

The study uses what Bartik and Bingham have labeled as a one-group pretest-posttest design (Bartik and Bingham, 1995). The study uses a telephone survey of firms, a telephone survey of employees, in-depth case examples of selected firms and administrative data to obtain information on firm behavior before the grant was awarded and on firm behavior after the grant. All data collection occurred after the grant was awarded and the training funded by the program was completed. The study then relies on other evidence, including the case examples of firms and the telephone survey of firms, to determine if the grant is responsible for any observed changes in behavior.

While the one-group pretest-posttest design is a very common evaluation technique in studies of economic development programs, such a methodology suffers from the problem of validity (Bartik and Bingham, 1995). The study uses what Bartik and

[1] The data analyzed in this paper was collected as part of an evaluation of the New Jersey Customized Training (CT) Grant program funded by the New Jersey State Employment and Training Commission.

Bingham have called a "subjective" approach to determine if decisions can be attributed to the program. Firms were asked directly about the effect of the grant on their decisions, both in the telephone survey and in case studies. Second, the study uses in-depth case examples to better understand firms' decision-making processes regarding location and training.

By relying on this "subjective" approach, the study also relies on the recollection of firm executives about past decisions. The study also relies on firm executives to be truthful regarding the effect of the program on their decisions.

Due to these limitations, the results of this analysis may be open to different interpretations. In addition, this study, alone, may not reach a definitive answer to all of the research questions. Instead, this study, when combined with the small but growing literature on the effect of state-subsidized, firm-specific training programs, may help to shed some light on important policy and research questions.

II. Background on State-subsidized, Firm-specific Training Programs

Most state programs have a dual purpose. First, these programs are designed to provide financial incentive to firms to influence their decision to relocate to or remain in a state. Second, state-subsidized, firm-specific training programs are designed to invest in a firm to increase the productivity of the employees and to assist the firm to adjust to new international competition.

Only a small number of programs are solely focused on business attraction as their primary goal (Regional Technology Strategies, 1999). In 1998, state programs allocated an average of 29% of grant funds to firms that were relocating to their state or opening a new facility. On average, state programs awarded forty percent of funds to firms that were expanding the number of employees and one-quarter of funds to firms that had stable or decreasing employment levels.

State-subsidized, firm-specific training programs are based on two broad theories in an attempt to influence the behavior of firms. The first broad theory is based on location theory that states that firms choose a location in an attempt to maximize their profits and minimize their costs (Blair and Premus, 1993). State-subsidized, firm-specific training programs are designed to reduce a firm's cost of production, by reducing the amount that the firm has to spend on training its own employees, thus making it economically advantageous to choose a particular location (Blakely, 1989).

Second, these programs are based on the supposition that training subsidies are "investments" in firms that will lead to increased productivity of employees and the firm as a whole. The overwhelming preponderance of studies on the subject have concluded that firm sponsored training increases worker productivity. Given the theoretical and demonstrated benefits of firm-provided training, one might assume that firms are familiar with their needs and the skills needs of their employees and would make rational decisions to invest in the optimal amount of training (Duscha and Graves, 1999). In fact, most business establishments (71%) do provide some formal training (which includes all training activities that follow a curriculum and were planned in advance) to their employees (Frazis et al, 1995).

However, two market failures, imperfect information and costs that cannot be recouped, may lead some firms to under-invest in the training. First, some firms may not fully understand the benefits to investing in the training of their employees. Small firms,

in particular, often do not have human resources departments or staff members familiar with the intricacies of providing training to employees. State-subsidized, firm-specific training programs are designed to assist firms to better understand the benefits of training investments.

Some firms shy away from providing training because of concerns that they will not be able to recoup their investment. Investments in training are not similar to other types of investment (Storper and Walker, 1989). Firms that invest in training are investing in employees that may ultimately choose to find employment at another firm, taking their increased skill levels with them. In some cases, this concern may lead firms to under-invest in training and provide the less than optimum amount of training. Government subsidies may reduce this risk for firms, particularly for small firms that can be adversely affected by a loss of even a small number of employees.

The positive effects of firm provided training on employee and firm productivity has been established by a large number of previous studies (Holzer, 1990)(Lynch, 1992) (Bartel, 1994). State-subsidized, firm-specific training programs are predicated on the belief that training can be beneficial to individuals and to firms and are designed to assist firms to increase the amount of training available to employees both with the assistance of the grant and after the assistance ends. the following question has not been definitively answered: To what extent do these programs influence firms to provide more training to their employees than they would have without government assistance? This study uses a survey of firms, case examples and other evidence to identify both the short term and the long term effect of the programs on training practices. The study will answer the following two questions:

QUESTION 1A –To what extent would training funded by the program have occurred without the government assistance?

QUESTION 1B – To what extent did firms increase the amount of training provided to employees after the Customized Training (CT) grant ended?

III. Methodology and Available Data

During the study period, (1994 to 1996), the New Jersey Department of Labor (NJDOL) awarded a total of 156 Customized Training (CT) grants to firms to support a training investment.[2] An additional 22 grants were awarded to consortia to support training investments.[3] Ten firms received multiple grants during the study period and for these only the most recent grant was included in the survey sample.

Of the 146 remaining firms that received a grant due to the need to train workers, 84 responded to a telephone survey (58%) conducted in 1999 (Table 1). This response rate is similar to those of firms in all other categories. In addition, 102 of the 156 firms

[2] The analysis of the effect of CT grants on firm training practices removes the 19 firms that received a grant due to relocating to the state and the 27 firms that received a grant due to a probable or imminent closing. These grants were designed to influence the location decisions, but not the training practices of firms.

[3] The consortia grants are removed from this analysis of the effect of grants on firm training decisions because administrative data is not available for individual firms participating in consortia.

submitted complete close out reports to the New Jersey Department of Labor (NJDOL) that were made available to the researcher.

Table 1.
Available Sources of Information on Grant Recipients

Primary Purpose of Grant	Total	Survey	Survey Response Rate	Close Out Report	Close Out Report Response Rate	Case Examples
Firms						
Relocating to New Jersey	19	11	58%	15	79%	2
At Risk of Leaving the State	20	10	50%	4	20%	0
Investing in Training	156	84	54%	105	67%	5
Consortia						
Relocating to New Jersey	0	0	-	0	-	0
At Risk of Leaving the State	2	2	-	0	0%	1
Investing in Training	22	6	-	17	77%	1
Total	219	113		141	64%	9

Five firms that received a grant to influence their training practices were included in the case examples. These case examples, which were conducted in 1999, included in-depth interviews with firm executives, human resources staff, trainers and supervisors and focus groups and interviews with employee who received training. Finally, telephone interviews were conducted in 1999 with a total of 178 individuals who received training from a firm that received a CT grant to support training and who were employed by the firm both before and after the CT grant. These individuals received on-the-job training while they were employed with 13 of the 156 firms.

In order to obtain baseline information on training practices, firms were asked three questions in the telephone survey. First, firms were asked to characterize the status of training programs at their firms before the CT grant was awarded. The four possible responses were; 1. training was conducted on a regular basis for all employees, 2. training was conducted for specific types of employees only, 3. training was conducted in special circumstances only and 4. the company did not conduct training programs for their employees. Second, firms were asked to estimate the percentage of their full time employees that received training on a regular basis.

Finally, firms were asked if they had a long-term human resources development plan in place prior to the receipt of the CT grant. This question was asked because such plans may be an indication of a firm's commitment to the importance of training and the firm's capacity to administer training. Firms must have a long-term human resources development plan when they receive a CT grant in New Jersey. The New Jersey Department of Labor (NJDOL) instituted this requirement so that training activities funded by the grant would be a part of a long term strategy for upgrading the skills of employees and so that firms would begin to plan for future investments.

Firms were also asked the same three questions to determine training practices after the CT grant. Firms were asked to characterize the status of training programs at

their firms after the CT grant and were given the same four possible responses. These responses were; 1. training was conducted on a regular basis for all employees, 2. training was conducted for specific types of employees only, 3. training was conducted in special circumstances only and 4. the company did not conduct training programs for their employees. Second, firms were asked to estimate the percentage of their full time employees that received training on a regular basis after the CT grant. Finally, firms were asked if they still had a long term human resources development plan in place after the CT grant. While firms were required to have such a plan in place when they applied for the CT grant, firms that have such a plan in place after the grant was completed exhibit a increased commitment to training their employees.

In an effort to classify firms by their level of commitment to training, the responses to the two survey questions relating to firm training practices were used to identify firms with a low, moderate or high level commitment to training both before and after receiving the CT grant. Firms with limited commitment to training are those firms that reported that training was conducted in special circumstances, provided only to certain types of employees or not reported at all and that reported that they provided training to less than 40% of their employees (Table 2). Firms with a high commitment to training are those that reported that training was provided on a regular basis to all employees and reported that more than 60% of employees received training. Firms that did not fit these criteria were classified as having a moderate commitment to training.

Table 2.
Classification of Firms by Level of Commitment to Training

Level of Commitment	Definition		
Limited	Training Was Conducted in Special Cirucmstances, to Specific Types of Employees or Not At All	AND	Less than 40% of Employees Received Training
Moderate	All Other Firms		
High	Training Provided on a Regular Basis to All Employees	AND	More than 60% of Employees Received Training

IV. Use of CT Grants to Individual Firms as Training Incentives

During the period from 1994 to 1996, NJDOL awarded 156 grants totaling $29.7 million to firms to assist them to provide training to their employees. Eight in ten of the grants and 69% of the grant funds were awarded to these firms. The remaining grants

were awarded to firms that were relocating to the state or reported that a closing was imminent or likely.

The vast majority of firms (over 80%) receiving a CT grant to support a training investment were in the manufacturing industry. Six percent were in the wholesale or retail trade industries and 8% were in the service industry. The 126 firms in the manufacturing industry produced a variety of products including telecommunications equipment, pharmaceuticals and medical devices, food and windows and doors.

The firms receiving a grant to support training investments tended to be small to mid sized firms. Twenty-nine percent of the firms had fewer than 100 employees. An additional 31% of firms had between 100 and 249 employees. Only 13% had more than 1,000 employees. These firms had an average of 465 employees and ranged from a low of 6 to a high of 6,000 employees.

Four in ten had a unionized workforce. Firms were located in every county in the state. The firms had a mean average wage of $13.53 and 40% of the firms had an average hourly wage of less than $12.50 per hour. A small percentage (17%) were moderate or high wage firms, paying their employees an average of more than $17.50 per hour. Twenty-two of the recipients, 14% of the total, had received a previous grant.

Grants ranged in size from $3,600 to $2.7 million and averaged $190,693. Nearly a quarter of the grants were large, over $250,000 but over 20% were smaller than $50,000. More importantly, the amount awarded per employee ranged dramatically as well. The average amount awarded per employee was $931. Twenty-two percent received less than $250 per employee and nearly one-quarter received more than $1,250 per employee. One firm received a grant that amounted to only $10 per employee. Another firm received a grant that amounted to $5,488 per employee.

V. History Of Training Investments Prior To Receiving CT Grant

Based on responses to both the firm and employee surveys and information gathered through the case examples, most firms that received a CT grant provided limited amounts of training to their employees prior to receiving the CT grant.

Only a small percentage of firms that responded to the telephone survey of firms reported that they provided significant amount of training to their employees. Specifically, only 26% of the firms responding to the survey reported that prior to receiving the CT grant they provided training to all employees on a regular basis (Chart 1). Over two-thirds of establishments provided some training to their employees but did so in specific circumstances (30%) or provided limited training to only specific employee types (38%). The remaining 4% of firms did not provide training to their employees.

A minority of firms reported providing training to a large percentage of their employees. Seventeen of the 75 firms (23%) reported that they provided training to 80% or more of their fulltime employees on a regular basis. More specifically, thirteen of 75 firms (17%) percent of firms provided regular training to all of their employees.

Most firms, however, provided training to a limited percentage of their employees prior to the receipt of the CT grant. Nearly two-thirds (53 of 75 or 64%) provided training to less than 40% of their employees on a regular basis. More specifically, almost half of the firms (34 of 75 or 45%) reported that they provided training to less than 20% of their fulltime employees on a regular basis prior to the CT grant (Chart 2). Eight percent of

firms (6 of 75) reported that they did not provide training to any of their fulltime employees on a regular basis.

Chart 1.
Training Practices Before the Receipt of a CT Grant

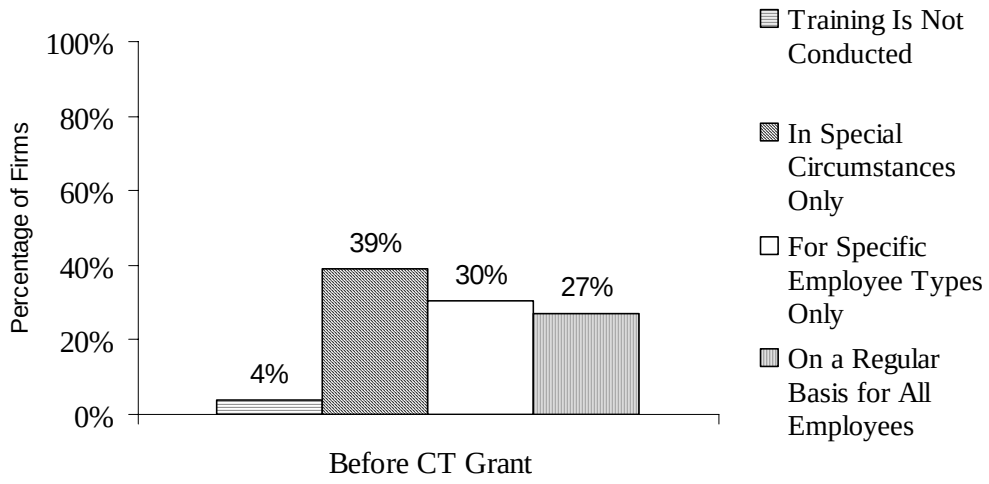
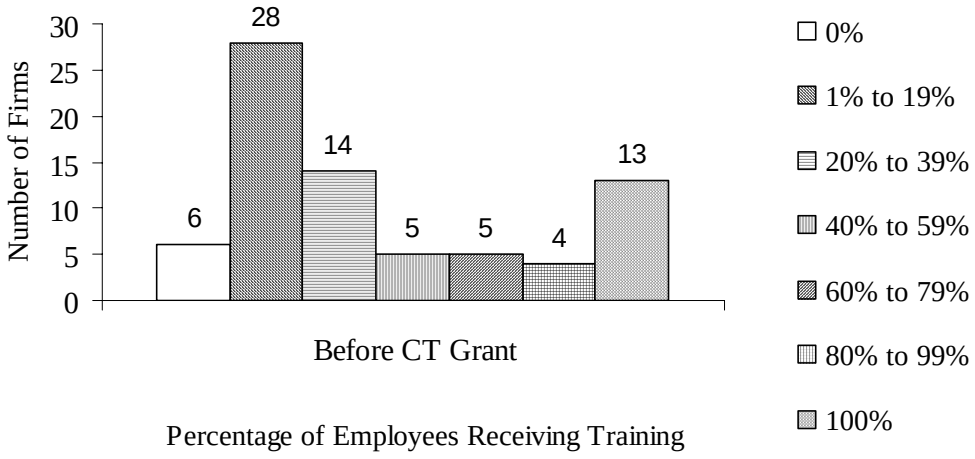


Chart 2.
Percentage of Employees Receiving Training Before Receipt of the CT Grant



An examination of these measures together reveals that over half of the firms had a limited commitment to training prior to receiving the CT grant. These firms provided training in specific circumstances, to specific types of employees or provided no training, and provided training to less than 40% of their employees. Conversely, only two of ten

firms had made a significant commitment to training their employees prior to the receipt of the CT grant (Table 8.2). These firms reported that they provided training on a regular basis for all employees and reported that they provided training to 60% of their employees. Twelve percent of the firms did not report an answer to one or both of the questions used to calculate the measure of commitment to training.

The existence of a long-term human resources development plan is another measure of a firm's commitment to training. In order to develop such a comprehensive strategy for upgrading the skills of employees, firms must have a certain commitment to training and a capacity to develop such a plan. Prior to receiving the CT grant, only one-third of firms that responded to the survey reported that the firm had a long-term human resource development plan. Fourteen percent of firms did not know if they had a plan in place before the grant was awarded.

Table 3.
Level of Firm Commitment to Training Prior to Receipt of the CT Grant

Level of Commitment	Definition			Percentage of Firms Before CT Grant
Limited	Training Was Conducted in Special Cirucmstances, to Specific Types of Employees or Not At All	AND	Less than 40% of Employees Received Training	51.2%
Moderate	All Other Firms			16.7%
High	Training Provided on a Regular Basis to All Employees	AND	More than 60% of Employees Received Training	20.2%

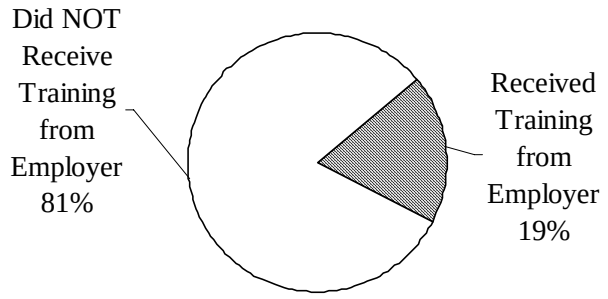
These previous measures of a firm's commitment to training rely on an individual employees recollection of past practices at the firm. While respondents have no reason to report inaccurate information, their response alone is an imperfect measure of a firm's training practices. The survey of individuals who received on-the-job training from firms provides an important independent measure of the training practices of firms prior to the CT grant.[4] Individuals were interviewed by telephone at home and have no reason to misreport their experiences.

The results of the survey are consistent with the information collected from the survey of firms and confirm that firms had a limited commitment to training before the

[4] Firms receiving CT grants were only required to submit information to the State of New Jersey about individuals receiving on-the-job training through the grant.

CT grant. Individuals who received on-the-job training funded by the program and who responded to the telephone survey also reported that training had been limited prior to their firm's receipt of the CT grant. Of the 178 respondents who reported that they were still employed by the company that provided them with training through the CT program and who had worked for that same employer for 6 or more years, only 19% reported that they had received training from their employer prior to the CT grant from their employer (Chart 3). Only 13% had participated in occupational training offered by their employer and 5% had participated in health and safety training offered by their employer. Only 4% had received basic skills training from their employer.

Chart 3.
Percentage of Respondents That Received Training from Employer PRIOR to the On-the-Job Training Funded by the CT Grant



When the results are analyzed at the level of the firm, the results of the survey remain consistent with the information collected from the survey of firms. The 178 respondents were employed by 15 separate firms. The small number of responses at any given firm limits the ability to draw definitive conclusions. However, only a small percentage of employees at any of the given firms had received training from their employer before the CT grant.

Of the eight firms with 10 or more employees responding to the survey, only one firm had more than 40% of their employees report that they had received training before the CT grant. At this particular firm, half of the 12 employees responding indicated that they had received training from their employer before the CT grant. However, the remaining seven firms all had a small percentage of employees report that they had received firm-provided training. At one firm, none of the employees reported receiving training. Only 1 of 21 employees at another firm and 1 of 23 employees at a third firm reported receiving training from their employer before the CT grant.

Seven firms that also responded to the firm survey and whose training practices could be classified employed a total of 55 individuals who responded to the survey. By combining the response, a unique picture of the training practices of a small subset of the firms was created (Table 4). According to the firm survey responses, two of these eight

firms had a moderate commitment to training before the CT grant. Only one of these firms had more than 10 employees who responded to the survey. At that firm, only 4 of 17 employees reported receiving training from their employer before the CT grant.

The remaining six firms had limited commitments to training. Only two firms with limited commitments to training had 10 or more employees respond to the survey. At one of these firms no respondents reported receiving training. At the additional firm, only 4 of 13 employees reported receiving training from their employer before the CT grant.

Table 4.
Prevalence of Firm-Provided Training
Before the CT Grant
Firms with Responses to Both the Firm and Employee Surveys

FIRM RESPONSE Extent of Training Provided BEFORE the CT Grant	Number of Firms with Responses to Both the Firm and Employee Surveys	Number of Firms with 10 or more Employee Responses	**EMPLOYEE RESPONSE** Percentage of Employees Receiving Training from their Employer BEFORE the CT Grant *(Firms with 10 or more Empoyee Responses)*
Limited	5	2	Firm 1: 31% (4 of 13) Firm 2: 0% (0 of 10)
Moderate	2	1	24% (4 of 17)

While some differences exist in training practices by industry and firm size, most firms in all industries and of all sizes had limited commitment to training before receiving the CT grant. Prior research on firm training practices has demonstrated that firms in the manufacturing industry are somewhat less likely to provide training to their employees than those in other industries. However, the 70 firms in the manufacturing sector that responded to the survey (83% of all responses) were no less likely to have made a commitment to training their employees before receiving a CT grant than firms in other industries.

One quarter of all manufacturing firms had made a high level of commitment to training. None of the 10 firms in other industries with available data had made such a commitment to training. Nine of the 12 firms in other industries (75%) with available data had a limited commitment to training. More than half (55%) of manufacturing firms with available data exhibited a limited commitment to training.

Over one third (36%) of manufacturing firms had a long term human resources development plan prior to the grant compared to 21% of firms in other industries. While 31% of manufacturing firms reported providing training to all employees on a regular basis, none of the firms in other industries reported this level of training. Only four

percent of manufacturing firms responded that training was not conducted at all before the grant was received.

Two out of ten (23%) manufacturing firms reported providing training to more than 80% of their employees and four out of ten (39%) reported providing training to less than 20% of their employees. More than half (7 of 12) of the firms in other industries reported training less than 20% of their employees.

However, only 17% of the 115 individuals who received on-the-job training from manufacturing firms through the CT grants reported receiving training from their employer prior to the CT grant. Two in ten (21%) of the additional 63 individuals who received training while employed by firms in the services industry reported receiving training from their employer before the CT grant.

Prior research has concluded that the smallest firms are the least likely to have a commitment to training. This trend does not hold true for firms that received CT grants as firms of all sizes exhibited a limited commitment to training. Only four of the 13 firms (31%) with fewer than 50 employees and one of the seven firms with more than 1,000 employees had a high commitment to training. The smallest firms were most likely to provide training on a regular basis to all their employees. Thirty percent of the firms with fewer than 250 employees provided training on a regular basis to all their employees, compared to 16% of firms with more than 250 employees. Five of the 14 smallest firms, with fewer than 50 employees, reported that they provided training to all employees regularly. Only one of the eight largest firms reported this level of commitment to training for all employees.

Seven of the 13 smallest firms (54%) reported that they provided training to less than 20% of their employees on a regular basis prior to receiving the grant. Only one of the eight largest firms reported this low level of training. The largest firms were more likely to have a long term human resources development plan prior to receipt of the grant than were smaller firms. Over sixty percent of the largest firms had such a plan in place. Slightly more than a third (35%) of firms with 250 to 999 employees and 41% of the mid sized firms had such plans. Only three of the 13 smallest firms had such a plan.

A small percentage of employees receiving on-the-job training reported that they received training from their employer before the CT grant. Of the 103 respondents who were employed by medium sized firms with 50 to 149 employees, only 18% reported receiving training before the CT grant. Nineteen percent of the 74 employees of mid-sized firms with 250 to 999 employees reported receiving training before the grant.

All five case example firms that received a grant to support training had a limited commitment to training prior to receiving the CT grant (Table 5).[5] One firm, a manufacturer of laminated boxes, did not provide training to employees. Three of the firms provided training in special circumstances only. Training was usually limited to orientation training for new employees. These firms primarily conducted on-the-job training and informal training to employees. One firm, the marketing services company, provided training to specific types of employees. This firm provided limited occupational training to specific employees.

[5] Two of the five firms responded to the telephone survey of firms. In both cases, the firms' responses to the survey were consistent with the evidence uncovered during the site visits.

Table 5.
Training Practices of Case Example Firms Prior to Receipt of the CT Grant

	Level of Commitment to Training	Training Was Conducted…	Data Source Used to Make Determination
Manufacturer Of Windows For Residential Uses	Limited	In special circumstances	Firm Survey, Case Study
Manufacturer Of Laminated Boxes	Limited	Not at all	Case Study
Producer Of Tape For Industrial Uses	Limited	In special circumstances	Firm Survey, Case Study
Printing / Marketing Services Company	Limited	For specific types of employees	Case Study
Telecommunications Company	Limited	In special circumstances	Case Study

Reasons for Limited Investment in Training

The survey of firms did not include questions concerning the reasons that most firms provided limited amounts of training before the CT grant. However, the case examples of five firms provided an opportunity to investigate in-depth the firms' training practices and philosophy towards training.

In the period before they applied for the CT grant, the five firms believed that significant investments in training were not necessary and believed that training would not benefit the company. Changes at the firms, including a change in ownership, increased competition, investment in new technologies or aggressive growth in employees, led them to believe that they needed to provide increased training to their employees.

Before they applied for the grant, all three manufacturing firms included in the case examples employed low to moderate skilled employees and produced goods that required only modest skill levels from their employees. For example, in the years prior to the receipt of the grant, the producer of tape for industrial uses was attempting to compete in the consumer tape market by producing large quantities of low cost tape for home and office use. According to company executives, the firm was more committed to producing large quantities of tape at the lowest cost possible and were willing to sacrifice quality to achieve that goal. The company did not believe that training was necessary to manufacture such a product and wanted to keep the costs of production (and of training) as low as possible.

In the years before receiving the CT grant, the printing / marketing services firm primarily provided printing services to support the marketing efforts of their business clients. The firm's management did not believe that employees needed training. Former employees of a large telephone company founded the telecommunications firm eight years before receiving the CT grant. Many of the firm's initial employees had also

worked in the telephone industry and had received extensive training from their previous employer. As a result, the firm's leadership did not believe that these employees needed training.

VI. Training Provided as a Result of the CT grant

The training provided as a result of the CT grant represents a substantial investment in training and an increase in the amount of training provided at most firms. In addition, based on firms' responses to the survey and on the case examples, training would not have occurred or would have occurred at a lower level in the absence of the grant.

The administrative data maintained by NJDOL and the close out reports submitted by firms allow for the calculation of three key measures of firm provided training: total amount spent on training (including the average spent per employee), the percentage of employees who received training and the extent of the firm's contribution of their own financial resources to the effort. By all measures, firms receiving CT grants used the grant funds and sizable contributions from their own financial resources to provide a substantial amount of training to employees. This training was an increase over the amount of training offered before the grant.

Firms provided nearly as much training as planned, amounting to a substantial investment in training. The 185 firms spent a total of $26.5 million in CT funds, 89% of the $29.7 million awarded to them. The remaining amount was unspent. Most of the grant recipients (83%) expended more than 75% of the amount awarded to them. Three of the firms did not spend any of the funds awarded to them through the CT grant. These firms were removed from all analysis of the effect of CT grants on training investments. None of these firms responded to the telephone survey and none were the subject of a case example.

According to close out reports submitted by the firms to NJDOL and provided to the researcher, firms contributed substantial amounts of their own financial resources to training. The 102 firms that submitted close out reports with complete information spent a total of $15.3 million in CT funds and contributed an additional $32 million of their own resources to the effort.[6] NJDOL requires firms to contribute at least $1 for every $1.50 contributed by the state. The firm contribution can include workers time spent while participating in on-the-job training and associated training costs that are identified as support activities or materials. Nearly all firms (96%) met this requirement. A total of 77% of firms contributed more to training than they received from the CT grant. Nearly 40% of firms contributed more than $2 for every $1 dollar received from the CT grant.

The 102 firms used the CT grant and their own funds (totaling $47 million) to provide training to a total of 18,477 individuals, a 17% increase over the total number of individuals they had initially planned to train. Firms spent an average of $4,126 per employee trained. Two in ten firms spent more than $6,000 per employee on training.

A total of 57 firms responded to the telephone survey and submitted a close out report to NJDOL. These firms used the CT grant funds and their own contribution to provide training on average to 66% of their employees. Nearly four in ten firms (39%)

[6] Three firms that received a CT grant to support a training investment submitted a close out report with one or more missing fields of data on firm training practices.

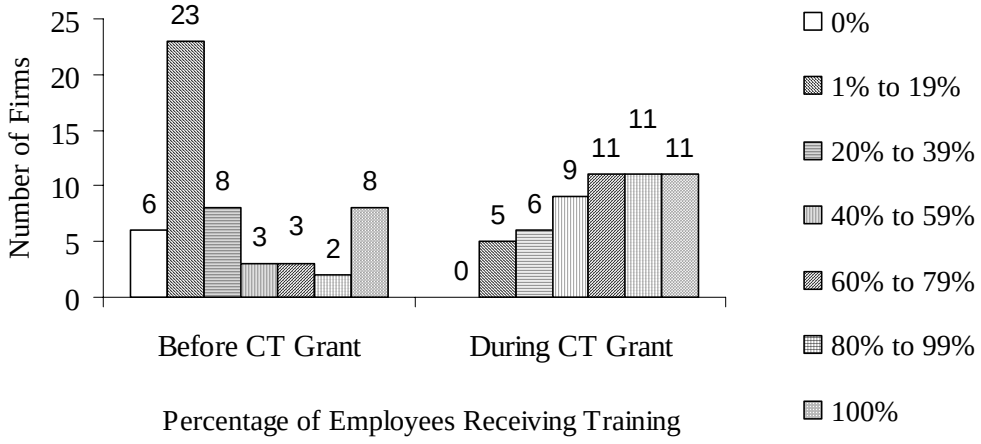
provided training to 80% or more of their employees (Chart 4). Nearly 20% percent of firms provided training to all their employees and only 16% of these firms provided training to less than 40% of their employees.

Prior to the receipt of the CT grant, only two in ten firms (21%) provided training to 80% or more of their employees. Only 4% percent of firms provided training to all their employees. A clear majority of firms (58%) provided training to less than 40% of their employees.

A majority of firms provided training to a larger percentage of employees during the grant than they did before the grant. Over two-thirds (69%) of the 48 firms that responded to the telephone survey questions on training practices before the CT grant and submitted a close reported providing training to a greater percentage of their employees with the grant than they did before the grant. More than two in ten (23%), however, provided training to a smaller percentage of their employees with the CT grant than they did before receiving the grant.

Firms in all industries and of all sizes reported providing a substantial amount of training with the CT grants and the firms' own contributions. Firms in the manufacturing industry provided training to an average of 67% of their employees. Nearly 4 in 10 (39%) provided training to more than 80% of their employees. Manufacturing firms also contributed significant amounts of their own resources to training. Nearly 80% (79%) of manufacturing firms contributed more than they received in CT funds. Thirty seven percent of these firms contributed $2 or more for every $1 received through the program.

Chart 4.
Percentage of Employees Receiving Training
Before and During the CT Grant
Firms Responding to the Survey and Firms Submitting a Close out Report



The 9 small firms (with fewer than 50 employees) provided training to an average of 77% of their employees. Five of the 9 provided training to more than 80% of their employees. The 3 large firms (with more than 1,000 employees) provided training to only 44% of their employees. The smallest firms also contributed significant resources to the

training effort. Half of the firms with less than 50% employees (7 of 14) contributed more to training than they received in CT funds. In addition, 78% contributed more than they received in the grant.

While the amount of training provided by each firm varied, the five case example firms used the CT grant to fund significant increases in the amount of training. These five firms spent between $11,000 to $1.6 million in CT grant funds and contributed $94,000 to $2.6 million in company funds. The firms spent between $1,100 to $10,000 per employee trained. Three of the firms spent over $4,000 per employee trained. Three of the firms provided training to all or nearly all of their employees. One firm provided training to all their employees and two provided training to over 85% of their employees. Only one firm provided training to less than half of their employees.

Interpreting the Results: The Short Term Effect of CT Grants on Firm Training Decisions

The survey of firms, the survey of employees and the case examples all consistently demonstrate that most firms provided more training during the CT grant than they did before the CT grant. Before concluding that these increases are the result of the CT grant, one key issue must be explored. It is possible that a firm would have provided training to employees even without the CT grant. However, firms report in the survey that training would have not occurred or would have occurred at a lower level without the grant. This finding is supported by the in-depth case examples with five firms.

Firms that responded to the survey were directly asked if they believed that training would have occurred without the receipt of the grant. Over half of the firms surveyed, 57%, reported that training would not have occurred without the receipt of the CT grant. An additional 36% of firms reported that training would have occurred even without the CT grant, but that it would have been on a smaller scale.

Only 11% of firms reported that training would have occurred even without the grant. Small percentages of firms in all industries and of all sizes reported that training would have occurred without receipt of the grant. One of the 13 smallest firms, with less than 50 employees, and none of the largest firms, with more than 1,000 employees, reported that training would have occurred at the same level without a CT grant.

This analysis relies on the self-reported recollections of firm staff to answer this fundamental question. It is possible that some respondents would provide inaccurate responses to the questions since they know that the purpose of the CT grant is to assist firms to provide training that they are unable or unwilling to fund alone. The case examples, which gather more detailed information on firms, is an important source of additional information on this question.

Four of the five firms studied in the case examples reported that training would have occurred at the firm, but on a smaller scale (Table 6). The four firms decided, prior to applying for the CT grant, that they needed to provide training to employees in order to remain competitive. External competitive pressures convinced firm executives that they needed to investment in new technology or to improve internal process. These executives concluded that training was necessary to support these changes. According to company executives, the grant allowed the firm to provide more training than would have occurred without the financial assistance.

Table 6.
Would Training Have Occurred without the CT Grant?
Case Example Firms

	Would Training Have Occurred without the Grant?	Data Source Used to Make Determination
Manufacturer Of Windows For Residential Uses	Yes, but on a smaller scale	Case Study
Manufacturer Of Laminated Boxes	Yes, but on a smaller scale	Case Study
Producer Of Tape For Industrial Uses	Yes, but on a smaller scale	Firm Survey, Case Study
Printing / Marketing Services Company	Yes, but on a smaller scale	Case Study
Telecommunications Company	No	Case Study

For example, a company that produces tape for industrial uses asserted that the intensive training gave employees the skills necessary to adjust to new, more complex technologies. According to firm executives, this transfer of technology could not have occurred as quickly as it did or to the extent without the Customized Training grant.

One other grant recipient, the printing / marketing services firm with 400 employees, invested in new technology to support the firm's efforts to transform itself from a printing firm to a full scale marketing services firms. The firm needed to train its employees to operate personal computers and office software to support the transformation. Prior to training, many office employees did not use a computer or relied on the company's mainframe computer. While the firm's younger employees possessed the necessary skills, those older workers who had not been exposed to personal computers while in school needed to receive training. The company needed to assist its employees to learn the new technology in order to remain competitive. Training was a necessity and would have occurred even without the grant. Firm executives, however, reported that a lower level of training would have been provided without the grant and that employees would have been expected to learn the new skills on their own and informally.

One of the five firms studied in-depth reported that training would not have occurred at all without receipt of the grant. This firm, a provider of telecommunications services with less than 50 employees, decided to pursue a CT grant after an operational review by firm staff revealed that training could assist employees to improve the quality of their installation of telecommunications equipment. The firm, however, had limited experience in providing training to employees and reported that CT grant provided the impetus for the actual implementation of the training.

Firms provided a substantial amount of training to their employees with the CT grant. The firms contributed a sizable amount of their own resources to the effort. The percentage of employees receiving training increased at most firms. Prior to the CT grant,

only one-third of firms provided training to more than 40% of their employees. During the CT grant, over 80% of firms provided training to more than 40% of their employees. The CT grants played an important role in assisting firms to increase the amount of training provided to employees. Nearly six in ten firms (57%) reported that training would not have occurred at all without the CT grant. By definition, all employees that responded to the survey had received training through the CT grant. However, only 19% of these individuals reported receiving training from their employer before the CT grant.

VII. Training After Receipt of the CT Grant

According to the firms themselves, firms increased their commitment to training following the CT grant. Prior to receipt of the CT grant, most firms did not have a long–term human resource development plan and provided training to specific types of employees or in special circumstances. After the CT grant, most firms surveyed reported having a long-term human resource development plan and most firms reported that they provided training to employees on a regular basis. However, the results of the employee survey produce conflicting results. In addition, an examination of the reasons that the case example firms applied for a CT grant reveals that the same reasons that lead firms to apply for a grant are the reasons that firms changed their training practices. While the CT grant may assist firms to provide increased amounts of short term training, the grant alone will not encourage firms to change their long term commitment to training.

Firms report in the survey that they provide more training to their employees after the CT grant than they did before the grant.[7] Prior to the receipt of the grant, only 26% of firms surveyed reported providing training on a regular basis for all employees. Following the receipt of the grant, six in ten firms reported providing training on a regular basis for all employees (Chart 5). The percentage of firms reporting providing training only in special circumstances decreased from 28% before the CT grant to 10% after the CT grant. The percentage of firms reporting providing training only for specific types of employees remained stable.

Four in ten firms (40%) increased the extent of training provided to employees. These firms reported that they provided training on a regular basis to all employees after the CT grant but reported provided training in specific circumstances or only specific employee types before the CT grant. Only four of the 85 firms (5%) decreased the extent of training provided to employees.

[7] The difference in training practices before and after receipt of the CT grant is statistically significant and has a chi-square probability less than .05.

Chart 5.
Level of Training Provided by Firms
Before and After Receipt of a Customized Training Grant

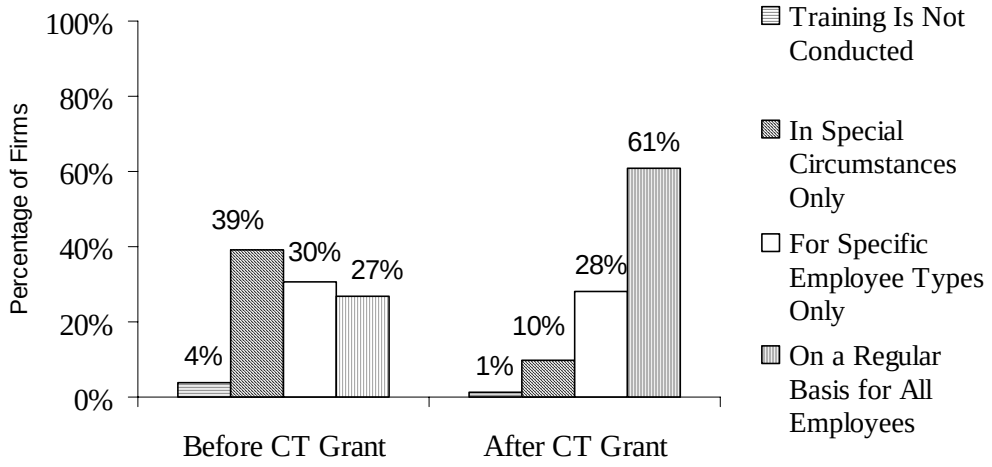
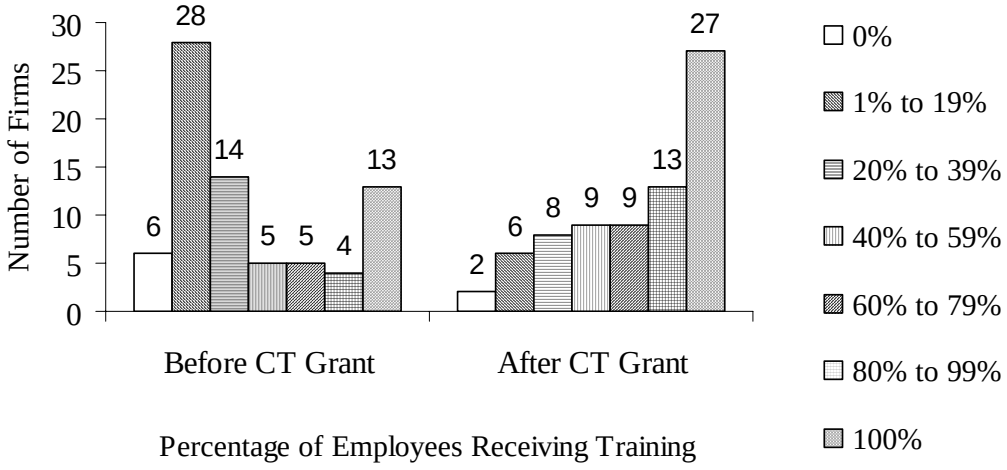


Chart 6.
Percentage of Employees Receiving Training on a Regular Basis, Before and After the CT Grant



Firms reported in the survey that they provide training to a greater percentage of employees than they did before the grant.[8] After the CT grant, a majority of firms (49 of 74 or 65%) reported providing training to more than 60% of their employees (Chart 6). This represents a substantial increase over the 29% of firms that provide this level of training before the CT grant.

More specifically, after the CT grant, more than half of the firms (40 of 74 or 53%) provided training to more than 80% of their employees, an increase over the 23% of firms that provided training to this percentage of employees before the CT grant. The percentage of firms providing training to all of their employees also increased from 17% before the CT grant to 36% after the CT grant. Finally, the percentage of firms providing training to less than 20% of their employees decreased from 45% to 10%. Nearly half of the firms surveyed (48%) reported that the percentage of employees receiving training on a regular basis increased since receipt of the CT grant. Only one firm reported that the percentage of employees receiving training had decreased.

Nearly two-thirds (62%) of firms surveyed reported that their company had a long-term human resource development plan after the CT grant. Prior to the CT grant, 36% had such a plan for the development of their workforce. One quarter of all firms did not have a long-term human resource development plan before the CT grant but had one in place after the CT grant. These firms have demonstrated an increased commitment and capacity to upgrade the skills of their employees.

Nearly half of all firms (46%) were classified has having a high commitment to training after they received the CT grant (Table 8.6). Only 20% of firms were classified as having a high commitment to training prior to the CT grant. As importantly, the percentage of firms with a limited commitment to training decreased from 51% before receipt of the grant to 18% after receipt of the grant.

Nearly 40% of firms increased their commitment to training, with 20% moving from a limited commitment to training to a high commitment to training. An additional 19% of firms moved from the medium to the high category or from the low to the medium category. Nearly four in ten firms (38%) stayed within the same category before and after receipt of the CT grant. Only 4 firms (5%) decreased their overall commitment to training from before the CT grant to after the CT grant.

Despite firm's reports concerning increased commitments to training, the telephone survey of individuals receiving on-the-job training through the CT grants produces some conflicting results. A small percentage of employees reported receiving training from their employer after the CT grant. The employees of firms that reported a high commitment to training also reported a low prevalence of training.

[8] The difference in the percentage of employees receiving training before and after the CT grant is also statistically significant and has a chi-square probability less than .05.

Table 7.
Level of Firm Commitment to Training Prior to and After the CT Grant

Level of Commitment	Definition			Percentage of Firms Before CT Grant	Percentage of Firms After CT Grant
Limited	Training Was Conducted in Special Cirucmstances, to Specific Types of Employees or Not At All	AND	Less than 40% of Employees Received Training	51.2%	17.9%
Moderate	All Other Firms			16.7%	21.4%
High	Training Provided on a Regular Basis to All Employees	AND	More than 60% of Employees Received Training	20.2%	46.4%

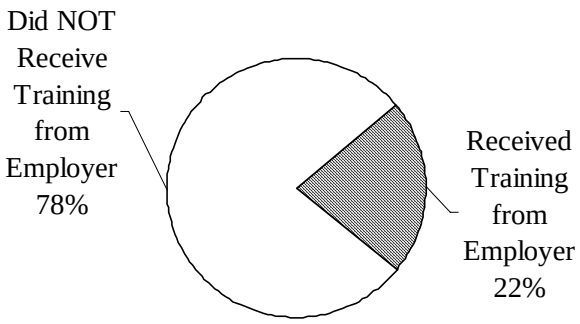
Less than one-quarter of respondents (22%) who were still employed by the firms reported receiving training from their employer after the CT grant (Chart 7). Only 19% of these employees reported receiving training from their employer before the CT grant. The survey was conducted at least one year after the CT grant ended for all respondents and more than two years after the CT grant ended for half of the respondents. However, the duration of time between the end of the CT grant and the survey does not appear to have an effect on the percentage of individuals reporting having received training. One quarter (25%) of respondents, whose firm had complete the CT grant 1 to 2 years before the survey was conducted, received training from their employer after the grant. One in five respondents (20%), whose firm had complete the CT grant 2 to 3 years before the survey was conducted, received training from their employer after the grant.

Only 15% of the 178 respondents reported receiving training from their employer after the CT grant but not before. Two-thirds (67%) of all respondents did not receive training from their employer either before of after the CT grant. Seven percent received training both before and after training.

When results are summarized at the firm level, the analysis yields similar conclusions. Fifteen separate firms employed the respondents. Eight of these firms had 10 or more employees who responded to the survey. While many firms were reporting an increase in their commitment to training, the percentage of employees receiving training from their employer increased at only two of the eight firms. The percentage of individuals receiving firm provided training increased from 5% to 24% at one firm and from 12% to 23% at the other firm. The percentage of employees receiving training

actually decreased slightly at three firms. At one firm, the percentage decreased from 50% to 42%. In addition, the percentage decreased from 24% to 18% at the second firm and from 22% to 17% at the third firm.

Chart 7.
Percentage of Respondents That Received Training from Employer After the CT Grant



When these results are combined with those of the firm survey, the analysis again yields similar conclusions. A total of 49 respondents worked for 6 firms who responded to the telephone survey and whose training practices could be classified. Four of these firms reported a high level of commitment to training after the CT grant, reporting that they provided training on a regular basis to all employees and provided training to at least 60% of their employees (Table 8). Only 9 of the 36 (25%) individuals employed by these firms reported receiving training from their employer after the CT grant.

Ten or more employees responded from three firms that responded to the survey. Two of these firms reported that they had a high commitment to training after the CT grant. However, small percentages of their employees reported receiving training from their employer after the CT grant. At one firm, 4 of 13 individuals reported receiving training, the same percentage that reported receiving training before the CT grant. At the additional firm, the percentage of individuals reporting that they received training after the CT grant was slightly lower than the percentage reporting they had received training before the grant. At one firm with a low commitment to providing training, none of the 10 employees reported receiving training before or after the CT grant.

Table 8.
Prevalence of Firm-Provided Training
After the CT Grant
Firms with Responses to Both the Firm and Employee Surveys

FIRM RESPONSE Extent of Training Provided AFTER the CT Grant	Number of Firms with Responses to Both the Firm and Employee Surveys	Number of Firms with 10 or more Employee Responses	**EMPLOYEE RESPONSE** Percentage of Employees Receiving Training from their Employer AFTER the CT Grant *(Firms with 10 or more Empoyee Responses)*
Limited	1	1	0% (0 of 10)
Moderate	1	0	
High	4	2	Firm 1: 31% (4 of 13) Firm 2: 18% (3 of 17)

These results may not be entirely inconsistent with the results of the survey of firms. It is possible that firms could have increased their commitment to training while not providing training to these specific employees. In addition, the small number of responses for any individual firm limits the ability to make definitive conclusions about firm training practices. However, the results do raise doubts about the strength of the conclusions that can be made from the survey of firms alone.

Since manufacturing firms make up the majority of firms receiving CT grants, the general trends hold for these firms as well. Six in ten manufacturing firms reported that they provided training on a regular basis to all employees after receipt of the grant. This is an increase from the 31% of manufacturing firms that reported providing training on a regular basis before receipt of the grant. Only one manufacturing firm reported that they did not currently provide training after the CT grant. The percentage of manufacturing firms providing training to all employees increased from 17% before the CT grant to 29% after the CT grant. Six in the firms (59%) had a long term human resources development plan after the CT grant, an increase from the 36% that reported having such a plan before the CT grant.

Nearly half of the manufacturing firms (46%) had a high commitment to training after the CT grant, compared to only 24% before the grant. Only 20% had a low level of commitment to training after the CT grant, a decrease from the 49% who reported this low commitment before the grant. Over one third of all manufacturing firms experienced an increase in their commitment to training, with 16% of all manufacturing firms moving from a low commitment to training to a high commitment.

Employees of manufacturing firms were slightly more likely to have received training funded by their employer after the CT grant than were employees of service firms (Table 9). Less than a quarter of employees of manufacturing firms (24%) reported that they received training from their employer after the CT grant. This represents a small increase over the 18% of employees who reported receiving training from their employer prior to the CT grant. Sixteen percent of manufacturing employees received training after the CT grant but not before. However, 10% received training before the CT grant but not after.

Table 9.
Prevalence of Firm Provided Training Before and After the CT Grant
Survey of Employees

		Industry of Employer		Size of Employer	
	All	Manufacturing	Services	Medium Sized (100 to 249 employees)	Mid Sized (250 to 999 employees)
DID NOT Receive Training Before or After CT	67%	67%	67%	67%	68%
Received Training ONLY BEFORE CT	11%	10%	14%	9%	14%
Received Training BEFORE AND AFTER CT	7%	8%	6%	9%	5%
Received Training ONLY AFTER CT	15%	16%	13%	16%	14%

The general trends hold for firms of all sizes. Six in ten (62%) of the smallest firms had a long term human resources development plan after the grant compared to only 23% before the grant. Six in ten of the smallest firms (with less than 50 employees) trained 100% of their workers. Before the CT grant, only three in ten (31%) provided training to all their employees. One quarter of the employees surveyed who worked for medium sized firms (with 100 to 249 employees) and 19% of employees survey who worked for mid sized firms (with 150 to 999 employees) reported receiving training after the CT grant from their employer.

While all five firms included in the case examples had a limited commitment to training before the CT grant, three of the five firms studied in-depth had a high level of commitment to training after the CT grant (Table 10). The remaining two grants had only moderate commitments to training after the CT grant.

Table 10.
Training Practices After the CT Grant
Case Example Firms

	Level of Commitment to Training	According to Firms, Training Was Conducted…	Data Source Used to Make Determination	According to Employees, Training Was Conducted…
Manufacturer Of Windows For Residential Uses	Moderate	On a regular basis for all employees	Firm Survey, Case Study	Not at All
Manufacturer Of Laminated Boxes	Significant	On a regular basis for all employees	Case Study	On a regular basis for all
Producer Of Tape For Industrial Uses	Significant	On a regular basis for all employees	Firm Survey, Case Study	On a regular basis for all
Printing / Marketing Services Company	Moderate	For specific types of employees	Case Study	On a limited basis.
Telecommunications Company	Significant	On a regular basis for all employees	Case Study	N/A

These three firms with a high level of commitment to training had on-going training programs in place at the time of the site visits and employees at these firms reported that the firms continued to provide training to them. For the firms with moderate commitments to training, the customized training grant was used to assist the firm during a critical period when training was needed. In these cases, the grant did not have an effect on the long-term training practices of the firm. For example, the printing / marketing services firm used the CT grant funds to provide existing employees with basic computer training as the company automated many processes using common software packages for desktop computers. At the time of the site visit, the company was hiring new employees who already had basic computer skills and could learn the company's systems through informal on-the-job training.

The manufacturer of windows for residential use reported during the survey that training was provided to all employees on a regular basis after the CT grant. However, employees of the firm reported in a focus group that employees had received little or no training since the CT grant. This conclusion was confirmed through interviews with supervisors and other staff of the firm who reported that the firm provided training only in specific circumstance. All employees reported in the focus group that the total quality management training they had received was very valuable and believed that both new and existing employees would benefit from additional training at this rapidly growing company.

In some cases, the increases in training can be traced to the firm's experience with the grant. For two of these firms, training has remained a core component of the company's business strategy. In some instances, however, an increase in training was caused by technological changes at the company and is only indirectly linked to the CT grant. For example, one firm, the manufacturer of pressure-sensitive tape, used funds from the program to assist employees to adjust to new technology. This training was successful

and as a result the transfer of technology has allowed the company to produce more types of products. The transfer of technology has continued, making continued training essential.

Interpreting the Results: The Long Term Effect of CT Grants on Firm Training Decisions

The impact of grants on the long-term training practices of firms is less certain. Firms maintain that, after the grant, training is offered to a greater parentage of employees and on a regular basis than before the grant was received. However, firms may have some limited incentive to overstate the amount of training offered after the CT grant and these results must be interpreted with some caution. All of the five case example firms reported that they provided more training to employees after receiving the CT grant than they did before receiving the grant. In addition, employees at two of these firms reported in focus groups or interviews that they had received more training after the CT grant than they had received before the grant. However, only 22% of individuals receiving on-the-job training through the CT grant and who remained employed by the same firm reported receiving training from that employer after the grant was completed.

Based on this review of all the available evidence and on the imitations of that evidence, it can be concluded that some firms increase the amount of training provided to employees in the period after the CT grant. However, the CT grant does not appear to be the primary cause of this increase in training. The case example firms demonstrate that in order for the CT grant to have a long-term effect on firm training practices, firms must first be committed to increasing the amount of training provided to their employees.

Three of the case example firms applied for a CT grant because the firm concluded that they needed a long-term commitment to improving the efficiency and quality of products in order to remain competitive. The manufacturer of laminated boxes pursued a CT grant because management realized that the firm needed to decrease costs and increase the quality of their product to compete with foreign firms. This firm provided basic skills training to their employees with a focus on English as a Second Language training for their largely Spanish speaking workforce. This training was designed to increase the quality of the company's products by improving communication between employees. The firm has continued the training programs funded through the CT grant because the firm viewed increased training as imperative to the firm's economic success.

The manufacturer of tape for industrial uses received a CT grant because they had made a separate commitment to invest in new technology in order to become or to remain competitive. Faced with economic hardship, the firm was acquired by a Japanese company that produces high-tech tape products. The new parent company decided that in order for the New Jersey company to be competitive, the plant would have to adopt technologies from the company's plants in Japan in order to produce high tech specialized tape products. In order to transform from a company producing low cost, low quality tape to a firm producing high-tech, high quality tape, the firm made a long term commitment to training their employees. The CT grant helped the firm to complete the technology of transfer in a shorter amount of time but did not, alone, convince the firm to increase the amount of training provided to employees

The two remaining case example firms, however, received a CT grant to fulfill a short-term need. As a result, these two firms had only a moderate commitment to training after the CT grant. For example, the producer of windows and door for residential

construction, hired an outside consultant to provide management advice after fast growth in the numbers of employees at the firm led to reduction in the quality of the final product. The consultant recommended that the firm provide workplace practices training with a focus on implementing total quality management practices at the firm. The firm's senior management recognized that the firm had a short-term need. However, the firm did not have a long-term commitment to training. After the CT grant funds had been expended, the firm reduced the amount of training provided to employees.

The findings here support those reached by Moore et al. in their evaluations of the California ETP program. They concluded that firms with strong leadership and management may be most likely to receive and implement an ETP project (Moore et al., 2000a). However, these firms have the least to gain from state assistance since, on account of their leadership, they are likely to be economically competitive. Firms most in need of assistance with training for their employees are also the firms least likely to obtain and implement a successful ETP project.

VIII. Conclusion

The survey of firms, the survey of employees and the case examples all consistently demonstrate that most firms provided more training during the CT grant than they did before the CT grant. Prior to the CT grant, only one-third of firms provided training to more than 40% of their employees. During the CT grant, over 80% of firms provided training to more than 40% of their employees. By definition, all employees that responded to the survey had received training through the CT grant. However, only 19% of these individuals reported receiving training from their employer before the CT grant.

Firms report in the survey that training would have not occurred or would have occurred at a lower level without the grant. Over half of the firms surveyed, 57%, reported that training would not have occurred without the receipt of the CT grant. An additional 36% of firms reported that training would have occurred even without the CT grant, but that it would have been on a smaller scale. This finding is supported by the in-depth case examples with five firms.

This analysis relies on the self-reported recollections of firm staff to answer this fundamental question. It is possible that some respondents would provide inaccurate responses to the questions since they know that the purpose of the CT grant is to assist firms to provide training that they are unable or unwilling to fund alone. The case examples, which gather more detailed information on firms through in-person interviews, are an important source of additional information on this question.

Four of the five firms studied in the case examples reported that training would have occurred at the firm, but on a smaller scale. The four firms decided, prior to applying for the CT grant, that they needed to provide training to employees in order to remain competitive. External competitive pressures convinced firm executives that they needed to invest in new technology or to improve internal process. These executives concluded that training was necessary to support these changes. According to company executives, the grant allowed the firm to provide more training than would have occurred without the financial assistance.

Firms maintain that, after the grant, training is offered to a greater parentage of employees and on a regular basis than before the grant was received. However, firms may

have some limited incentive to overstate the amount of training offered after the CT grant and these results must be interpreted with some caution. In fact, only 22% of individuals receiving on-the-job training through the CT grant and who remained employed by the same firm reported receiving training from that employer after the grant was completed. It is possible that firms could have increased the amount of training while not providing training to these employees. However, the results do raise doubts about the strength of the conclusions that can be made from the survey of firms alone.

All of the five firms included in the case examples reported that they provided more training to employees after receiving the CT grant than they did before receiving the grant. In addition, employees at two of these firms reported in focus groups or interviews that they had they had received more training after the CT grant than they had received before the grant.

Despite these seemingly positive results, the state-subsidized, firm-specific training program does not appear to be the primary cause of any increases in training that may occur either during the grant or after the grant has been completed. The case examples firms demonstrate that in order for the CT grant to have a long-term effect on firm training practices, firms must first be committed to increasing the amount of training provided to their employees. Three of the case study firms applied for a CT grant because the firm concluded that they needed a long-term commitment to improving the efficiency and quality of products in order to remain competitive. This decision was reached prior to, and independent of, the firm's receipt of the grant.

The two remaining case study firms, however, received a CT grant to fulfill a short-term need. As a result, these two firms had only a moderate commitment to training after the CT grant. According to interviews with firm executives and interviews and focus groups with employees, both firms reduced the amount of training provided to employees after the grant was completed.

Moore and his colleagues caution in their evaluation of the California ETP program that positive outcomes, in this case increases in the amount of training provided, may be a result of the state's ability to pick "winners" (Moore et al., 2000a). Bartik and Bingham argue that firms that participate in economic development programs do so because they have the commitment to economic growth and the capacity to pursue government assistance (Bartik and Bingham, 1995). It is entirely possible that the firms receiving a CT grant in New Jersey would have increased the amount of training provided to employees even without the CT grant.

The results of this study and other studies suggest that states should use such programs to attempt to influence firm training decisions for only those firms that have made a strong commitment to training but who have limited financial resources or capacity to provide training. States must develop more sophisticated selection criteria to guide the awarding of grants. Such criteria cannot be developed based on the results of this study. As a result, further research is needed to inform the development of such criteria. As a first step, a review of programs in other states should be conducted to identify the most developed selection criteria.

Sources

Bartel, Ann P. 1994. "Productivity Gains from the Implementation of Employee Training Programs." *Industrial Relations.* 33(4).

Bartik. Timothy K. and Bingham, Richard D. 1995. “Can Economic Development Programs Be Evaluated?” *Upjohn Institute Staff Working Paper*. 95(29).

Duscha, Steve and Graves, L. 1999. *State Financed and Customized Training Programs*, Silver Spring, Maryland: KRA Corporation.

Frazis, Harley J., Herz, Diane E. and Harrigan, Michael W. 1995. “Employer-provided Training: Results from a New Survey.” *Monthly Labor Review.* (May).

Holzer, Harry J. 1990. “The Determinants of Employee Productivity and Earnings.” *Industrial Relations.* 29(3).

Holzer, Harry J., Block, Richard J., Cheatham, Marcus N. and Knott, Jack H. 1993. “Are Training Subsidies for Firms Effective?” *Industrial & Labor Relations Review*. 46(4).

Lynch, Lisa M. 1992. “Private Sector Training and the Earnings of Young Workers.” *The American Economic Review*. 82(1).

Moore, Richard W., Blake, Daniel R., Phillips, G. Michael, McConaughy, Daniel and Van Haam, Amy Cheung. 2000a. *ETP at Work: An Evaluation of 1995-96 ETP Projects*. Northridge, California: School of Business Administration and Economics, California State University, Northridge.

Osterman, Paul. 1992. “New Lessons for State Training.” *Spectrum.* 65(3).

Regional Technology Strategies. 1999. *A Comprehensive Look at State-Funded, Employer-Focused Job Training Programs*. Washington, D.C.: National Governors’ Association.

Storper, Michael and Walker, Robert. 1989. *The Capitalist Imperative*. New York: Basil Blackwell, Inc.