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ABSTRACT

Three evaluations analyzed program characteristics and participant results in work force education and coordination in Washington State. The Employment Security Department's evaluation of Job Training Partnership Act Titles II and III looked for an association between participant characteristics and the type of training they receive and between type of training and subsequent employment and earnings. The evaluation found that participants with weak academic skills tend to receive remedial education, whereas classroom occupational skills training is associated with higher wages. The Office of the Superintendent of Public Instruction found that, during their first year out of high school, students who had completed secondary vocational-technical programs are more likely to work and more likely to attend a community or technical college than are other students, and they are less likely to take remedial courses in college. The State Board for Community and Technical Colleges and the Advisory Council on Adult Education reported a joint evaluation on workers upgrading their basic or occupational skills at a community or technical college. The key findings are that some 24,000 workers take colleges courses to upgrade their job skills each year and about 2,500 take basic skills courses. The three evaluations are expected to contribute toward building a system of accountability in the state job training initiative. (KC)

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WORKFORCE TRAINING PROGRAM EVALUATIONS

1996

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Program Evaluations

1996

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TABLE OF CONTENTS

	PAGE
Introduction and Executive Summary	i
Department of Employment Security <i>Job Training Partnership Act</i> <i>Program Evaluation</i>	A-1
Office of the Superintendent of Public Instruction <i>Secondary Vocational Education</i> <i>Program Evaluation</i>	B-1
State Board for Community and Technical Colleges <i>Job Skills Enhancement:</i> <i>An Evaluation of Publicly Funded</i> <i>Postsecondary Workforce Training</i> <i>and State and Federally Funded Basic</i> <i>Skills Training for Workers Upgrading</i> <i>Their Job Skills</i>	C-1

INTRODUCTION AND EXECUTIVE SUMMARY

Under Substitute Senate Bill 5992 enacted in 1995, the agencies represented on the Workforce Training and Education Coordinating Board (WTECB) are to conduct biennial program evaluations. These agencies are the Employment Security Department, the Office of the Superintendent of Public Instruction (OSPI), and the State Board for Community and Technical Colleges (SBCTC). In addition, the Advisory Council on Adult Education is to provide a program evaluation of adult basic skills education. This report presents the first of these evaluations.

These evaluations analyze particular program characteristics and participant results. The research complements "Workforce Training Results," by WTECB. "Workforce Training Results" examines the training system as a whole, while the evaluations reported here provide more detailed information.

The program evaluations and "Workforce Training Results" are pieces of an accountability system for workforce development, "Performance Management for Continuous Improvement" (PMCI). PMCI is a system for setting goals, measuring results, and continuous improvement in meeting customer needs. Under PMCI, the purpose of the evaluations is to inform policy and program improvements.

In order to create greater consistency between evaluations conducted by different agencies, and as required by statute, WTECB established standards for the program evaluations. The standards for the first round of evaluations include:

1. **Data**--Agency evaluations should use common data elements and definitions developed as part of PMCI.*
2. **Methodology**--Agency evaluations should include the relationship between program characteristics and post-program results for former participants and include measures of program results developed as part of PMCI.

Agencies should use widely recognized scientific procedures, such as random samples, to ensure the validity and reliability of findings, and common survey questions and data match techniques, as appropriate, for comparability.

3. **Scope**--Agency program evaluation reports should present findings from targeted research on sub-components of programs such as fields of study or particular education or training strategies that are of interest to them.
4. **Frequency**--Agencies should report on program evaluations at least every two years (required by SSB 5992).
5. **Use**--The purpose of the agency evaluations should be to enable policy improvement. Agency evaluation reports, and operating plans and progress reports (required by

SSB 5992), should include information on how the agency has or will use evaluation findings for policy review and program improvement. Operating plans should indicate the program evaluations that are planned for the following year.

6. **Format**--The reports should be written in narrative accessible to a lay audience and include information on: 1) the issue or question studied and the approach used to study the issue; 2) significant findings with supportive evidence; 3) policy implications; and 4) an appendix on methodology and other items as appropriate; e.g., data tables and survey instruments.

** Agency program evaluations reported in 1996 are not expected to include specific standards such as data definitions or performance measures that are developed after the research design has been completed.*

The following are brief descriptions of the three evaluations.

- ***Employment Security Department***

The Employment Security Department's evaluation of Job Training Partnership Act Titles II and III addresses two questions: 1) "Is there an association between the characteristics of the participants (such as education level or prior work history) and the type of training they receive? and 2) "Is there an association between the training they receive and subsequent employment and earnings?" The Department finds participants with weak academic skills tend to receive remedial education, and classroom occupational skills training is associated with higher wages. The gain in wages associated with skills training is highest for youth participants.

- ***Office of the Superintendent of Public Instruction***

OSPI's report evaluates results for students who had completed at least 360 hours (about four courses) of secondary vocational-technical education. The evaluation addresses the following four questions: 1) "How does the post-high school experience of vocational completers compare to other high school graduates?" 2) "How well prepared are these students for their next educational experience?" 3) "What programs do these students enroll in as they enter community and technical colleges?" and 4) "How should state evaluation and information systems be structured so that high quality information is available for teachers, parents, and other interested educational audiences?"

OSPI finds that during their first year out of high school vocational completers are more likely to work and more likely to attend a community or technical college than are other students. Counting both two- and four-year institutions, vocational completers are just as likely to attend college as are other students. Among those in college, vocational completers are less likely than other students to take remedial courses in basic skills. Among vocational completers attending a two-year college, preliminary results show that most enroll in trade and industry programs. The research also indicates the importance of

continuing to make improvements in the quality and availability of the student data maintained by school districts.

- ***State Board for Community and Technical Colleges and the Advisory Council on Adult Education***

SBCTC and the Advisory Council on Adult Basic Education report a joint evaluation on workers upgrading their basic or occupational skills at a community or technical college. The key findings are that some 24,000 currently employed workers take college level courses to upgrade their job skills each year and about 2,500 take basic skills courses. Most of these workers attend college every few years, attend part-time, and nearly half attend at night. In most cases, employers do not pay the cost of the training. Most of the workers are satisfied with the quality of training and the related support services, although about one-third of the workers are dissatisfied with the availability of classes and with advice on course selection. The number of workers enrolled to upgrade job skills in college level courses has been declining by five percent per year. In contrast, the number of workers enrolled to upgrade basic skills has been increasing by five percent per year.

Beyond their specific findings, the three evaluations will contribute more broadly toward building a system of accountability. This is the first time these three agencies have simultaneously applied similar research methodologies for the purpose of informing policy and program improvement. This experience will provide valuable information as the workforce training and education agencies continue to create a system that uses evaluative research for continuous improvement. This ongoing effort will build greater data and methodological consistency across agencies, and perhaps most importantly, will lead to greater application of research for the purpose of informing policy and program decisions.

**Job Training
Partnership Act**

Program Evaluation

1996

**Washington State
Employment Security Department**

TABLE OF CONTENTS

	PAGE
Executive Summary	A-1
Introduction.....	A-3
General Information.....	A-4
Categories of Data.....	A-4
Data	A-5
Methods.....	A-6
Definitions.....	A-7
Findings	A-8
Participant Characteristics and Services Received	A-8
Service Types and Post-Labor Market Outcomes.....	A-10
Employment Status	A-10
Earnings	A-10
Findings--Title II-C: Youth Participants.....	A-11
Participant Characteristics	A-11
Service Types and Post-Labor Market Outcomes.....	A-13
Findings--Title III Participants: Dislocated Workers.....	A-15
Participant Characteristics	A-15
Service Types and Post-Labor Market Outcomes.....	A-16
Conclusion	A-17
Appendix A: Definitions of Training Activities	A-19
Appendix B: Variables and Definitions.....	A-20

EXECUTIVE SUMMARY

Background

Pursuant to RCW 28C.18.090, the Employment Security Department conducted an evaluation of the Job Training Partnership Act's (JTPA) primary program activities. They are Title II-A, which serves economically disadvantaged adults; Title II-C, which serves economically disadvantaged youth (generally between ages 16 and 21); and Title III, which serves dislocated workers (those who lose their job due to plant closure, mass layoff or were employed in a declining occupation).

The goal of the JTPA programs is to improve the employability of participants. In the case of the two adult programs, the clear expectation is that they will get the skills they need and get a job. In the case of the youth program, the strategy must depend on the circumstances of the youth. For those who have not yet graduated from high school, the goal is to help them complete their education. For those who have graduated, our expectation is that participants either get a job or go on to postsecondary training.

Although the services vary for each program, all involve three basic kinds of activities:

1. **Skills training**--this is either offered in a classroom setting, generally through a community or technical college, or through an employer; for youth, this is most often a work experience in the public sector; for adults, this is typically an on-the-job training activity arranged with a private employer.
2. **Remedial education**--this is generally for those who have not graduated from high school or who have poor English language skills.
3. **Job search assistance**--this might be a class in how to look for a job, a job club activity with phone banks and peer support, or job development involving a counselor making connections with employers on behalf of the participant.

Research Design

The design of the evaluation was based on consultation with the 12 service delivery areas that actually provide JTPA services locally and staff of the Workforce Training and Education Coordinating Board (WTECB). The two primary questions addressed in this report are:

1. Is there an association between the characteristics of the participants (such as education level or prior work history) and the type of training they receive?
2. Is there an association between the training they receive and subsequent employment and earnings?

Findings

With regard to our first question, we found what we would have expected: namely, that those with weak academic skills tended to receive remedial education and the majority in every program received some kind of skills training. Although broadly supportive of a relationship between participant characteristics and services, the connection was surprisingly weak between prior work history and services. While there are a number of possible explanations for this, it is worthy of further investigation.

Our second question is really the heart of this evaluation since it involves relating outcomes to what the program did. What we found supported the investment in skills training. Although classroom skills training does not always produce rapid employment compared to job search assistance and on-the-job training, the skills gained clearly stand up over time, and are reflected in higher wages in all three programs. One additional affirmation of training is provided by the fact that the degree of earnings gain correlates with the typical skill levels of participants in each program. So we see the advantage of skills training highest in the youth program and lowest in the dislocated worker program. In other words, the more skills you need, the greater your wage gain is likely to be following training.

INTRODUCTION

This study evaluates Washington State's workforce training programs. The focus of this evaluation is on JTPA programs. We tracked terminees from program year 1993 (those who exited the program between July 1, 1993, and June 30, 1994). Our primary intent is to explore the relationship between participant characteristics and the types of services received and the relative effectiveness of different services on labor market outcomes. This report was intended to provide program operators additional information on the relative merits of the services typically provided by JTPA. We hope it will help us develop a consumer report system as required by pending federal block grant legislation.

Research Questions

In this study, we sought to explore the relationship between participant characteristics and the types of services received and the relative effectiveness of different services on post-labor market outcomes.

For example, if we know what level of education an individual has obtained, does that help us predict what type of training program(s) he/she is likely to enroll in?

Similarly, if we know what kind of training service an individual receives, does that help us predict his/her employment outcome?

These and other questions help to formulate the research questions of this study.

Question 1: Is there an association between participant characteristics (e.g. educational attainment, prior work experience) and the type of training service received?

Question 2: Is there an association between training services and employment, earnings and other related outcomes?

I. GENERAL INFORMATION

A. Categories of Data

Three major categories of data were used to address the research questions. They are:

1. Services Provided

For the purpose of this study, we examined the following workforce training services typically provided by JTPA:

- Basic Skills Training (BSK, Basic and Remedial Education)
- Institutional Skills Training (IST, Classroom Skills Training)
- On-the-Job Training (OJT)
- Work Experience/Entry Employment Experience/Private Internships (WEX for Title II only)
- Other Employment Skills Training (OES, Primarily Job Search Assistance; Title II only)
- Job Search Assistance (JSA, Title II only)
- Basic Readjustment Services (BRS, job readiness and job search services for Title III only)

Definitions of the training activities are provided in Appendix A.

2. Participant Characteristics

The following participant characteristics were used:

- Sex
- Race
- Age
- Educational status
- Limited English proficiency
- Prior work history

3. Outcomes

Our primary interest is in the program participants' post-labor market outcomes, such as employment and earnings. For this evaluation, we examined these outcomes in terms of:

- Employment status of all participants in the third quarter following program termination¹

¹ Program termination occurs when the participant leaves the program. They may or may not have successfully completed training.

- Employment status of adult participants at follow-up (thirteenth week following program termination)
- Quarterly earnings of all participants in the third quarter following program termination
- Earnings of adult participants during the follow-up week (thirteenth week following program termination)

B. Data

Two administrative data files were used in this study:

- Participant records from the state's JTPA Management Information System (MIS) data.
- Unemployment Insurance (UI) wage records.

The UI wage file was made available by the Workforce Board, but was collected by Battelle. The file contained quarterly data on earnings and hours worked (the construction of the quarterly files was discussed in Battelle's report to WTECB: 'An Outcomes Evaluation of Washington State's Major Workforce Training Programs'). We will consider anyone with reported wages to be employed, and anyone without wages to be unemployed. We know we are missing some employment and thus overstateing unemployment since not all earnings are covered by UI.

The JTPA MIS data supplied information on participant characteristics and services participants received. It also contained data on the thirteenth week follow-up survey; of particular interest to this study were employment status and earnings at follow-up. Title II-C Youth participants were excluded from the thirteen week follow-up survey because employment is not necessarily the most appropriate outcome for them. All JTPA terminees from program year 1993 were identified from the JTPA MIS file.

The original JTPA MIS file for the program year 1993 contained 10,229 records. We retained records in Title II-A, Title II-C, and Title III Governor's Reserve and substate grantee programs. Records for several smaller programs were excluded, including the Older Workers Program, Title III National Reserve Grants, and performance incentive awards. The total number of records excluded from the original MIS file was 3,488. The remaining 6,741 records were later matched with the UI wage file and used for analysis.

C. Methods

The results reported here were based on 6,741 records matched with the UI wage file. The distributions of the sample across JTPA programs are:

JTPA PROGRAMS	MATCHES
Title II-A (Adult)	2,527
Title II-C (Youth)	2,629
Title III (Governor's Reserve & Substate Grantee Programs)	1,585
Total	6,741

The thirteenth week follow-up sample was a statistically valid sub-sample of the 6,741 observations used for analysis. It was comprised of:

PROGRAMS	SAMPLE
Title II-A (Adult)	1,474
Title III	927
Total	2,401

The primary purpose of the thirteen-week follow-up is for calculating Department of Labor performance standards. There is no follow-up performance standard for youth because employment is not always an appropriate outcome. The youth performance standards are based on data at the time youth leave the program.

Of the 6,741 observations, 3,433 individuals were involved in a single training activity, and 3,319 were reported to have received multiple services. The distribution of training services by each program is presented in Table 1.

Two sets of analyses were conducted:

- Cross-tabulations (to display the association between two variables)
- Chi-square tests of independence (test of statistical significance in the association)

Results presented in this report were statistically significant ($p < 0.05$) unless specified otherwise.

We analyzed participant characteristics and outcomes based on program service types. The results showed that about half of the sample received more than one service. The procedures to handle the multiple service participation were that we first grouped services into discrete categories, and assigned each participant to one of those categories.

In the process of developing methods to classify service clusters we found that some clusters had very few participants. This is particularly true with the JTPA Title III sample. In addition, the patterns of cluster sample sizes varied from program to program.

To overcome this problem, we took into account the sample composition and sample size when we combined services. We also made sure that each combination was meaningful, i.e., grouping similar programs together. In doing so, we treated Title II-A, II-C, and Title III samples separately according to the cluster sizes and training types. This procedure resulted in seven categories for Title II-A, eight for Title II-C and four for Title III program. All our analyses were based on these service clusters.

D. Definitions

The following are the definitions of service clusters by program title.

Title II-A

1. Basic Skills Training (BSK, Basic and Remedial Education)
2. Institutional Skills Training (IST)
3. On-the-Job Training (OJT, including WEX, very few in number)
4. Job Search Assistance (JSA/OES)
5. Training (mostly IST)+ Job Search Assistance
6. Multiple Training components (mostly a combination of IST and WEX)
7. Remedial Education (BSK) + Training (mostly IST)

Title II-C

1. Basic Skills Training (BSK, Basic and Remedial Education)
2. Institutional Skill Training (IST)
3. Work Experience (WEX, including OJT, very few in number)
4. Job Search Assistance (JSA/OES)
5. Training (mostly WEX) + Job Search Assistance (JSA/OES)
6. Multiple Training components (mostly a combination of IST and WEX)
7. Remedial Education (BSK) + Training (mostly WEX)
8. Remedial Education (BSK) + Job Search Assistance (JSA or OES)

Title III

1. Basic Skills Training (BSK only, or in combination with another service component)
2. Institutional Skills Training (IST)
3. Institutional Skills Training (IST)+ Basic Readjustment Services (BRS)
4. Basic Readjustment Services (BRS) only

Although participants can only be in one service cluster for purposes of analysis, we must add clusters to get the total of those receiving a particular kind of training. For instance, the total of youth receiving WEX is the total number of people in clusters 3, 5, 6, and 7 above.

II. FINDINGS--TITLE II-A: ADULT PARTICIPANTS

The results presented below were based on 2,527 matched observations with the UI wage file. Although the sample was found to be in a variety of training components, eighty-two percent received some kind of skills training with enough people getting IST and OJT that we could look at the outcomes for each separately. In fact, if you include basic or remedial education, over 95 percent of the participants received education or training.

A. Participant Characteristics and Services Received

Table 2 presents the results of our analysis of the relationship between the participants' characteristics and the services received.

1. Gender and Services Received

The JTPA MIS file for PY 1993 terminees shows that JTPA II-A programs were largely comprised of female participants (67 percent). While females outnumbered males in all components, they were far more likely to receive their training in a classroom setting. Approximately two thirds of females received IST, either alone or in combination with some other activity. For males the comparable figure was not quite a half; instead, males were more likely to get training on the job (37.5 percent vs 27.8 percent). Although both genders were equally likely to take BSK, females more often added a skills training activity than did males. Overall then, it appears that women were proportionately more likely to receive more intensive services involving multiple components (37.6 percent versus 26.2 percent).

2. Race and Services Received

Of the 2,527 records, 1,635 were White. The sample distribution among minority groups were: 302 Black, 293 Hispanic, 108 American Indians, and 189 Asian or Pacific Islander.

Table 2 indicates that people with different ethnic backgrounds had different training needs.

- The pattern of training for Whites and Native Americans was roughly the same, both getting classroom training around 63 percent of the time, and OJT over 20 percent of the time.

- Over 70 percent of Blacks received classroom training, higher than any other group.
- As might be expected, Asians were particularly apt to receive remedial education (57.2 percent), with Hispanics next at 41 percent.

3. Education and Services Received

Among those who did not complete a high school education, over half received Remedial Education, either alone (34.6 percent) or in combination with classroom training (20.7 percent). The only surprise in this area is that the better educated (those with some college or a BA) were not more highly represented in the small number of participants who received only job search assistance.

4. Limited English Proficiency and Services Received

About 10 percent of the sample were reported to have limited English proficiency. Results from Table 2 reveal, as expected, almost 60 percent of the individuals with limited English proficiency received Remedial Education, which includes English-as-a-second-language classes. More surprisingly, they were slightly more likely to receive an OJT than those without an English language deficiency. This may indicate a willingness on the part of some employers to overlook this “barrier.”

5. Prior Work History and Services Received

Table 3 presents results between prior work history and services received. As noted earlier in the report, two indicators were used to measure prior work history:

- Lacks significant work history (Yes/No)
- Number of weeks unemployed (ranging from ‘0 week’ to ‘26 weeks’)

The results showed that 44 percent of the sample (1,113) had not worked for the same employer for longer than three consecutive months in the previous two years. And 42 percent had been unemployed for 26 or more weeks. Surprisingly, the differences in the mix of services received did not seem much affected by prior work history. Additional research will be necessary to understand why there is not a stronger relationship here.

B. Service Types and Post-Labor Market Outcomes

Table 4 enables the reader to see the relationship between the kind of service received and the subsequent employment. This is really the heart of this report. As noted earlier in the report, we measured post-labor market outcomes in terms of:

- The third quarter employment status--this was measured by looking at employer records of wages covered by UI. It does not capture "uncovered" employment, such as self-employment.
- Employment status at follow-up--this is done by a direct contact with a sample of former participants.
- Average quarterly earnings in the third complete quarter following program termination.
- Average weekly earnings during the thirteenth week following program termination (follow-up survey).

C. Employment Status

About 72 percent (1,474) were reported to be employed one quarter following termination, going down to 62 percent (2,527) in the third quarter following program termination.

Individuals enrolled in Remedial Education were least likely to be employed later (59.9 percent employed at one quarter and 53.5 percent at three quarters); however, they could increase their likelihood of being employed by 10 percent by including skills training in the mix of services received.

All other services, including job search assistance, produced relatively consistent results, ranging between 69.7 percent for classroom training and 76.5 percent for job search assistance at one quarter (the comparable figures for three quarters after termination were 60.2 percent and 63.7 percent). However, after three quarters, the added investment in multiple services became apparent. For example, 71 percent of those receiving two kinds of training plus job search assistance were still employed, showing very little drop from their employment at one quarter (74.7 percent). In other words, the additional investment in training is showing a payoff in job retention.

D. Earnings

Consistent with the employment outcomes, earnings were measured at two points in time:

- Average earnings at follow-up (thirteenth week following termination, reported as *weekly* earnings)
- The average earnings in the third quarter following program termination (reported as *quarterly* earnings)

The average weekly earnings in the follow-up week were \$270. The average quarterly earnings in the third quarter were \$3,095 (or about \$238 per week). These results are contained in Table 4-A.

In contrast to the results on employment where classroom training fared less well than other types of training, exactly the reverse is true with earnings. The earnings for the classroom training group were \$292 at 13 weeks and \$3,456 at three quarters following termination.

The policy implications of these findings are difficult to sort out. While the least expensive service (job search assistance) fares well in these data, it is presumably a reflection of the skills those participants bring to the program. Similarly, the relatively poor performance by those receiving remedial education is almost certainly explained by the additional educational barriers they faced.

It appears safe to conclude that additional training (regardless of the kind of training) pays off in a greater chance for employment and in higher earnings once employed. And the differences between kinds of training balance out when you look both at the likelihood of being employed and at subsequent earnings.

III. FINDINGS--TITLE II-C: YOUTH PARTICIPANTS

A. Participant Characteristics

Table 5 displays service distributions by participant characteristics. The results presented below were based on 2,629 case files, matched with the UI administrative wage file.

1. Participant Characteristics and Service Types

Because JTPA emphasizes serving "at risk" youth, and because one criteria of being at risk is being behind in school, it is not surprising that over half receive remedial education (53.4 percent), mostly in combination with some other kind of training. One difference between Title II-Youth and Adults in their respective service strategy is that youth were overwhelmingly directed toward WEX rather than OJT or towards public sector training opportunities.

This reflects a different approach to working with employers. In the case of youth, the lack of skills represents a deterrent to employers, which leads to a strategy of giving youth work experience in the public sector where no wages are paid by the employer. This strategy is much more suitable to those without prior work history, while the reverse is true for OJT.

2. Gender and Services Received

Title II-C was closer to an even split, at 46 percent for male and 54 percent for female. Overall, gender was not found to be related to the kinds of services received. This is a positive finding, given the persistent tendency in the overall economy for males to earn more than females.

3. Race and Services Received

The pattern described above for adults does not repeat itself in the youth program. In fact, the differences that exist tend to be relatively small.

- Black Americans were more likely to receive remedial education without subsequent training than other ethnic groups (22.8 percent compared with the average of 15.6 percent).
- Both Blacks and Asians were slightly under-represented in the multiple training category (50.4 percent for Blacks and 53.7 percent for Asians compared to an average of 60.9 percent). Neither finding is likely to be significant given the fact that many youth are not yet in the labor market. In any case, the subsequent employment and earnings results do not suggest the differences are likely to be important.

4. Age and Services Received

The data divided youth into those below 18 and those 18-21. Once again, the most surprising finding was that there were no dramatic differences in the kinds of services received based on age alone (see Table 5). The differences we did see were what was to be expected.

- People under 18 were more likely to receive Remedial Education (29.3 percent versus 21.3 percent).
- In contrast, the older group were more represented in Classroom Skills Training (16.2 percent versus 4.3 percent), although this was not a common strategy in either group.

5. Educational Attainment and Services Received

The results (Table 5) show that 75 percent of the sample did not complete high school. We found relatively small differences in the kinds of services received between individuals with a high school diploma and those without it:

- Sixty percent of individuals with less than a high school education received remedial education, either alone or in combination with some other kind of training, compared to forty-eight percent for high school graduates.
- Those with at least a high school diploma were most likely to receive training (68.5 percent in WEX and 35.4 percent in IST, including some in both). The comparable numbers for the non-graduates were 63.7 percent in WEX and 4.8 percent in IST. Here again, this is what we would expect. The apparent preference for employer based training (WEX) among youth

over classroom based training may partly be explained by the opportunity to receive compensation for the work done. However, it also undoubtedly reflects differences in maturity and skill levels compared to the adult population, resulting in youth getting a subsidized and structured work setting.

B. Service Types and Post-Labor Market Outcomes

1. Employment Status

For this sample, only the employment status in the third quarter following termination was used because the thirteen-week follow-up survey did not include youth. Table 4 presents employment outcomes across service categories.

Because many youth are returning to school rather than looking for work, looking at employment rates is misleading. With that caveat, it is interesting to contrast the results for employment and earnings of youth with those of the adults.

Contrary to the adults, employment rate for Classroom Skills Training was 62 percent, appreciably higher than any other kind of training. By contrast, job search assistance was the least successful at only 41.2 percent (when not coupled with other training) followed closely by remedial education at 42.3 percent.

This finding would have greater policy significance if large numbers of youth received job search only, but they did not. Only five percent of the youth sample received this kind of training. It does suggest employers place a high weight on job skills for youth since few have any significant work history.

2. Service Types and Earnings

- The average quarterly earnings for the Title II-C Youth sample were \$1,741 (Table 4-A), significantly lower than that of the adult sample. This reflects not only a lack of prior work experience, but also a higher percentage of part-time employment. Unfortunately, we do not have data to verify the latter point.

In the case of earnings, the results confirm the findings of the adult program. Once again, it is Classroom Skills Training that produces the best earnings. In fact, at \$2,700 per quarter, it is almost \$500 higher than the next highest service cluster, which is Classroom Skills Training combined with other training. And, it is fully \$1,000 higher than the highest service cluster that does not include Classroom Skills Training as a component.

IV. FINDINGS--TITLE III PARTICIPANTS: DISLOCATED WORKERS

Because very few individuals in this sample received OJT (WEX services are not allowable), we were able to combine all types of skills training into a single category of service. Since the majority of them received classroom skills training, we will use the label Institutional Skills Training to apply to the group.

The results presented below were based on 1,585 participant records, matched with the UI wage administrative file. The sample includes both those in the Governor's Reserve program and those in the substate grantee program.

A. Participant Characteristics and Services Received

The results discussed below are shown in Table 8.

1. Gender and Services Received

About two thirds of the Title III sample (61 percent) were males, reversing the gender distribution for the Title II-Adult sample (Table 2). Over half the women received a combination of skills training and readjustment services (or job search assistance). This is the same pattern as we saw in Title II-A, suggesting women tend to get more intensive services than men.

2. Race and Services Received

Because this population is almost 90 percent White, there is little point in looking at the other race categories separately. And taken as a whole, they reflect a mix of services very similar to that of Whites.

3. Educational Attainment and Services Received

Clearly, the Title III population is much better educated than their counterparts in Title II. 39.5 percent have more than a high school level education, while fewer than 10 percent have less than a high school degree. For those with at least a high school diploma, there are no substantial differences in the service mix.

4. Prior Work History and Services Received

Because dislocated workers must have been employed to qualify, it is not surprising that only two percent (eleven) of the sample lacked a significant work history. Looking at weeks unemployed, there are essentially no differences in how participants were served.

B. Service Types and Post-Labor Market Outcomes

1. Service Types and Employment Status

- Looking at Table 10, we get yet a third view of the relationship between service and employment. In this case, the advantage once again goes to skills training (80.7 percent employed at 13 weeks and 75.2 percent with covered wages after 3 quarters). Other services were not far behind for both follow-up periods.

2. Service Types and Earnings

It is in the area of earnings that this population reflects the advantages of their education and work history. The average wages are substantially higher than Title II adults, even for those in the least successful category of remedial education. The average quarterly earnings after nine months were \$5,060. The weekly earnings at the thirteenth week were \$419.

This study shows that it is skills training that produces the highest earnings at \$5,507 for the third quarter and \$477 for the thirteenth week. (Table 4-B). But, because of the significant work experience of this group, even those that need basic education receive higher wages than the Title II-A service component with the highest wages (\$4,568 versus \$3,456).

CONCLUSION

Title II-A

Approximately two thirds of these disadvantaged adults are female, and 56 percent lack any significant work history. Further, 21 percent have not completed high school.

The services to respond to this population typically consisted of training (over 80 percent received some form of training). This occurred either in a classroom setting (most often provided by a community college or vocational technical college) or in a work setting (provided by the employer). There were some surprises in looking at who got what service. For instance, 45 percent of those that had not completed high school did *not* get basic skills training. Also, there did not appear to be a strong relationship between a participant's prior work experience and the kind of training they received from JTPA.

Title II-C

This is a program for disadvantaged youth. The majority are female, and 75 percent have not completed high school; just over half are eighteen years old or older. The percentage of minorities (just over 40 percent) is higher in this program than either of the JTPA adult programs.

The two primary services are:

- work experience, which involves placing a youth in a public sector job in a setting where skill development can occur.
- basic skills training, which is academic training designed to return students to the grade level of their peers.

Of course, for those ready to go into unsubsidized work, there is job search assistance. The key to a quality program is linking the education and training together. An even stronger linkage can be achieved by tying the two activities to the participant's academic or in-school work.

Title III

The data clearly reflect the very different nature of the dislocated worker population. It is far more representative of the working population as a whole. It is the only JTPA program serving a majority of males. They are older and less likely to be minorities with much fewer of the barriers to employment that characterize the Title II programs.

Overall Outcomes

It is not surprising then, that the services they receive reflect this difference. This population needs skills upgrading or retraining, and help finding a new job. They have already proven their value as workers. They are looking for an opportunity to return to work. However, they

have a special problem--they have lost a job where they had seniority and a relatively high wage. For this group, getting back to that wage will be a challenge, even with training. Nevertheless, the wages they command are far higher than the Title II adults (\$5,060 per quarter versus \$3,095).

Looking broadly at the services provided and the kinds of individuals in the three programs, the fit was pretty good. The more disadvantaged the population, the more likely they were to get remedial education. Conversely, those with the most education and training received more assistance with their job search. This is illustrated in the chart below.

	Title II-C Youth	Title II-A Adult	Title III Dislocated Workers
Basic Education	53.4	25.5	5.2
Training	69.8	82.2	68.5
Job Search	37.6	26.1	72.9

Note: Totals add to more than 100 percent because many participants received more than one kind of service.

In terms of the outcomes, there is clear support for the value of skills training provided by our community and technical colleges, as well as private colleges. The training is valued by employers as evidenced by the wages. This is particularly impressive when you compare the wages of classroom-based training with that provided by the employers themselves (OJT). Although they are training for different jobs, it is interesting that the wages for Classroom Skills Training are still higher nine months later.

Determining what program changes should be made based on these data is more difficult for the youth program and for dislocated workers. Because the design of youth programs has been evolving in the direction of a program with goals balanced between education and employment, there has been an increasing focus on a stronger educational component since program year 1993. In the case of Title III, there are such crucial differences in the industries affected from one year to the next that it is less clear whether the lessons learned from one industry would apply to another industry. The differences in education and the transferability of skills of an ex-Boeing worker and a timber worker is likely to be dramatic.

Appendix A: DEFINITIONS OF TRAINING ACTIVITIES

BSK - Basic Skills Training: Instruction normally conducted in an institutional setting and designed to upgrade basic skills prepare the individual for further training, future employment, or retention in present employment. It includes remedial reading, writing, mathematics, literacy training, study skills, English for non-English speakers, bilingual training, GED preparation (including computer-assisted competency training, and school to postsecondary education transition).

IST - Institutional Skills Training: Instruction conducted in an institutional or work site setting designed to provide or upgrade individuals with the technical skills and information required to perform a specific job or group of jobs such as auto mechanics, health services, or clerical training. It includes job specific school-to-work/apprenticeship programs, on-site industry specific training, customized training, entrepreneurial training, internships, and pre-apprenticeship training.

OJT - On-The-Job Training: Training in the public or private sector which is given to an individual while she/he is engaged in productive work and which provides knowledge or skills essential to the full and adequate performance of the job.

WEX - Work Experience - Entry Employment Experience/Private Internships: Work Experience is a short-term or part-time work activity in the public or not-for-profit sector, which provides an individual with the opportunity to acquire the skills and knowledge necessary to perform a job, including appropriate work habits and behaviors. For youth only, Entry Employment Experience or Private Internships is a formal opportunity to examine or investigate employment typically at private, for-profit work sites.

OES - Other Employment Skills Training: (Title II) It includes activities such as pre-employment/work maturity training and non-job-specific school-to-work/postsecondary programs (does not include job search assistance or basic readjustment services).

JSA - Job Search Assistance: (Title II only) A service that helps a participant seek, locate, apply for, and obtain a job. It may include job finding skills, orientation to the labor market, resume preparation assistance, job development, referrals to job opening, job clubs, vocational exploration, and relocation assistance.

BRS - Basic Readjustment Service: (Title III only) It includes services designed to provide basic readjustment assistance such as orientation, skills determination, pre-layoff assistance, job development/referral assistance, and job search to eligible dislocated workers.

Appendix B: VARIABLES AND DEFINITIONS

Age--Age contained the following categories:

Under 18	18-21
22-29	30-54
55 and over	

Educational Status--The original definition was 'Highest school grade completed.' For the purpose of our analysis, we reconstructed the variable into the following groupings:

'No school grade completed'	'Less than high school'
'High school graduate'	'Some college'
'Bachelors or beyond'	

Prior Work History--Two variables were identified from the JTPA MIS file:

1. **Lacks significant work history**--An individual is reported to lack significant work history if she/he had not worked for the same employer for longer than three consecutive months in the two years prior to application.
2. **Number of weeks unemployed during the prior 26 weeks**--The original coding for 'number of weeks unemployed...' ranged from 0 week to 26 weeks. We recoded the variable into the following discrete categories:

'Never unemployed'	'Unemployed 1-6 weeks'
'Unemployed 7-12 weeks'	'Unemployed 13-18 weeks'
'Unemployed 19-25 weeks'	'Unemployed 26 weeks'

Third quarter employment status following program termination--the UI wage file did not have a data element that could be used directly to measure quarterly employment. We then used the quarterly wage information to construct the variable. An individual was recorded 'employed' if the UI covered employment in that quarter showed earnings greater than zero. Otherwise, the individual was recorded 'unemployed.'

Youth competencies attained--the following data elements were extracted as indicators of youth competencies attained from the JTPA MIS file. All these variables were recorded as:

'1=Yes' and '2=No':
Youth Employability Enhancement Terminations ('Yes' or 'No')
Attained Preemployment/ Youth Employment Competency
Attained Basic Education
Attained Institutional Skills/Job Specific Skills
Completed Major Level of Education

**Secondary
Vocational Education**

Program Evaluation

1996

**Washington State
Office of the Superintendent of Public Instruction**

TABLE OF CONTENTS

	PAGE
Introduction.....	B-1
Evaluation Questions Studied.....	B-2
Description of the Procedures Followed.....	B-2
Significant Findings.....	B-2
Results.....	B-3
Remedial Needs	B-4
Summary and Conclusions	B-6
Recommendations for Program and Management Improvement	B-7

INTRODUCTION

This evaluation study used the information collected by a graduate follow-up feasibility study to address an evaluation mandate for operating agencies of the state training system called for in Substitute Senate Bill 5992. This study created outcome measures based on student experiences in their first year after high school. Data matches were completed one full year after the end of the 1993-94 school year. The evaluation questions addressed the preparation of students for their next educational experience and the type of programs these students enroll in at community or technical colleges. Information was also gathered regarding the need for remediation in basic skill areas for students who had completed a vocational program of study .

The methods used in this study were successful in locating 93 percent of the students in participating districts who were identified as completers. Over 40 percent of the students located went to work without taking additional training. Thirty-six percent of these students enrolled in a community or technical college, and 13 percent were attending a four-year college during their first year after graduating from high school. More than one half of the students who supplied program information at the community college they were attending had enrolled in trade and industry courses.

The study also successfully addressed questions about evaluation methodology. While there were limitations to this study based on a lack of complete data, procedures will be put into place during a second year that would address these deficiencies. It is our recommendation to continue to use the graduate follow-up methodology to address evaluation questions about vocational students. The quality of the information will continue to improve as districts become more familiar with the information they need to collect and as trend information becomes available over the next few years.

EVALUATION QUESTIONS STUDIED

The information collected from the Graduate Follow-up Study described below was analyzed to address three evaluation questions that are important in understanding the effectiveness of vocational education for students who complete 360 hours (about four courses) in a particular occupational or skills emphasis. These questions were addressed as part of a secondary analysis of the data collected from participating districts in a voluntary feasibility study that has been conducted for the past three years. These questions were:

- How does the post-high school experience of vocational completers compare to other high school graduates?
- How well prepared are these students for their next educational experience?
- What programs do these students enroll in as they enter community and technical colleges?

Another question is particularly important as consideration is made of the type of information necessary to answer questions about how to successfully prepare students for the working environment of the next century.

- How should state evaluation and information systems be structured so that high quality information is available for teachers, parents, and other interested educational audiences?

DESCRIPTION OF THE PROCEDURES FOLLOWED

Past graduate follow-up studies have been based on surveys sent to students from each graduating class. In these surveys students were commonly asked whether they were currently attending college, whether they went directly to work after high school and how successful their high school was in preparing them for this important next step in their life. These studies were characterized by high costs, low rates of return, and over-reporting of college attendance. In this study the primary question of how well high schools prepare students for their next step was approached in a quite different way. A student roster was extracted from each district's computerized student record system. A social security number (SSAN) was available in most local school districts, and this unique student identifier provided the basis for an electronic match against the student record systems at colleges, universities, and the Employment Security Department.

By joining files from each of these sources for the graduating class of 1994, it was possible to produce one database with a wealth of information about students' next step after high school and, at least initially, how well they did once they got there. For the third year participating school districts were able to supply student data as a fixed or delimited ASCII file in PC compatible format. Although each district has its own student record format, field layouts supplied by each district resulted in information being readily interpreted and easily added to a cumulative database. Recent versions of databases and statistical packages have become very powerful in their search, classification, analysis, and graphical capabilities. These advances play an important role in the thoroughness and economy necessary to analyze the massive amounts of data involved.

SIGNIFICANT FINDINGS

The primary purpose of the Graduate-Follow-up Study is to return information to each participating district and high school about the success of the students in each graduating class. By gathering information using the procedures described above, it was possible to create a set of quality indicators that will help schools consider how successfully students are prepared for their first educational or work experience after high school. System indicators are being developed for schools in many states as a part of the new assessment system called for in state and national reform initiatives. The Graduate Follow-up Study is one attempt to develop indicators of school quality and reinforces the work being done at the school, district, and state level in Washington and in other states across the nation.

Presented below is a set of the preliminary indicators for the 4,454 students reported as vocational completers in the districts that participated in our voluntary feasibility study. These students comprise about one fourth of the 19,178 students in participating districts who graduated with the class of 1994.

Thirty-one districts participated in this study representing all regions of our state. Large and small districts were involved as were two of the occupational skills centers. It is important to point out that while nearly a third of the students in the state who graduated with the class of 1994 were included in this study, the data cannot be considered technically representative of all students' experiences since districts participated on a voluntary basis. Despite this limitation, the size of the sample makes the data of interest and, to the researcher's knowledge, this represents the most complete information collected in the state. Plans are in place to address the limitations of this sample as part of the study of the class of 1995.

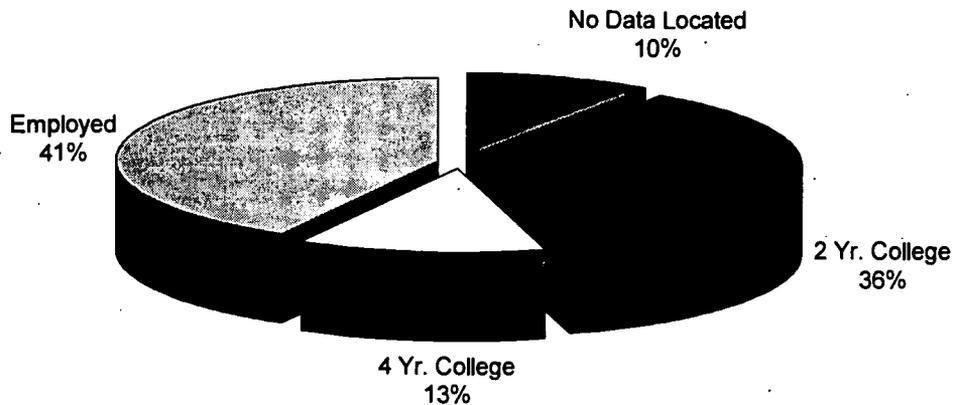
RESULTS

Table (on page 4) presents a graphic that describes the post-high school experience of students during their first year out of high school. It is from this information that program evaluators can begin to create quality measures for schools as well as provide accurate information about how successful programs and practices are in preparing these students.

Some examples:

- Of the vocational completers who supplied a social security number, 93 percent were located. This percentage was higher than the percentage for the total student sample where about 81 percent of the students were located. Many students had engaged in more than one activity during their first year after graduation. For example, more than 22 percent of vocational completers enrolled in a community college and worked during the preceding year.
- Table 1 provides a graphic display of the student sample after those without SSANs were excluded. This represents a best estimate of percentages of students in each category. About 42 percent of the students classified as vocational completers were employed *only* during their first year out of high school. This compares to 26 percent of all students in the sample.
- Table 1 also presents information about students who went to college at a four-year university, a community or technical college in the State of Washington. Nearly 36 percent of vocational students went to a community or technical college compared to slightly less than 30 percent of all students. A smaller proportion of vocational students went to four-year colleges than was the case for all students (12.7 percent vs 16.7 percent)

Table 1
Post High School Efforts of Vocational Students

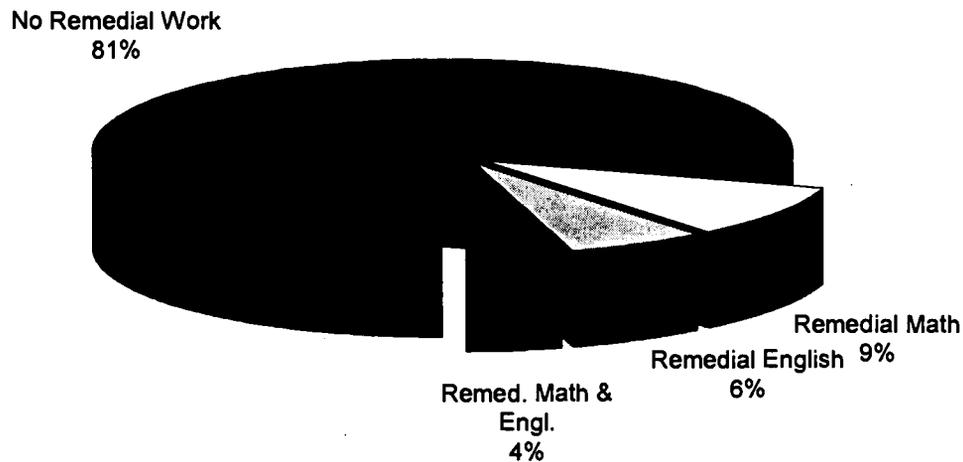


Students without social security numbers have been excluded. Students employed and attending college were considered college only. Students attending two and four year college were considered four-year college only.

REMEDIAL NEEDS

- Vocational students who attend college are less likely to need remedial work in English and math than are other students (Table 2). Slightly less than 19 percent of the vocational students were required to take remedial courses in basic skills after enrolling in college compared to more than 23 percent of all students. Nearly nine percent of vocational students required remediation in math, slightly more than five percent in English and about four percent needed help in both areas. More females needed help in math, and more males needed assistance in English. This information will need some refinements as this study expands. Not all four-year colleges supply remedial information. One institution sends students with remedial needs to community colleges. One institution reports no students with remedial needs. Whether all technical programs require the same entry level in basic skills as universities also needs to be determined.

Table 2
Remedial Coursework for 1994 Vocational Graduates

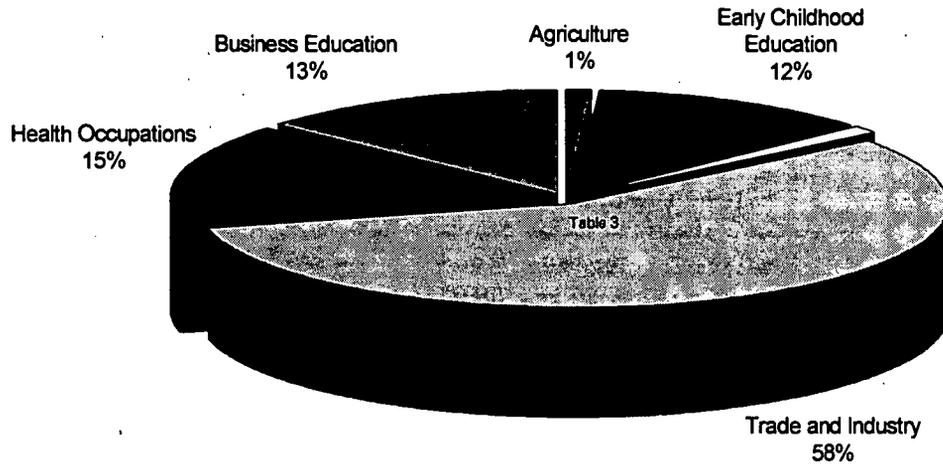


Not all four-year colleges provide remedial information.

Additional information is available to provide perspectives on the performance of various subgroups of students. These data contain important information about the extent to which we are achieving equity in our educational programs and practices.

Declared Program Enrollment. The third evaluation question requested information about the declared program enrollment of vocational students at the community and technical colleges in our state. Table 3 presents the information we were able to produce regarding this question. Several issues need to be addressed to set the context for this information. We are confident this question can be addressed through this kind of follow-up study. We are equally certain that the information presented here should be considered preliminary and perhaps would be best used to determine what steps are necessary to collect more complete information in a subsequent study. The information presented is for those districts that participated and were able to provide information to us about their vocational completers.

Table 3
Occupational Areas of Study at Community Colleges



- One percent of the students enrolled in agriculture programs at the community college.
- Early childhood education courses attracted 12 percent of the students.
- Trade and industry was the largest category with 58 percent of the reporting students enrolled.
- Health occupations 15 percent
- Business education 13 percent
- The remaining students who reported a program code were in other categories.

SUMMARY AND CONCLUSIONS

The information presented in this paper comes from two research projects conducted during the past year as part of the Graduate Follow-up Study. The initial study conducted with 22 volunteer districts was supplemented by a study that added nine more districts and was conducted with Battelle under contract with the Workforce Training and Education Coordinating Board. For the purposes of this evaluation report, these two separate data sets were combined to address the evaluation questions presented in the first section of this paper. This process involved some risks in evaluation methodology that need to be addressed in

subsequent evaluations. As agency staff work with high schools and school districts across the state, the completeness and accuracy of this information will improve. The study for the class of 1996 will offer this technology-based methodology to every high school in Washington. As districts become more familiar with computer technology and as it is demonstrated that this method can replace the multiple reporting processes now required of schools, dramatic improvements can be made in the quality of the information available for the decision making process at the school, district, state, and legislative levels.

The most basic principle in program evaluation is to define the evaluation questions before preparing the design and data collection procedures that will be used. This principle was not adhered to here, a not uncommon experience for evaluators. In future studies, work needs to continue in defining the evaluation questions from each educational audience. In this way, information gathering processes will be refined and produce the kind of information necessary for sound educational decision making.

RECOMMENDATIONS FOR PROGRAM AND MANAGEMENT IMPROVEMENT

The ability to locate, through data matches, a large number of students who had completed at least 360 hours of instruction in secondary vocational education programs was positive. That 93 percent of these persons were employed and/or engaged in a higher education program at the two-year or four-year level was a finding school personnel and community members can use to reinforce and improve school-to-career offerings and strategies which prepare students for work and further education.

The feasibility of doing follow-up of graduating classes, including vocational completers, has been tested over the past three years with additional schools participating each year. It is believed that this method of evaluating students post-high school activities and accomplishments will be more cost effective and give schools data needed to evaluate the outcomes of their program efforts for all students.

Technical assistance from this agency is needed to encourage and assist school district personnel to maintain the common data elements needed and to handle various coding issues in a consistent manner, in order to provide quality information as a tool for program evaluation and continuous improvement. Having consistent data from a greater number of schools will allow analysis of additional subsets of participants such as gender and ethnicity, relationship between training and further education and/or employment, and levels of job types in working toward the goal of high skills/high wages

Job Skills Enhancement

***An Evaluation of Publicly Funded
Postsecondary Workforce Training and
State and Federally Funded Basic Skills
Training for Workers Upgrading
Their Job Skills***

1996

**Washington State
State Board for Community and Technical Colleges**

TABLE OF CONTENTS

	PAGE
Executive Summary	C-1
Evaluation Issues and Approach.....	C-4
Summary of Findings.....	C-5
Policy Implications	C-13
References.....	C-14
Appendix A: Community College Job Upgrading/Retraining Survey	C-15
Defining the Degree of Certainty in Using These Survey Findings	C-17
Community College Job Upgrading/ Retraining Survey.....	C-20
Appendix B: Statistical Analyses of Post-Program Wage.....	C-29
Appendix C: Focus Group Interviews	C-30
Student Focus Group Discussion Guide.....	C-32

EXECUTIVE SUMMARY

Evaluation Issues and Approaches

This study meets Senate Bill 5992 requirements for biennial program evaluation by the Washington State Board for Community and Technical Colleges (SBCTC) and the state's adult basic education providers.

SBCTC chose to research the job skills enhancement training area because service to this population is an important mission of the community and technical college system. It is an area which has received less attention than job preparatory training or retraining (HB 1988).

Data sources for this analysis include:

- A survey of 1,151 students at eight representative colleges was completed during November 1990. The survey included workers enrolled in developmental and college-level courses (Nolte).
- Focus group interviews with workers enrolled at six community colleges in spring 1990 (Borton).
- Data matches with the Unemployment Insurance system wage records for the 13,200 basic skills and college-level students enrolled for job skills enhancement who left their college in 1991-92 (Simmons).
- College records of the approximately 27,000 workers enrolled to upgrade job skills each fall quarter from fall 1990 to fall 1995.

Key Findings

- Job skills enhancement students typically enroll in state-supported courses to meet their upgrading needs. Their approach to the college is much like a "commodity" purchase. That is, they enroll if the college has a product which they need at the time. The majority have used the college every few years to meet their upgrading needs. Most enroll part-time with nearly half taking classes only at night. The majority enroll without the direct support of employers. Just 27 received tuition reimbursement. Eleven percent enrolled in employer contracted courses.
- The vast majority of workers (88 percent) enroll in classes funded by tuition and state resources, not in employer funded courses.
- Workers take courses from across the whole curriculum including math, English, psychology, and foreign language, as well as occupationally specific courses.
- Workers were satisfied with the quality of training and the resources provided to support training.

- Some 35 percent of workers were dissatisfied with the availability of classes they need for upgrading. While the majority were satisfied with advising assistance related to course selection, 30 percent see a need for improvement in that area as well
- The number of workers enrolled in job skill enhancement college-level classes has declined by five percent a year since the beginning of this decade. As of fall quarter 1995, some 24,000 workers are taking college-level courses to upgrade their job skills.
- The number of workers enrolled in job skills enhancement at the pre-college level has grown by five percent a year, but there still is a need to increase service. Basic skills enrollment of workers represents 10 percent of the upgrade training-- about 2,500 students in colleges. Currently a unit record database does not exist to provide a similar count for community-based organizations which provide basic skills training. The State Literacy Survey (SALS) found that 57,000 employed adults needed such training as they scored at the first or second skill level in the SALS. This difference between the number now enrolled and the need represents a substantial opportunity to increase service.
- The typical \$11 an hour post-training wage earned by workers upgrading at the college-level and the \$8 an hour at the basic skills level cannot be attributed as a value-added by the program. These post-training wages reflect background characteristics of students rather than the impact of recent training at the college. For this reason, wage data, though included in the report, are not presented as a measure of the programs outcomes.

Policy Implications

Job skills enhancement students, especially those who enroll in college-level courses, represent life long learners who use the college and other training resources as a means to increase their satisfaction with their own work performance or increase their opportunities for better work assignments. Workers rate their college experience positively.

The state can assure that colleges can effectively meet the needs of more workers while at the same time assuring continued focus on meeting job preparatory and transfer demands by:

- Finding new funding sources to increase the availability of evening and flexible enrollment courses at the colleges.
- Continuing to invest in a technology infrastructure which will provide access in flexible formats for working adults.
- Developing a mechanism for on-going "customer" feedback related to course variety, quality of instruction and extent to which incumbent workers are satisfied with college instruction.

While colleges have been increasing their service to workers at the basic skills level, there is considerable opportunity to provide more service. The following strategies can address the needs of workers at the basic skills level.

- Colleges can recruit from underrepresented industries: manufacturing; government; personal services; finance; construction; transportation; and utilities.

- Since 27 percent of the basic skills upgrading students work for the larger employers, those employers could work with basic skills programs to develop work-based basic skills training at the employer work site.
- Smaller employers and labor groups representing the agriculture, business, social and health services, and sales industries could form consortiums for the purposes of sponsoring industry-based basic skills training even though too few students from a single employer are enrolled to provide work-site training.

Colleges could better meet needs of those seeking to enhance their work skills by:

- Providing better advising for workers.
- Gathering “customer feedback” related to course variety, quality of instruction and extent to which workers are satisfied with their college instruction.
- Targeting workers in all industry areas, not just the service industries, which is the focus at present.
- Increasing employer contract funded training.

EVALUATION ISSUES AND APPROACH

This report meets the requirements of Senate Bill (SB) 5992 for “biennial program evaluations” by “operating agencies.” The Washington State Board for Community and Technical Colleges (SBCTC) conducted this research to provide data of use in directing the future of community and technical college training for employed workers. This report serves to focus attention both for those workers who enroll to upgrade skills at the college-level and those in pre-college adult basic education or English-as-a-Second Language programs. A more comprehensive study would have included data on basic skills worker training provided by community-based organizations. The data systems necessary for such analyses have just recently been developed. While future studies will be advantaged by inclusion of these programs, this report is necessarily limited to training within the community and technical college system.

Several factors combine to make incumbent worker training the focus of this first biennial evaluation report:

- Service to workers in college-level courses has declined throughout the 1990s. Part of that decline reflects the impact of the Baby Bust-- the declining size of the population now in their 20s. Much of the decline, however, represents a shift of college resources to meet the demand for more job preparatory and transfer training.
- The Workforce Training and Education Coordinating Board (WTECB) staff have reported an increased need for job skills enhancement training. A comprehensive understanding of the nature of upgrade training will facilitate the development of policy needed to best respond to that need.
- The literature on basic skill training suggests that better retention of students results when basic skills training is offered in a specific context such as the family or work environment. While many basic skills students are not in the workforce, policymakers would be aided in directing resources to working students by knowing more about their employment status.

“Job skills enhancement students” refers to employed adults enrolled in courses to upgrade their current job skills. Some workers enroll in college for the purpose of making a career change². These job preparatory working adults are not included in this analysis. Their outcomes were examined by the WTECB staff as part of their review of programs under SB 5992. Even though some enrolled workers are excluded from this analysis because they are considered job preparatory, the term “worker” will be used in this report as synonymous with “job skills enhancement students.”

² While most students can be clearly identified as either job preparatory or upgrading, a gray area exists for some students. SBCTC arbitrarily categorizes students in the gray area as upgrading if they fail to declare a major and if their college codes them as other than job preparatory.

Workers typically enroll part-time and may take a single course rather than pursue a program of study.

This report summarizes research conducted over the past five years. The wage and employment outcomes data was gathered in fall 1993³ and analyzed this past spring. Data sources include:

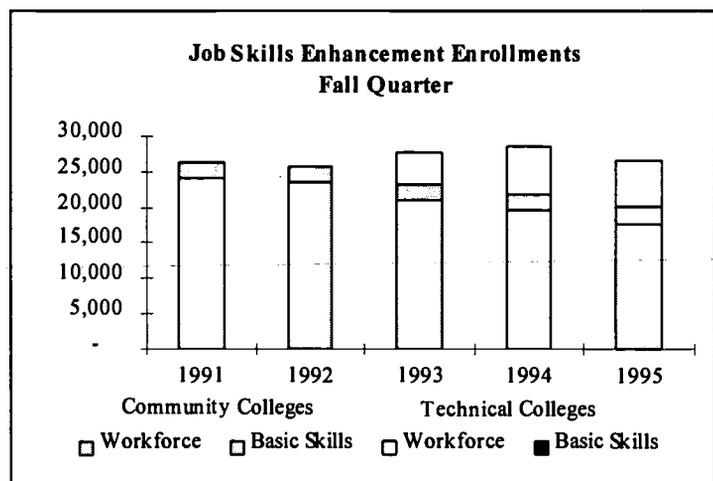
- In-class survey of 1,151 upgrading students at 8 representative community colleges, conducted in November 1990 (Nolte).
- Focus group interviews with workers enrolled to upgrade job skills at six community colleges in spring 1990 (Borton).
- Match between college records and the Unemployment Insurance system wage records for all 13,200 upgrading students who left the college during the 1991-92 academic year (Simmons) and of all respondents from the sample survey.
- Enrollment records for all upgrading students from fall quarter 1990 to fall 1995.

SUMMARY OF FINDINGS

Trends in College Provided Job Skills Enhancement Training:

In fall 1995, 26,721 workers enrolled to improve their job skills. They represented 12 percent of the total enrollment for fall, down from 16 percent of total in fall 1990. Ten percent of that group was enrolled in basic skills instruction-- literacy training for those with less than ninth-grade skill levels or English-as-a-Second Language instruction.

The other 90 percent were enrolled in a wide variety of college level courses or a combination of developmental and college-level courses.

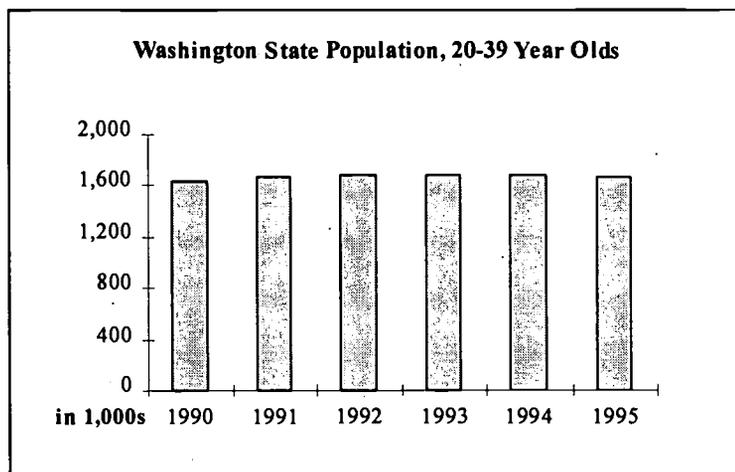


Compared to 6 years ago, community colleges served 4,500 fewer workers in fall of 1995. All of that decline has been in college-level instruction. The basic skills effort for workers has grown about five percent a year over the same period. This decline is due almost entirely to factors impacting the colleges' ability to meet the demands of the community.

³ These data were for workers leaving the colleges during the 1991-92 academic year. As this was the first year that technical colleges formed part of the new system, wage and employment data for those colleges are not included.

Throughout the 1980s and 1990s, the demand for spaces at community and technical colleges has exceeded the resources needed to meet the demand. As a consequence colleges have had to make difficult choices, not offering some classes so that other courses meeting other needs could be offered. As a result of these choices, the opportunities for worker training have declined.

There has been little change in demand for upgrade training. The pool of 20 to 39 years of age group most likely to enroll to upgrade job skills has stayed about the same size since 1990. While employment rates have varied for this group, the pool of employed 20- to 39-year-olds has also remained fairly constant. Thus the fall off in worker enrollment is not due to shifting population dynamics, but shifting priorities at the college.



Colleges likely could have maintained worker enrollments at 30,000 (estimate for community and technical colleges combined in 1991) if funds to pay instructors' salaries had not been needed to meet the demand for increased job preparatory training, transfer education, and basic skills training or to meet the needs of dislocated workers.

Characteristics of Enrolled Workers:

Workers who take classes at the college tend to be in their late 20s and early 30s. Most of those upgrading skills in college-level courses are women, but men are in the majority among workers in basic skills classes. Being older, more than a third of these students were parents with dependent children in addition to being workers and students. Those taking college-level classes were a well-educated group with

	Enrolled Worker Characteristics	
	College-Level	Basic Skills
Median Age	31	28
Age 25 and Older	68%	65%
Women	56%	43%
Of Color	11%	44%
Single Parents	8%	9%
Couple with Children	29%	44%
Previously Took Some College	65%	15%
AA Degree or Higher	24%	0%

65 percent having been to college. Some 15 percent of basic skills students also had been to college, including those who attended college in another country before immigrating to the United States.

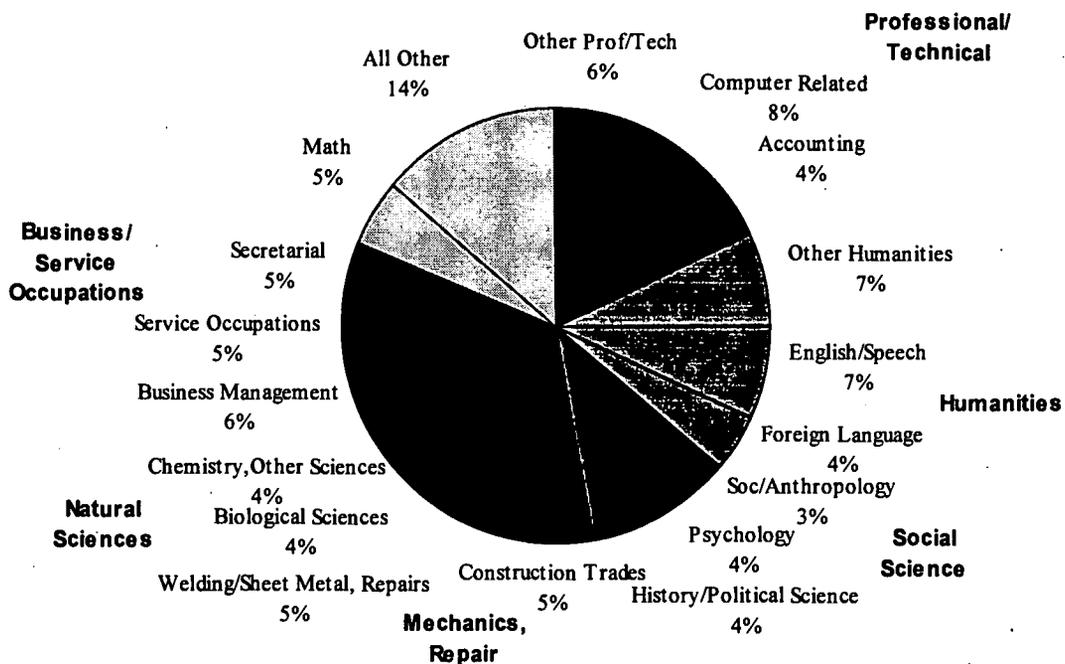
In fall 1995, most job skills enhancement basic skills students enrolled for their first time or had started college just recently. Those taking college-level courses, on the other hand, exhibited an ongoing relationship with the college. The majority had taken classes some time ago in addition to the class or classes taken in fall 1995. Some 16 percent had taken classes some 10 or more years ago. Workers appear to be lifelong learners who return to the college periodically to upgrade skills or meet personal interests.

Worker Enrollment Pattern		
	College-Level	Basic Skills
Time of First Enrollment		
Last 2 Years	40%	63%
3-4 Years	14%	12%
5-9 Years	20%	11%
10 or More Years	16%	4%
Enrolled Part-Time	75%	72%
Enrolled at Night	54%	52%
Enrolled off Campus	20%	25%
Took Vocational Courses	59%	
Took Academic Courses	49%	
Took Below College Courses	6%	100%
Employer Contracted Courses	11%	NA
State or Student Funded Courses	89%	NA

Just over half the workers enrolled at night. Nearly half took at least one academic course, though the majority took a vocational class. About six percent of college-level workers took at least one developmental studies class (below college-level) along with college-level classes.

While 59 percent of all students enrolled in some vocational classes, the FTE generated in academic classes--taken alone or along with vocational classes--was substantial. Workers operate in all kinds of contexts and, thus, need all kinds of upgrading. Some workers, for example, teach music for a living, so it is not surprising that part of the humanities FTE included music performance classes such as community band or choir (typically offered to the community on a self-supporting basis). Spanish language skills are needed by many workers, and, thus, foreign language courses, mostly Spanish, comprise four percent of the FTE taken by these workers in fall 1995. Many workers seek to better understand the social and personal forces that impact the work world and, thus, enroll in psychology, sociology, and political science classes. Some workers need to enhance their understanding of chemistry, the biological sciences, and math; thus, each area represents four percent of the FTE.

**Job Skills Enhancement FTE by Course Type
(College-Level Courses Only)**



Fall 1995 - All funds - excludes ABE/ESL and Developmental

Among occupationally specific courses, the largest single area of study was in computer-related courses at eight percent of the FTE. The secretarial; business management; various professional/ technical areas, including health fields; and construction trades each accounted for five or six percent of the FTE. It is clear then that no one area of study dominates the interest of job skills enhancement students. They are enrolled in all areas of the curriculum.

The median earnings of those who enroll for upgrade training was \$10.81 for those in college-level programs and \$7.93 for those in basic skills. Most worked in smaller companies with more than one-third working in firms of fewer than 50 employees. Some 32 percent of college-level workers were from firms with 500 or more workers, compared to 27 percent of the upgrading basic skills students.

The following hypothetical student profiles based on the focus group interviews (Borton) and college enrollment records help clarify the diversity among workers enrolled at the college.

Marian, a 28-year-old white female, has been working as a full-time personnel assistant with a mid-sized family clinic for the past five years. Before enrolling at her current college in fall 1994, Marian had already taken some courses at a business college. In fall 1994, she was enrolled in an evening five-credit, state-supported vocational course in personnel management. Marian did not receive any need-based financial aid nor was her tuition reimbursed by her company.

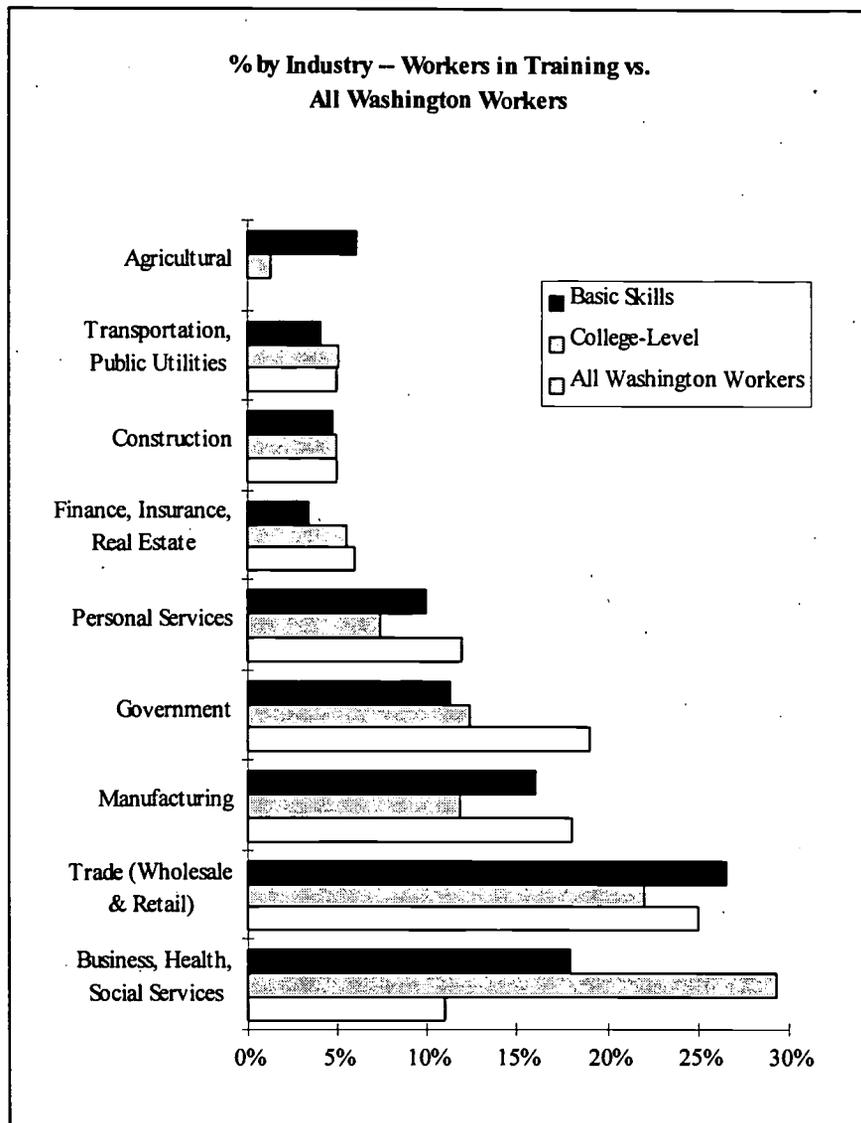
Marian is uncertain whether she will continue at the college after fall term. She worries about meeting her family obligations, working, and being a student. She has limited time to study at night or on the weekends. Assignments that require library work are especially difficult for her. Despite being successful at the business college she attended, she is now concerned about failing her course because of the number of years since she was last in school. Marian expects that her current employer will reward her training effort with a salary increase.

Rex, a 35-year-old white male, works full-time for an electronics manufacturing firm that employs about 170 people. He is taking a night-time vocational course to upgrade skills at his current job. After completing the course, he does not plan to return to the college for several years. He figures that his current course work will increase his productivity, a high priority for his current employer. Rex's employer is paying for his course, provided he achieves at least a C grade.

If Rex could change one thing about taking courses at the college, he would change the time and place of his course. Since the course will benefit his company as much as himself, he thinks the course should be offered during work hours at his job site.

Craig works full-time at a small restaurant with fewer than 20 employees. He has been working there for two years. He likes the contact with customers at his current job but is unhappy with the evening and weekend work schedule. Craig is single, white, and in his late twenties. Craig started taking basic skills classes in fall 1990. He plans to take courses again at the college in winter and spring quarters and to pass his GED. Craig expects that this course may help in seeking a higher paying job. Even more importantly, he expects a new job will allow him more leisure time than his current employment. Craig paid the cost of attending himself without aid from the college or his company.

The workers who enroll in college for their upgrade training represent a different profile than the typical worker by industry. Workers in basic skills programs differ from those in college-level training. The job skills enhancement basic skills students were over-represented in agriculture, business, health and social services, and sales. College-level students were over-represented in only one area--business, health and social services.



Clarifying Assumptions About Job Skills Enhancement Worker Training: Some of the widely held beliefs about worker training at community and technical colleges are not substantiated by the data. Specifically, the following conclusions stem from the data and contradict common assumptions.

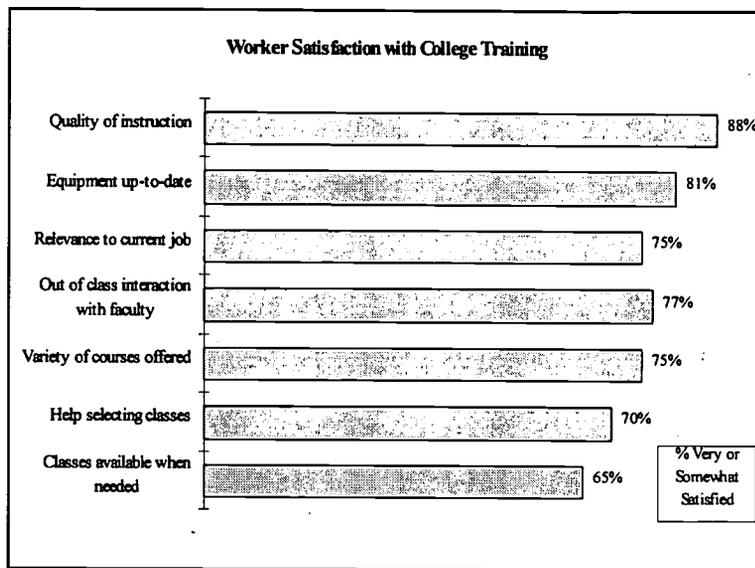
Common Assumptions	What the Research Tells Us
Employers sponsor most worker course taking.	Upgrading students enroll primarily without the benefit of employers sponsorship either through course contracting or through tuition reimbursement. Just 27 percent of workers receive tuition support from their employer. Another 11 percent enroll in employer contracted courses.

Common Assumptions	What the Research Tells Us
Working adults enroll in night time vocational courses	Upgrading students enroll during the day as well as at night and in academic courses as well as in courses specifically designed for upgrading in specific occupations. Some 46 percent enroll during the day, and 49 percent take at least one academic course.
Working adults get their training from a single provider--in this case, the college.	Workers use colleges as just one of several sources of continual training. For the majority, the college courses are not their only source of training. Two-thirds of workers had also participated in training other than that offered by the college including courses at other colleges, privately offered training, and employer training.
The beginning and end of upgrade training can be identified for use in performance assessment.	Upgrade training is undertaken as a continual process. The notion of "starting" training and "completion" does not apply. The students return to college on an as needed basis. Evaluation based on an assumption that a point in time can be defined as the pre-training or post-training period does not correspond to the actual behavior of workers.

Outcomes Assessment: Customer satisfaction surveys are an appropriate component in any performance assessment system, but they are especially central to assessment of college services to workers. Working adults report that they expect the benefits of training to be in areas best assessed by use of a satisfaction survey. The top benefits of training listed by workers were:

Personal satisfaction	79%
Increased job responsibility	69%
Increased salary	68%
Increased job security	63%
Improved quality of life	61%

Job skills enhancement students reported a high level of satisfaction with the training provided at the colleges. Some 90 percent would recommend the college to a friend or co-worker. The satisfaction ratings were highest for the quality of instruction and the access to up-to-date equipment and lowest for availability of courses and help with selecting courses.



Given the cost of post-training survey work, SBCTC has not conducted a study that could

reveal valuable information about the extent to which training led to the expected outcomes of increased job responsibility, job security, and improved quality of life as well. Such data collection is needed periodically.

SBCTC staff undertook this analysis with the goal of reporting post-training earnings as one of the outcomes measures for job skills enhancement training. However, an analysis of factors which contribute toward explaining differential earnings of former students found the extent of upgrade training to be an unimportant factor. Key factors impacting post-training wage levels, in order of importance, are age, gender and education level prior to training (see Appendix B). The extent of this relationship can be seen by comparing wages increase with prior education levels for college-level job skills enhancement students.

Wage Group	Below HS	GED	High School	Post HS+	Certificate	AA	BA
\$15/ Hour+	11%	17%	16%	28%	30%	38%	49%
\$10-14.99	24%	33%	24%	33%	38%	33%	33%
\$6.50-9.99	27%	33%	35%	28%	23%	22%	16%
\$6.49/Less	38%	16%	24%	11%	9%	6%	2%

This finding implies that the value-added by college attendance cannot be measured by post-training earnings. Given the finding that such earnings relate not to training but to “environmental” factors, wage data reported here are not regarded as an outcome of the training.

It is possible that a pre/post wage comparison could yield a differential wage gain for those with more hours in upgrade training. This is not a strong possibility, however, given the strength of the association between post-training wage and age and education level at the time training “started.”

POLICY IMPLICATIONS

Colleges provide one of many sources of quality upgrade training for workers and should continue to be funded to provide such training. These life long learners rate their college experience positively.

The outcomes indicator ranked by workers as most important was personal satisfaction. Such an outcome can best be measured by consumer satisfaction surveys. A system for worker surveys needs to be developed. Other than the in-class survey described here, no systematic effort has been made by SBCTC or WTECB to conduct direct customer satisfaction surveys related to the incumbent worker training mission. WTECB has conducted employer satisfaction surveys related to those workers who participate in employer-contracted courses. Given the life-long learning approach of workers, they could be surveyed immediately after a course ends. There is no need to wait to learn if the student has “left” the college in the next term as is the protocol for job preparatory surveys.

While colleges have been increasing their service to workers at the basic skills level, there is considerable opportunity to increase that level of service. Most of the job skill enhancement basic skills students (73 percent) work for smaller firms of fewer than 500 employees. In fact, 38 percent work in firms with fewer than 50 employees. Colleges could work with employers and labor groups to form a consortium representing the agriculture, business, social and health services, and sales industries for the purposes of sponsoring industry-based basic skills training. Since there are too few students from a single employer enrolled to provide work-site training, these consortia could provide training in an industry environment instead. For the 27 percent of students working in large companies with 500 or more employees, the college and employers could work together to provide work-based basic skills training at the employer work site. Basic skills outreach could also be extended to industries other than agriculture, business, social and health services, and sales, which are now over represented in the basic skills enrollment.

New funding sources may be needed if colleges are to continue to meet job preparatory and transfer demands while also effectively meet the need to serve more, not fewer workers. With additional funding colleges could increase the availability of evening and flexible enrollment courses. The state’s continued investment in an electronic infrastructure, which will allow enrollment in more flexible formats for working adults is also critical.

Colleges could better meet worker needs by providing better advising and targeting workers in all industry areas, not just the service industries as is the focus at present. Just as the state needs to develop a systematic way of gathering “customer feedback” related to job skills enhancement

training, colleges could improve their programs by doing so also. The consumer surveys should focus on the issues of importance to students: course variety; quality of instruction; and extent to which workers are meeting their needs via college instruction.

While administrative data linking is an inexpensive way to gather outcomes data, post-training data are not shown to be useful for evaluating this mission of the college.

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Appendix A: COMMUNITY COLLEGE JOB UPGRADING/ RETRAINING SURVEY, NOVEMBER 1990

As part of his dissertation study, Walt Nolte designed and administered The Community College Job Upgrading/Retraining Survey in November of 1990. The survey results, along with demographic information from the SBCTC Student Management Information System, provided the basis for the profile of upgrading and career students and the student evaluation of the expected outcomes and satisfaction with community college education.

Questionnaire

The eight page questionnaire was designed based on previous SBCTC survey instruments, a literature review, and results from the Borton study. The questionnaire was pilot tested with a group of employed students at Tacoma Community College. The final instruction took about 15 minutes to complete and was administered during the class session by staff hired specifically for that purpose.

A copy of the questionnaire is attached. The main areas covered in the instrument were:

- Reasons for enrolling
- Reasons students enrolled at a community college
- Expected outcomes from course
- Barriers to enrolling
- Measures of student satisfaction
- Comparisons with other training experienced
- Future needs related to training
- Current job status
- Tuition reimbursement status
- Relationship of salary and work

No background questions were asked because it was expected that such information could be obtained from matching survey responses with data collected at registration. Students were advised, both in writing and orally, of this use of the social security number they provided on the questionnaire at the time of the administration of the survey.

Survey Sample Frame

The sample for this survey was drawn from all students enrolled in courses identified as serving employed students. From six to twelve classes were identified for the sample by administrators at eight community colleges:

Big Bend Community College
Edmonds Community College
Highline Community College
North Seattle Community College

Skagit Valley Community College
South Puget Sound Community College
Spokane Community College
Tacoma Community College

Each college has a history of providing educational services to employed students and a reputation for providing services to private sector business and industry. These colleges represent the mix of all community colleges in terms of urban, suburban, and rural settings; size; and location.

Each college was asked to survey 125 students, but due to differences in the size of colleges, the responses by college generally exceeded this norm. Administrators were aided in the course selection by a computer program that pulled student characteristics information and displayed the courses most likely to contain upgrading and retraining students. The program also provided information on the mix of such courses in terms of day versus evening and vocational, academic, or basic skills mix.

Administration

Staff at each of the eight colleges administered the surveys to 1,151 students during the sixth through the eighth week of fall quarter 1990. Campus staff followed a common procedure to contact the faculty and gain agreement to use class time for the survey. A single individual administered all surveys and used a prepared script to announce the survey process and answer common questions. Only those students who said they were employed and enrolled to improve their job skills or prepare for a career change were asked to complete the questionnaire.

Students who wanted a copy of the survey results were asked to stop by the dean's office in June of the coming year to obtain copies.

SBCTC staff completed data entry of all surveys using a locally designed data entry program, which disallows responses outside the range of those allowed on the questionnaire.

Additional Data

In addition to survey results, the analysis of upgrading and retraining students was partly based on data from two other sources:

- Information provided by survey respondents at the time of registration. This information included student purpose for attending, planned length of enrollment, current job status, race, gender, and types of courses in which the student enrolled.
- Information on student job status as of four months earlier related to an estimated annual salary and hours of work based on a match of social security numbers with the unemployment insurance data files maintained by the Washington State Employment Security Department.

Data from both sources were matched to the survey responses using the social security numbers provided by survey respondents. The survey form included an explanation of the use that would be made of the social security number if provided. Of the 1,151 students who completed the survey, 109 (9.5) percent left the social security number blank. Additionally,

84 provided numbers that did not match with the registration data. Thus the above data were not available for 17 percent of the survey respondents.

DEFINING THE DEGREE OF CERTAINTY IN USING THESE SURVEY FINDINGS

Factors Influencing Certainty of Findings

All surveys have some degree of uncertainty--that is the concern that findings do not represent the beliefs attitudes, opinions or behaviors of the population studied. If uncertainty is low, the findings are far more useful. For many, the first and only factor that comes to mind when considering the degree of certainty attached to findings from a survey is sampling error. Sampling error refers to the degree to which the sample represents the total group or population for which information was sought. But there are three other factors that are important in determining the degree of certainty of survey findings:

- **Measurement Error:** The degree to which the questions asked truly measures what the researcher intended.
- **Non-Coverage:** The degree to which the entire population had an opportunity to be included in the sample.
- **Non-Response Bias:** Bias created if the answers from non-respondents were likely to differ considerably from respondents and the number of non-respondents was large enough to impact the findings.

Researchers attempt to control the four factors mentioned above to assure the highest level of certainty possible given the resources available to conduct the survey.

In the case of this study, findings from *The Job Upgrading/Retraining Survey* are regarded as fairly high in certainty because the researchers were able to minimize bias and errorpart. Nevertheless, some uncertainty remains due primarily to sampling error and non-coverage.

Measurement Error

The following factors helped reduce uncertainty regarding measurement:

- Nolte had extensively pilot-tested the questionnaire with students at his community college.
- The questionnaire contained mostly standard questions which had been previously pilot-tested and used in a variety of other settings.
- Some questions were asked in several ways.
- The survey was short and well structured.

- Respondents did not have to work hard. Their interest was maintained as they were led through the survey.

For some questions, respondents were asked to indicate if each response did or did not apply to them. Often a response was left blank. Analysis of this survey assumed a blank response to mean “does not apply.” (If this assumption is false, the level of measurement error could be considerable.)

Sampling Error

Courses were used as a basis for sampling students. How well these students represented all upgrading and retraining students depended on the courses selected. Deans of instruction or vocational deans at each campus selected courses, which they regarded as representative of courses where upgrading and retraining students were most likely to enroll. Course profile data was provided to assist the deans in their selection. While this selection process was not as free from error as random selection, it is assumed that the judgments made resulted in minimal error.

The course-based cluster sampling technique does not allow for exact specification of sampling of error. Based on sample size and assumed representative courses, the sampling error is assumed to be not greater than plus or minus five percent.

Non-Coverage

Not all upgrading and retraining students had an opportunity to be in the survey sample and thus there is uncertainty in the findings due to non-coverage. Specifically, those that did not have an opportunity to be in the sample included:

- Any student in a selected course when the faculty could not afford 15 minutes of class time to administer the survey.
- Upgrading and retraining students in the following courses:
 - English-as-a-Second Language (ESL)
 - Adult Basic Education (ABE)

These students were excluded because of the reading skill required to complete the survey. Students in developmental studies courses were included, however, and the results can be said to fairly represent upgrading and retraining students above the literacy training level.

- Upgrading and retraining students in colleges not included in the study. It was assumed that the participating colleges adequately represented the community college system.

For some analysis, findings were based on a combination of survey data and registration data. SBCTC matched the two sources of data based on social security numbers supplied by respondents. Not all students supplied their social security numbers. Thus findings based on

registration and survey data can be regarded as high in certainty only for those who supplied their social security numbers.

Non-Response Bias

In this study, the non-response rate is unknown as the number of upgrading and retraining students in each course was unknown. Students in the course were asked orally and at the start of the survey to determine if they qualified to complete the survey. Only those who said they were currently employed and enrolled to improve their job skills or prepare for a career change were asked to complete the survey. It is possible that some who qualified did not respond. It is also possible that some non-qualifying students completed the survey.

Non-response may have also resulted from upgrading and retraining students not being in class on the day of the survey. Given the timing of the survey early in the quarter and the ease of completing the instrument, it is likely that most upgrading and retraining students were present and most responded to the survey. Thus, this in-class survey like most of that type, probably had considerably less non-response bias than mail or phone surveys of similar populations.

Conclusion

The findings of this survey can be thought of as fairly accurate in representing the opinions, beliefs, attitudes, and behaviors of upgrading and retraining students above the literacy training level in Washington community colleges.

**COMMUNITY COLLEGE
JOB UPGRADING/RETRAINING
SURVEY**

November 1990

Washington Community Colleges:

**The
Smart
Investment**

JOB UPGRADING/LRETRAINING SURVEY

Are you currently employed? Are you enrolled in college to improve your job skills or prepare for a career change? If your answer to both questions was YES, we would appreciate your help by completing this survey about students enrolled to improve job skills.

Your answers are a valuable source of information to help Washington community colleges improve instruction and support services for working students. Your social security number is needed to match to the demographic information you have already provided the colleges. Your responses will remain confidential.

Name (optional): _____

Social Security Number: _____ - _____ - _____

Q-1. How would you describe your course(s) in relation to your current job? (Circle the number that best applies to you--one only.)

1. STRONGLY RELATED TO JOB
2. SOMEWHAT RELATED TO JOB
3. NOT RELATED TO JOB
4. UNCERTAIN

Q-2. Which of the following apply to you as a reason for enrolling at your community college?

	Applies	Does Not Apply
1 TO TAKE COURSES RELATED TO CURRENT JOB	1	2
2 TO PREPARE FOR A NEW JOB AT EXISTING PLACE OF EMPLOYMENT	1	2
3 TO PREPARE FOR A NEW JOB AT ANOTHER PLACE OF EMPLOYMENT	1	2
4 TO PREPARE FOR A CAREER CHANGE.....	1	2
5 TO EXPLORE A NEW CAREER DIRECTION.....	1	2
6 TO PREPARE FO INCREASE IN JOB COMPLEXITY	1	2
7 TO MOVE FROM TEMPORARY WORK INTO A PERMANENT CAREER.....	1	2
8 OTHER _____		
(Please Specify)		

Q-3. Are there changes in your place of employment requiring you to upgrade or retrain?

	Applies	Does Not Apply
1 NO CHANGES.....	1	2
2 COMPANY IS BEING EXPANDED.....	1	2
3 COMPANY IS BEING DOWNSIZED OR LIQUIDATED.....	1	2
4 COMPANY HAS BEEN ACQUIRED OR MERGED	1	2
5 CHANGE IN MAJOR CUSTOMERS.....	1	2
6 CHANGE IN MAJOR PRODUCTS OR SERVICES	1	2
7 CHANGE IN COMPANY OWNERSHIP OR MANAGEMENT.....	1	2

	Applies	Does Not Apply
8 INCREASED COMPETITION FORM OTHER FIRMS	1	2
9 CHANGES IN COMPANY TECHNOLOGY.....	1	2
10 CHANGES IN COMPANY LOCATION	1	2
11 COMPANY IS BEING CLOSED AND NO OTHERS REQUIRE MY SKILLS	1	2
12 COMPANY'S MAJOR CUSTOMER(S) REQUIRES TRAINING AT OUR FIRM	1	2
13 OTHER _____		
(Please Specify)		

Q-4. Why did you decide to go to this community college?

	Applies	Does Not Apply
1 TYPE OF COURSES AND PROGRAMS.....	1	2
2 RECOMMENDED BY EMPLOYER	1	2
3 RECOMMENDED BY CO-WORKERS	1	2
4 CONVENIENT LOCATION	1	2
5 CONVENIENT COURSE TIME.....	1	2
6 AFFORDABILITY.....	1	2
7 OTHER _____		
(Please Specify)		

Q-5. What are your future expectations regarding your current or planned course(s)?

	Applies	Does Not Apply
1 INCREASE JOB SECURITY	1	2
2 INCREASED JOB RESPONSIBILITY.....	1	2
3 INCREASED SALARY.....	1	2
4 NEW POSITION AT EXISTING PLACE OF EMPLOYMENT	1	2
5 NEW POSITION WITH ANOTHER EMPLOYER	1	2
6 START OWN BUSINESS OR PRACTICE.....	1	2
7 IMPROVED QUALITY OF LIFE.....	1	2
8 PERSONAL SATISFACTION	1	2
9 BETTER LIFE FOR CHILDREN	1	2
10 OTHER _____		
(Please Specify)		

Q-6. Based on what you have learned in your classes so far, do you think your community college experience will help you meet these expectations?

	Applies	Does Not Apply
1 YES, IMMEDIATE BENEFIT.....	1	2
2 YES, LONG TERM BENEFIT	1	2
3 INDIRECT BENEFIT.....	1	2
4 NO BENEFIT	1	2
5 UNSURE.....	1	2

Q-7. How much impact do you expect your community college experience to have on your wages?

	Applies	Does Not Apply
1 LARGE INCREASE	1	2
2 SMALL INCREASE	1	2
3 NO INCREASE	1	2
4 DECLINE	1	2
5 UNCERTAIN	1	2

Q-8. Did you have to overcome any of the following to enroll in community college?

	Applies	Does Not Apply
INSTITUTIONAL BARRIERS		
1 DIFFICULTY IN SCHEDULING COURSES AND WORK	1	2
2 EMPLOYER'S TRAINING AND EDUCATION POLICIES	1	2
3 INCONVENIENT LOCATION AND COURSES	1	2
4 LACK OF RELEVANCY OF COURSES	1	2
5 INCONVENIENT LENGTH OF COURSES (WEEKS, MONTHS, QUARTERS, ETC.)	1	2
6 INCONVENIENT TIME OR DAY OF COURSES	1	2
7 LACK OF COLLEGE SUPPORT SERVICES (ADVISING, COUNSELING, ETC.)	1	2
8 DIFFICULT REGISTRATION PROCESS	1	2
9 LACK OF KNOWLEDGE ABOUT COURSES AND PROGRAMS	1	2
10 COLLEGE PLACEMENT TESTS	1	2
11 COURSE PREREQUISITES	1	2
12 OTHER _____		
(Please Specify)		

Which barrier was the greatest problem for you? _____
(Number from above)

Q-9. Did you have to overcome any of the following in order to attend community college?

	Applies	Does Not Apply
1 LACK OF CONFIDENCE	1	2
2 FEAR OF FAILURE	1	2
3 FEELING OF BEING TOO OLD	1	2
4 LACK OF PERSONAL INTEREST	1	2
5 FAMILY RESPONSIBILITIES	1	2
6 LACK OF SPOUSE OR FAMILY SUPPORT	1	2
7 FEAR OF TRYING SOMETHING NEW	1	2
8 PHYSICAL DISABILITIES	1	2
9 CHILDCARE	1	2
10 FINANCES	1	2
11 TRANSPORTATION	1	2
12 OTHER _____		
(Please Specify)		

Which barrier was the greatest problem for you? _____
(Number from above)

Q-10. In general, how satisfied are you with your community college with regard to each of the following areas?

	Very Unsatisfied	Somewhat Unsatisfied	Somewhat Satisfied	Very Satisfied	Does Not Apply
1 QUALITY OF INSTRUCTION	1	2	3	4	5
2 HELP WITH SELECTING COURSES	1	2	3	4	5
3 INFORMATION ON CONDUCTING A JOB SEARCH.....	1	2	3	4	5
4 VARIETY OF COURSES OFFERED.....	1	2			
5 USEFULNESS OR RELEVANCY OF TRAINING TO CURRENT JOB.....	1	2	3	4	5
6 AVAILABILITY OF CLASSES AT THE TIMES I COULD ATTEND.....	1	2	3	4	5
7 INTERACTION WITH FACULTY OUTSIDE OF THE CLASSROOM.....	1	2	3	4	5
8 ACCESS TO UP-TO-DATE EQUIPMENT	1	2	3	4	5
9 SERVICES FOR DISABLED	1	2	3	4	5
10 TESTING OR ASSESSMENT SERVICES.....	1	2	3	4	5
11 FINANCIAL AID	1	2	3	4	5

Q-11. Based on what have learned in your course(s), do you expect your community college experience to increase your on-the-job productivity?

- 1 YES (go to Q-12)
- 2 NO (skip to Q-13, next page)
- 3 UNSURE (skip to Q-13, next page)

Q-12. Will your work productivity be increased in the following year?

	Applies	Does Not Apply
1 ABILITY TO WORK "SMARTER NO HARDER"	1	2
2 ABILITY TO WORK WITHOUT ERRORS	1	2
3 ABILITY TO WORK BETTER WITH CO-WORKERS	1	2
4 BETTER KNOWLEDGE OF JOB RESPONSIBILITIES.....	1	2
5 ABILITY TO WORK AS A PART OF A TEAM	1	2
6 ABILITY TO WORK WITH LESS SUPERVISION.....	1	2
7 ABILITY TO SUPERVISE OTHERS BETTER.....	1	2
8 SHORTER TURN-AROUND TIME OF PRODUCT OR SERVICE.....	1	2
9 ABILITY TO BE CREATIVE, FLEXIBLE, OR PROBLEM SOLVE	1	2
10 ABILITY TO READ AND WRITE EFFECTIVELY	1	2
11 ABILITY TO LEARN NEW SYSTEMS OR PROCEDURES.....	1	2
12 ABILITY TO MAKE PRESENTATIONS	1	2
13 ABILITY TO USE MATH AT WORK	1	2
14 ABILITY TO MAKE DECISIONS INDEPENDENTLY.....	1	2
13 OTHER _____		

(Please Specify)

Q-13. Other than high school, have you been involved in other training and education programs?

- 1 NO (skip to Q-15)
- 2 YES

Q-14. If you have been involved in other training and education programs, how would you compare your experience to the community college? (Select 4 if you had not participated or cannot compare the item.)

	Worse	About Same	Better	Does Not Apply
1 EMPLOYER SPONSORED TRAINING	1	2	3	4
2 MILITARY	1	2	3	4
3 PRIVATELY SPONSORED SEMINARS AND WORKSHOPS	1	2	3	4
4 FORMAL EDUCATION	1	2	3	4
5 OTHER _____				

(Please Specify)

Q-15. Do you see yourself as continually needing training in the future? (Circle the number that best applies to you--one only.)

- 1 YES, EVERY YEAR
- 2 YES, EVERY COUPLE OF YEARS
- 3 NO
- 4 UNCERTAIN

Q-16. Do you expect to attend to a four-year institution in the next five years? (Circle the number that best applies to you--one only.)

- 1 NO (skip to Q-18, next page)
- 2 NO, ALREADY HAVE A FOUR YEAR DEGREE (skip to Q-18, next page)
- 3 YES, TO WORK TOWARDS A FOUR YEAR DEGREE
- 4 YES, FOR CONTINUING EDUCATION
- 5 UNSURE

Q-17. If you expect to transfer, what institution do you plan to attend? (Circle the number of the institution that you are most likely to attend--one only.)

- 1 THE EVERGREEN STATE COLLEGE
- 2 WESTERN WASHINGTON UNIVERSITY
- 3 CENTRAL WASHINGTON UNIVERSITY
- 4 EASTERN WASHINGTON UNIVERSITY
- 5 WASHINGTON STATE, MAIN CAMPUS

- 6 WASHINGTON STATE, TRI-CITIES
- 7 WASHINGTON STATE, VANCOUVER BRANCH
- 8 UNIVERSITY OF WASHINGTON, MAIN CAMPUS
- 9 UNIVERSITY OF WASHINGTON, TACOMA BRANCH
- 10 UNIVERSITY OF WASHINGTON, BOTHELL/WOODINVILLE BRANCH
- 11 PRIVATE COLLEGE IN WASHINGTON
- 12 OUT-OF-STATE

Q-18. What if your approximate start date at the 4-year institution? (Select one only.)

- 1 ALREADY ENROLLED
- 2 WINTER OR SPRING 1991
- 3 SUMMER OR FALL 1991
- 4 WINTER OR SPRING 1992
- 5 1992-93 ACADEMIC YEAR
- 6 1993-94 ACADEMIC YEAR
- 7 1994-95 ACADEMIC YEAR
- 8 NOT SURE

Q-19. Would you recommend the community college to your friends, co-workers, or acquaintances?

- 1 YES
- 2 NO
- 3 UNCERTAIN

Q-20. If you could go back, knowing what you now know, would you still attend this community college?

- 1 NO
- 2 YES
- 3 UNCERTAIN

Q-21. What is the title of your current job (also describe duties)?

TITLE _____

DUTIES _____

Q-22. How would you describe the level of your job in relationship to your skills? (Circle the number that best applies to you--one only.)

- 1 JOB IS DEFINITELY BENEATH MY SKILL LEVEL
- 2 JOB IS SOMEWHAT BENEATH MY SKILL LEVEL
- 3 JOB IS APPROPRIATE FOR MY SKILL LEVEL
- 4 JOB IS TOO ADVANCED FOR MY SKILL LEVEL
- 5 DON'T KNOW

Q-23. How many people are employed where you work?

- 1. FEWER THAN 20 STAFF
- 2. 20-49 STAFF
- 3. 50-249 STAFF
- 4. 250 OR MORE STAFF

Q-24. How long have you been employed at your current place of work? (Circle the number that best applies to you--one only.)

- 1 LESS THAN ONE YEAR
- 2 ONE TO THREE YEARS
- 3 FOUR TO FIVE YEARS
- 4 MORE THAN FIVE YEARS
- 5 DON'T KNOW

Q-25. What is the nature of the business of your current employer? (Circle the number that best applies to you--one only.)

- 1 AGRICULTURE, FORESTRY OR FISHING
- 2 MINING
- 3 CONSTRUCTION
- 4 MANUFACTURING
- 5 TRANSPORTATION, COMMUNICATION, ELECTRIC, GAS, OR SANITARY SERVICES
- 6 WHOLESALE TRADE
- 7 RETAIL TRADE
- 8 BUSINESS, LEGAL, OR SOCIAL SERVICES
- 9 HEALTH OR EDUCATIONAL SERVICES
- 10 FINANCE, INSURANCE, OR REAL ESTATE
- 11 CONSUMER SERVICES
- 12 PUBLIC ADMINISTRATION
- 13 OTHER _____

(Please specify)

Q-26. Who paid the tuition or fees for the course(s) in which you are currently enrolled? (Circle the number that best applies to you--one only.)

- 1 100% EMPLOYER PAID
- 2 PARTIAL EMPLOYER PAID, PARTIAL SELF-PAID
- 3 100% SELF-PAID
- 4 COLLEGE FINANCIAL PROGRAM
- 5 SELF-PAID AND COLLEGE FINANCIAL PROGRAM
- 6 A COMBINATION OF SELF, EMPLOYER, AND FINANCIAL AID
- 7 OTHER _____

(Please specify)

Q-27. Did you receive financial assistance from any source for textbooks, supplies, or other educational costs?

- 1 YES
- 2 NO
- 3 UNCERTAIN

Q-28. How would you describe your current salary in relationship to your work skills?
(Circle the number that best applies to you-one only.)

- 1 SALARY IS DEFINITELY BENEATH MY SKILL LEVEL
- 2 SALARY IS SOMEWHAT BENEATH MY SKILL LEVEL
- 3 SALARY IS APPROPRIATE FOR MY SKILL LEVEL
- 4 SALARY IS SLIGHTLY MORE THAN MY SKILL LEVEL
- 5 SALARY IS DEFINITELY HIGHER THAN MY SKILL LEVEL
- 6 DON'T KNOW

Q-29. If your company has a tuition reimbursement program, please describe:

Q-30. Please use the space below to discuss the strengths or weaknesses of the community college programs and services

Thank you for your assistance.

**Appendix B:
STATISTICAL ANALYSES OF IMPACTS
OF POST-PROGRAM WAGE**

Results of Discriminant Function Analyses of Wage Group Criterion

- A. Accuracy of Predictions 87%
- B. Specific Variables Predicting the Wage Group

	Criterion
Age	.73
Gender	.48
Previous Education Level	.39
Race	.05
Credit Level Earned	-.03
Wilks Lambda	.87

Hourly wage groups measured at 4 levels: (1=low - 4=high)

Codes for Variables:

Race: 1 = all non-white ethnicities; 2 = white

Gender: 1 = female; 2 = male

Age: 1 = under 25; 2 = 25-39; 3 = 40-54; 4 = 55 and over

Stucrlvl: 1 = 45 credits or less; 2 = more than 45 credits

Edu: 1 = non-h.s. & GED; 2 = h.s. diploma; 3 = some post high school & certificates;
4 = Associate's degree; 5 = Bachelors or more

Appendix C: FOCUS GROUP INTERVIEWS

As part of her dissertation study, Nancy Borton designed and implemented focus group interviews used as a data source in this study. She used an ethnography approach, which seeks to make sense of "the whole" by studying the meanings people and organizations assign phenomena in a context.

Focus group data were collected from 52 students during February and March of 1990. Five to nine students participated at each of six sites. The sites, distributed geographically across the state, were chosen to represent a variety of community college variable factors (urban, suburban, and rural), (traditional college transfer, traditional vocational education, and comprehensive community), (small, medium, and large), (high technology, smokestack, and agricultural), (local, regional, and international), and (geographically Eastern, Central, and Western Washington State). Members of the student focus group were chosen from students in academic, vocational preparation, vocational supplemental, and contractual classes who said they were in school to get a better job or to update their skills.

The focus group sessions lasted from two to two-and-one-half hours in length. A list of open-ended questions with follow-up probes was used as a guide to conducting and moderating the focus group discussions. The group discussions were tape recorded and typed verbatim. In addition, each focus group member filled out a supplemental survey providing demographic and background information.

Colleges provided Borton with the names and phone numbers of students who were in classes, which had a high probability of containing incumbent workers.

She called persons on each of these lists to insure that there were at least 10 persons committed to participate in each group who met the qualifications. A telephone screen was used to assure that each informant met the qualifications. Persons chosen to be informants were sent letters with the details of the time, place, and a map or directions two weeks before the session. A phone call was made to each the day before the focus group to confirm their intentions to attend. It was assumed that 60-80 percent participation would be achieved so that there would be from 5-10 in each group. A total of 234 persons were called initially for the telephone screen and of that number 22 percent qualified and were able to participate.

An attempt was made to avoid choosing students who were from the same classes or programs so as to increase the diversity of novel answers and perspectives in the focus groups. The researcher achieved the targeted participation 92 percent of the time. A gift certificate of \$25.00 redeemable in the college bookstore was offered to the students as a token of appreciation for their participation.

Borton developed three types of instruments for the focus group students. There was a preliminary multiple choice questionnaire used to probe and stimulate the thinking of the

informants about the topic. It consisted of 12 multiple choice questions. It took about 5-10 minutes to administer and was completed at the beginning of the focus group sessions as people were arriving.

A consent form was developed for each group which passed inspection of the University of Washington Human Subjects Review Committee. These forms were used to obtain permission to use the data collected and to assure anonymity.

A focus group discussion guide was developed using information obtained from the literature review and of naturalistic observations. The guide consisted of five open-ended questions with several follow-up probes for each question. These procedures were used for expansion of the range of the answer; to obtain more specificity; to go deeper into the affective, cognitive, or evaluative meanings of the answer; and to describe the personal context from which they came. Sometimes probes were used to test the strength and robustness of the response. Questions gradually focused in on the topic. One hypothetical situation was presented to each group to encourage answers from a variety of dimensions, to avoid implying answers or ways to respond, and to encourage answers based on the informant's own specific contexts. Brainstorming was used at the beginning of each focus group to obtain a breadth of responses, and projective techniques were used later in the group schedules to encourage depth in responses.

Borton used a computer program called ethnograph to analyze the transcribed interviews and the transcribed debriefing session between herself and the focus group monitor.

STUDENT FOCUS GROUP DISCUSSION GUIDE

Your participation in answering these questions is voluntary. You may choose not to answer any of them.

1. What is your current life situation and how did you happen to decide to return to school?
(Use a chronological approach in telling how you decided to return to school.)
Follow-up probes:
 - a) What were: the positive contributing factors? Supports?
The negative hindering factors? Barriers?
 - b) How did you overcome or surmount the barriers?
 - c) What sources of information did you use in reaching your decision?

2. What is your evaluation of your previous experience with and performance in education and what are your current expectations and experience with education and your performance?
Follow-up probes:
 - a) Historical experience of education and of continuing education?
 - b) Your orientation to learning?
 - c) Evaluation of your self as a student? Your resources? Barriers you have to your learning progress? Compensations for them?
 - d) What your are experiencing now and how you feel about it?
 - e) What resources do you have that enable you to cope with school?

3. What are your educational needs (needs for education), purposes in getting education, goals (outcomes aimed at), expected benefits, and rewards and incentives for getting further education? How will you know that you have achieved them?
Follow-up probes:
 - a) Has your employer expressed a need for you to obtain certain skills or upgrade skills? Are these things you want?
 - b) What do hope for by by getting this education?
 - c) How will it benefit you?
 - d) What rewards or incentives that you are aware of are available?
 - e) Does your employer offer you any of these and how?
 - f) How will you evaluate whether you are achieving your goals?
 - g) What criteria will you use?

4. What is the attitude of important people toward education and toward your returning to school?
Follow-up probes:
 - a) Family members?
 - b) Employers?
 - c) Self?
 - d) Faculty/Staff?
 - e) Friends?

5. How has it been for you to return to school?
Follow-up probes:
 - a) What are the problems you have faced?
 - b) What are the joys and benefits you have experienced?
 - c) What are the supports you have found that help and encourage your progress?
 - d) How did you find them?

Student Questionnaire
SAMPLE STUDENT QUESTIONNAIRE

Your participation in answering these questions is voluntary. You may choose not to answer any of them.

_____ Student Number (Social Security Number)

Please check the most appropriate answer. This questionnaire represents challenges some of which everyone faces at some time in their lives. We want to know what challenges are facing you as a JRT student.

1. Highest level of school previously achieved
 - Attend High School
 - High School Grad
 - Apprenticeship
 - Attend Vocational

- School
 - Attend College
 - Associate's Degree
 - Bachelor's Degree
 - Master's Degree

2. Age
 - Under 21
 - 21-25
 - 26-35
 - 36-49
 - 50 or over

3. Current Income Level
 - a. Type
 - Individual
 - Family

 - b. Level
 - No Income, Dependent
 - Under \$10,000
 - \$10,000-\$15,000
 - \$15,000-\$20,000
 - \$20,000-\$30,000
 - Over \$30,000

4. Life Situation
 - a. Marital Status
 - Married, With Children
 - Married, No Children
 - Single, With Children
 - Single, No Children

(Single includes divorced and never married here)

 - b. Living Situation
 - Living Alone
 - Living With Others, Not Family
 - Living With Parents
 - Living With Parents
 - Living With Family

4. Life Situation (Cont.)

c. Responsibilities

- None
- Self
- 1-2 Others
- 3-4 Others
- Over 5

d. Crises Presently Faced

- Marriage
- Divorce
- Loss of Job
- Underemployment
- With Children
- Empty Nest
- Retirement
- Change of Job
- Loss of Self-Esteem
- Experiencing Physical Changes
(Menopause or Loss of Health, etc.)
- Ailing Parents
- Death of Family Member/Friend
- Other

5. Current Life Stage

- Single, Never Married, No Children
- Newly Married/Coupled
- Parent, Young Children
- Parent, School-Aged Children
- Parent, Teenage Children
- Elderly Parents
- Senior Citizen

6. Current Career Stage

- No Career, Still Searching
- Worked Entry-Level Job
- Skilled and Experienced Worker/Technician
- Supervisor
- Mid-Level Management
- Top Management
- CEO
- Business Owner

7. How is Your Tuition Paid For

- Self
- Job Pays Tuition Reimbursement, Specify
Conditions of Reimbursement _____
- Student Loan
- Scholarship, Grant
- Work Study
- Other, Specify

8. Previous Experience With
Educational Training

- On-the-Job Training
- "In House" Classes, Workshops,
Seminars, and/or Orientations

8. Previous Experience With Educational Training (Cont.)
- Apprenticeship
 - College Courses (Vocational or College Transfer Courses)
 - College Workshops, Seminars
 - Professional Association Workshops, Seminars
 - Television or Telecommunication Classes
 - Correspondence
 - Specify _____

9. Do You Intend to
- Stay in Your Current Job
 - Stay in Your Current Career
 - Stay With the Same Company
 - Work for Certification
 - Explore Possible New Careers
 - Change Jobs
 - Change Careers

10. Which of the following services are available to you at school and which do you use?

	Available	Use
Child Care	<input type="checkbox"/>	<input type="checkbox"/>
Transportation Reimbursement	<input type="checkbox"/>	<input type="checkbox"/>
Financial Aide	<input type="checkbox"/>	<input type="checkbox"/>
Career Counseling	<input type="checkbox"/>	<input type="checkbox"/>
Personal Counseling, Individual	<input type="checkbox"/>	<input type="checkbox"/>
Personal Counseling, Group	<input type="checkbox"/>	<input type="checkbox"/>
Skill Assessment	<input type="checkbox"/>	<input type="checkbox"/>
Tutoring	<input type="checkbox"/>	<input type="checkbox"/>
Job Placement	<input type="checkbox"/>	<input type="checkbox"/>
Representation in Student Government	<input type="checkbox"/>	<input type="checkbox"/>
Family Activities	<input type="checkbox"/>	<input type="checkbox"/>

11. How would you classify yourself
- Lifelong Learner, Continually Seeking New Classes
 - Periodically Returning to Education
 - Using Education to Explore Change
 - Using Education to Solve a Life Crisis

12. I learned about the opportunities for returning to from a:
- Counselor
 - Brochure
 - Mailed Class Schedule
 - Friend
 - Counselor
 - College Recruiter
 - Career Fair
 - Poster, Billboard or Ad
 - College Catalog
 - Other



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