



OFFICE OF ECONOMIC
& DEMOGRAPHIC RESEARCH

Economic Evaluation of CareerSource Florida's Training Programs

Evaluating the Return on Investment for the Quick Response Training
and Incumbent Worker Training Programs

Fiscal Years 2020-21, 2021-22, and 2022-23

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EXECUTIVE SUMMARY

Background and Purpose

Legislation enacted in 2013 and revised in 2014 directs the Office of Economic and Demographic Research (EDR) and the Office of Program Policy Analysis and Government Accountability (OPPAGA) to analyze and evaluate state economic development incentive programs on a recurring three-year schedule.¹ EDR is required to evaluate the economic benefits of each program, using project data from the most recent three-year period, and to provide an explanation of the model used in its analysis and the model's key assumptions. Economic Benefit is defined as "the direct, indirect, and induced gains in state revenues as a percentage of the state's investment" – which includes "state grants, tax exemptions, tax refunds, tax credits, and other state incentives."² EDR's evaluation also requires identification of jobs created, the increase or decrease in personal income, and the impact on state Gross Domestic Product (GDP) for each program.

In this report, two programs under the auspices of CareerSource Florida (CSF) are under review:

- Quick Response Training (QRT) Program.
- Incumbent Worker Training (IWT) Program.

This analysis addresses activity occurring in Fiscal Years 2020-21, 2021-22, and 2022-23. This is EDR's fourth evaluation of these programs.³

Explanation of Return on Investment

In this report, the term "Return on Investment" (ROI) is synonymous with economic benefit and is used in lieu of the statutory term. This measure does not address issues of overall effectiveness or societal benefit; instead, it focuses on tangible financial gains or losses to state revenues. As such, it is ultimately conditioned by the state's tax policy.

The ROI is developed by summing net state revenues generated by a program less state expenditures invested in the program, and dividing that calculation by the state's investment. It is most often used when a project is to be evaluated strictly on a monetary basis, and externalities and social costs and benefits—to the extent they exist—are excluded from the evaluation. The basic formula is:

$$\frac{(\text{Increase in State Revenue} - \text{State Investment})}{\text{State Investment}}$$

Since EDR's Statewide Model⁴ is used to develop these computations and to model the induced and indirect effects, EDR can simultaneously generate State Revenue and State Investment from the model so all feedback effects mirror reality. The result (a net number) is used in the final ROI calculation.

¹ Section 288.0001, F.S. In the 2025 Florida Statutes, 18 programs are specified. This analysis is based on s. 288.0001(2)(c)3 and 4, F.S.: the Quick Response Training Program established under s. 288.047 and the Incumbent Worker Training Program established under s. 445.003.

² Section 288.005(1), F.S.

³ The previous reports can be found at EDR's website: <http://edr.state.fl.us/Content/returnoninvestment/>

⁴ See the Methodology section for a description of the Statewide Model.

As used by EDR for this analysis, the returns can be categorized as follows:

- **Greater Than One (>1.0)**...the program more than breaks even; the return to the state produces more revenues than the total cost of the investment.
- **Equal To One (=1.0)**...the program breaks even; the return to the state in additional revenues equals the total cost of the investment.
- **Less Than One, But Positive (+, <1)**...the program does not break even; however, the state generates enough revenues to recover a portion of its cost of the investment.
- **Less Than Zero (-, <0)**...the program does not recover any portion of the investment cost, and state revenues are less than they would have been in the absence of the program. This typically occurs because taxable activity is shifted to non-taxable activity.

The numerical ROI can be interpreted as return in tax revenues for each dollar spent by the state. For example, a ROI of 2.5 would mean that \$2.50 in tax revenues is received back from each dollar spent by the state.

The basic formula for ROI is typically calculated in the same manner, but the inputs used in the calculation can differ depending on the needs of the investor. Florida law requires the return to be measured from the state's perspective as the investor, in the form of state tax revenues.

Overall Results and Conclusions

CareerSource Florida, Inc., offers two training grant programs to qualified for-profit businesses. The QRT program provides partial reimbursement for costs incurred by businesses for customized, skills-based training. While not required by law, the guidelines for QRT produced by CareerSource Florida specify that the grants be used to create high-quality jobs for new workers in Florida's qualified targeted industries. Further, the business must show a net increase in new, permanent full-time jobs attributable to the training. IWT grants are used for training related to a significant upgrade in skills for existing full-time employees. Together, these programs are designed to meet workforce needs of existing, expanding, and new businesses and to promote economic development in Florida. Individual trainees also benefit, as training may result in new (or retained) employment, acquisition of transferable skills, and increased earnings. The literature indicates that even absent the state or federal subsidy, businesses gain from the provided training above and beyond the increased wage costs caused by the greater skillset.

This analysis shows that the state's ROI for the QRT program is 0.16, or sixteen cents return for every \$1.00 invested. This compares to the ROIs of 0.09, 0.19, and 0.06 reported as a result of the 2016, 2019, and 2022 evaluation rounds, respectively. Evidenced by the consistency of these four analyses, the program does not break even and returns only a small fraction of the state's cost.

For the IWT program, no ROI can be calculated for the state's investment since the funding is entirely federal. Nevertheless, it is possible to calculate the benefit to the state from the helicopter drop of federal dollars for the IWT program. Based on this approach, the state receives an additional 70 cents in state revenues for every federal dollar spent on employee training. This is "found money" since no expenditure was made by the state.

While the return associated with the QRT training program is relatively low, two points are worth noting. First, this analysis captures a single three-year period. Returns that would take decades to develop are not captured. In this regard, the long-term benefits to employees may have this feature.

Second, a return on investment is a measure of financial returns and does not address issues of overall effectiveness or societal benefit. It is beneficial to the state to have a more productive and educated populace, even if the financial returns are initially minimal. Furthermore, the availability of these programs signals to the business community that the state is actively engaged in devising strategies and providing resources to meet their workforce training needs. To this point, the EDR results indicate that the private sector is made overall better off by these grant programs. Collectively, these programs enhance the state's business climate and support state and local economic development efforts.

On a final note, EDR's 2019 analysis found that the effectiveness of QRT and IWT grants decrease as pre-training wage, employee age, or grant per trainee increase.⁵

⁵ The measure of effectiveness was the grant-driven wage growth per grant dollar. See in this report, Appendix One: Observations Regarding the Effectiveness of QRT and IWT, and see Literature Review, "Economic Evaluation of CareerSource Florida's Training Programs," Office of Economic & Demographic Research, December 2018, pp. 21, 28-29. <http://edr.state.fl.us/Content/returnoninvestment/ROI-CareerSourceFLTrainingProg.pdf>

OVERVIEW OF TRAINING PROGRAMS

CareerSource Florida

CareerSource Florida, Inc., a not-for-profit corporation, is a federally funded public-private partnership that implements the policies of and provides administrative support for the state Workforce Development Board (Board), the principal workforce policy organization for the state.⁶ The Board serves as the board of Directors for CareerSource Florida (CSF) and is required to:

“...design and implement strategies that help Floridians enter, remain in, and advance in the workplace, so that they may become more highly skilled and successful, which benefits these Floridians, Florida businesses, and the entire state, and fosters the development of the state’s business climate.”⁷

The Quick Response Training (QRT) and Incumbent Worker Training (IWT) grant programs are two of the Board’s strategies to address the workforce-skill needs of existing, expanding, and new businesses in Florida.

Quick Response Training Program

The underlying law governing the Quick Response Training Program is significantly more general than the underlying program guidelines developed by CSF.⁸ Since 1993, Quick Response Training grants have provided partial reimbursement for costs incurred by for-profit businesses.⁹ While not required by law, the CSF Guidelines specify that the grants be used to create high-quality jobs for new workers in Florida’s qualified targeted industries.¹⁰ For the purpose of funding priority, CSF Guidelines currently suggest that these “high-quality jobs” are jobs paying an average annual wage of at least 115 percent of local or state private sector wages. At the beginning of the review period for this report, the law

⁶ CareerSource Florida (CSF) is administratively housed within and operates under agreement with the Florida Department of Commerce. See subsections 445.004(1) and (2), F.S. In 2020, the Legislature modified the structure of Florida’s workforce development system to require the state board consult with the Florida Department of Commerce on provisions relating to the implementation of the Federal Workforce Innovation and Opportunity Act, including the direction it provides to CSF, Inc. In addition, the law modified the contractual relationship between CSF and the Florida Department of Commerce, transferred some responsibilities of CSF to the department, and specified that CSF works at the direction of the state board in consultation with the department. For an overview of Florida’s workforce development system, see “Economic Evaluation of CareerSource Florida’s Training Programs,” Office of Economic & Demographic Research, December 2015, pp. 5-7. [Economic Evaluation of CareerSource Florida’s Training Programs \(state.fl.us\)](https://www.floridaresearch.org/research/economic-evaluation-of-careersource-florida-s-training-programs)

⁷ Section 445.004(2), F.S. For a discussion on the general value of employee training, see APPENDIX ONE: LITERATURE REVIEW, Economic Evaluation of CareerSource Florida’s Training Programs, 2018, pp 26-32. [Economic Evaluation of CareerSource Florida’s Training Programs \(state.fl.us\)](https://www.floridaresearch.org/research/economic-evaluation-of-careersource-florida-s-training-programs)

⁸ Section 288.047(1) and (2), F.S., as created by Ch. 93-147, L.O.F. While the law contains general provisions, it gives CSF authority to adopt guidelines for the administration of the program. Current guidelines may be accessed at [Quick Response Training Guidelines.pdf \(careersourceflorida.com\)](https://careersourceflorida.com/wp-content/uploads/2024/06/Quick-Response-Training-Guidelines.pdf). Guidelines for the review period are available upon request from CareerSource Florida.

⁹ Section 288.047(2), F.S., specifies that grants may not be awarded to retail businesses, to reimburse businesses for trainee wages, or for training in connection with the intrastate relocation of a business unless it is determined that without such relocation the business will move outside this state or that the business has a compelling economic rationale for the relocation which creates additional jobs.

¹⁰ Section 288.046, F.S., more generally says: “It is further the intent of the Legislature that funds provided for the purposes of s. 288.047 be expended on businesses and industries that support the state’s economic development goals, particularly high value-added businesses or businesses that locate in and provide jobs in the state’s distressed urban and rural areas, and that instruction funded pursuant to s. 288.047 lead to permanent, quality employment opportunities.” As “targeted industries” is used in the CSF Guidelines, see <https://careersourceflorida.com/wp-content/uploads/2024/06/Qualified-Targeted-Industries.pdf>.

required that jobs pay at least \$6 per hour for participants in the state's Welfare Transition Program. In 2021, the law was changed to require jobs pay at least the state's minimum hourly wage.¹¹ Funding priority is also given to businesses in distressed urban and rural areas, or Brownfield areas.

To be eligible for grants, companies must create permanent, full-time jobs that require specialized training that is not available through the local community college or school district. In this regard, degree programs are specifically not reimbursable. All training must be completed within 24 months of the effective date of the contract with CSF, with the actual training session not to exceed 12 months.

In practice, the type of qualified training is flexible. For example, training may include occupational skills, professional development, strategies to improve efficiency of business operations, and technical/hard skills training such as computer software training. Other than degree programs, training not qualified for reimbursement includes:

- CPR, first aid, OSHA and safety training;
- New hire orientation, diversity and sexual harassment training;
- English as a second language training;
- Workplace literacy or soft skills training; or
- Training that takes place as part of a conference.

The methods of authorized training include structured on-site training, classroom, laboratory, "Train-the-Trainer," and computer-based training, either in person or online. Typical reimbursable costs include a portion of instructors'/trainers' salaries; curriculum development; textbooks and manuals; customized skills based online training; travel for trainers or trainees; and other costs. Trainee wages are not an allowable expense for reimbursement.

Grants are payable to the business after submission of documentation that the pre-approved training has been provided. The total state amount appropriated in FY 2020-21, FY 2021-22, and FY 2022-23 for QRT was \$9 million, \$7.5 million, and \$7.5 million, respectively.¹² In total, this is a 27.3 percent decrease in available funding over the prior review period. The statute governing the grant program and the CSF Guidelines do not address per-trainee award limits.

Incumbent Worker Training Program

Since 1999, Incumbent Worker Training (IWT) grants have provided match funding for pre-approved, direct training-related costs for existing full-time employees.¹³ The current guidelines require the following as part of the application's submission:

"A brief statement to ensure the training will directly assist the company in increasing its competitiveness, viability, and/or profitability, allowing it to create or save jobs, reduce turnover, and/or increase the trainee(s) 'short- or long-term wages. All grant projects shall be performance-based with specific, measurable performance outcomes, including the completion of the training project and the number of employees trained."

¹¹ Section 3, ch. 2021-164, L.O.F.

¹² Funds appropriated for QRT are contained in a special category of the same name within the Department of Commerce's budget for CareerSource Florida.

¹³ Section 445.003(3)(a)3., F.S., as created by section 57, ch. 99-251, L.O.F. See https://careersourceflorida.com/wp-content/uploads/2025/06/2025-26_IWT-Guidelines.pdf. Also see Florida Incumbent Worker Training Program Guidelines for the review period, available from CareerSource Florida.

Awards are prioritized for businesses with 25 or fewer employees, and businesses located in rural or distressed inner-city areas, as well as qualifying proposals from hospitals and healthcare facilities operated by nonprofit or local government entities. Funding priority is also given to businesses in qualified targeted industries, businesses whose grant proposals represent a significant upgrade in employee skills, and businesses whose grant proposals represent a significant layoff avoidance strategy. The IWT Guidelines limited grants to \$200,000 per grant per company during the review period.¹⁴

Grants are performance-based and payable to the business after submission of documentation that the pre-approved training has been provided. The types and methods of authorized training and reimbursable costs generally mirror that of the QRT program. Reimbursable training-related costs include the following capped expenses: instructors'/trainers' salaries, tuition, curriculum development, and textbooks and manuals. Reimbursable costs do not include pay for trainees' wages during training, compensation or fees for consultants, capital improvements, food, travel, conferences, exam fees, equipment, etc.

Annual funding for the IWT program is provided by federal funds related to the Workforce Innovation and Opportunity Act. The Florida Legislature authorized the expenditure of \$6 million of these federal funds in Fiscal Year 2020-21 and \$3 million per year for Fiscal Years 2021-22 and 2022-23.¹⁵

Summary

The expressed purpose of the QRT grant program is "...to meet the workforce-skill needs of existing, new, and expanding industries..."¹⁶ The IWT grant program exists to provide for "continuing education and training of incumbent employees at existing Florida businesses."¹⁷ Through their design, the benefits from these programs are primarily to the recipient businesses and their trainees, with incidental benefit to the state treasury.¹⁸

CSF administers the QRT and IWT grants on a "first come, first serve" basis.¹⁹ The grants are provided to qualified businesses for pre-approved expenditures related to initial training or retraining of employees. While functioning as a business subsidy for training costs, the QRT program (and to a lesser extent, the IWT program) may also serve as a meaningful inducement for businesses to remain or expand in, or relocate to, the state. This conclusion is based on surveys of economic development officials and grant recipients, and research regarding similar programs in other states.²⁰ While some question whether public resources should be used for firm-specific, customized training, proponents offer that such spending is necessary and beneficial to interests beyond the recipient business.²¹

¹⁴ A company may receive separate grants for locations with differing FEINs. Currently, the maximum grant award is \$100,000.

¹⁵ Funds appropriated for IWT are contained in a special category of the same name within the Department of Commerce's budget for CareerSource Florida.

¹⁶ Section 288.047(1), F.S.

¹⁷ Section 445.003(3)(a)3., F.S.

¹⁸ The ROI to the state is conditioned by the state's tax policy. However, as with other publicly-financed education programs, these relatively small per-unit investments in training through the QRT and IWT programs may generate an appreciable ROI to the state over the long-term.

¹⁹ CSF Guidelines: [Quick Response Training Guidelines.pdf \(careersourceflorida.com\)](#) and [Florida Incumbent Worker Training Program Guidelines \(careersourceflorida.com\)](#) However, the guidelines also state that "priority" is given to certain projects.

²⁰ See "Economic Evaluation of CareerSource Florida's Training Programs," Office of Economic & Demographic Research, December 2015, p. 9. [Economic Evaluation of CareerSource Florida's Training Programs \(state.fl.us\)](#)

²¹ For a discussion of the evolution of the use public funds for firm-specific, customized, skills-based training, Appendix One: The Evolving Economy and Workforce Training, in "Economic Evaluation of CareerSource Florida's Training Programs," Office of Economic & Demographic Research, December 2015. [Economic Evaluation of CareerSource Florida's Training Programs \(state.fl.us\)](#)

DESCRIPTION OF THE DATA

CareerSource Florida, Inc. (CSF) provided EDR data detailing the contracts with businesses participating in the Quick Response Training (QRT) and Incumbent Worker Training (IWT) grant programs.

CSF reported awarding QRT grants for a total of \$19.7 million to 45 Companies in Fiscal Years 2020-21, 2021-22, and 2022-23. Awarded IWT grants totaled \$10.5 million to 265 Companies over the same period.

METHODOLOGY

Statewide Model

EDR used the Statewide Model to estimate the return-on-investment for the training programs. The Statewide Model is a dynamic computable general equilibrium (CGE) model that simulates Florida's economy and government finances.²² The Statewide Model is enhanced and adjusted each year to reliably and accurately model Florida's economy. These enhancements include updating the base year the model uses as well as adjustments to how the model estimates tax collections and distributions.²³

Among other things, the Statewide Model captures the indirect and induced economic activity resulting from the direct program effects. This is accomplished by using large amounts of data specific to the Florida economy and its fiscal structure. Mathematical equations²⁴ are used to account for the relationships (linkages and interactions) between the various economic agents, as well as likely responses by businesses and households to changes in the economy.²⁵ The model also has the ability to estimate the impact of economic changes on state revenue collections and state expenditures in order to maintain a balanced budget by fiscal year.

When using the Statewide Model to evaluate economic programs, the model is shocked²⁶ using static analysis to develop the initial or direct effects attributable to the projects funded by the program. In this report, the annual direct effects are different for each program:

- For the QRT program, removal of the grant payments from the state budget, with a corresponding award to businesses as subsidies to production.
- For the IWT program, receipt of the federal funds from outside the state, essentially a “helicopter drop” that expands the economy through business subsidies to production.
- For both the QRT and IWT programs, an increase in primary factor productivity attributable to the expenditure on training.

After the direct effects are developed and estimated, the model is then used to estimate the additional—indirect and induced—economic effects generated by the program. This includes the supply-side responses to the activity, where the supply-side responses are changes in investment and the demand for labor arising from that activity. Indirect effects are the changes in employment, income, and output by local supplier industries that provide goods and services to support the direct economic activity. Induced effects are the changes in spending by households whose income is affected by the direct and indirect activity.

²² The statewide economic model was developed using GEMPACK software with the assistance of the Centre of Policy Studies (CoPS) at Monash University (Melbourne, Australia). CoPS has since relocated to Victoria University (Melbourne, Australia).

²³ Reports as of January 1, 2024 have 2018 as the base year.

²⁴ These equations represent the behavioral responses to economic stimuli – that is, to changes in economic variables.

²⁵ The business reactions simulate the supply-side responses to the new activity (e.g., changes in investment and labor demand).

²⁶ In economics, a shock typically refers to an unexpected or unpredictable event that affects the economy, either positively or negatively. In this regard, a shock refers to some action that affects the current equilibrium or baseline path of the economy. It can be something that affects demand, such as a shift in the export demand equation; or it could be something that affects the price of a commodity or factor of production, such as a change in tax rates. In the current analysis, a counter-factual shock is introduced to remove the impact of the program from the economy.

All of these effects can be measured by changes (relative to the baseline) in the following outcomes:

- State government revenues and expenditures
- Jobs
- Personal income
- Florida Gross Domestic Product
- Gross output
- Household consumption
- Investment
- Population

EDR's calculation of the Return on Investment (ROI) used the model's estimate of net state revenues and expenditures. Other measures required for this report include the net number of jobs created,²⁷ the increase or decrease in personal income, and the impact on gross domestic product, all of which are included in the model results.²⁸

For additional information related to the methodology, please see the discussion on key assumptions in the next section.

²⁷ As with most any policy change, there will be both winners and losers. That is, some industries may gain jobs while other industries could lose jobs.

²⁸ For an overview of Issues that shape EDR's Analysis of Economic Development Incentive Programs and Calculation of Return on Investment, See Appendix One, "Economic Evaluation for Select State Economic Development Incentive Programs," Office of Economic & Demographic Research, November 2021.

http://edr.state.fl.us/Content/returnoninvestment/ROISELECTPROGRAMS2020final_Revised%2011-29-21.pdf

KEY ASSUMPTIONS

The following general assumptions are used in the Statewide Model to determine the outcomes of the programs under review. Some of the assumptions are used to resolve ambiguities in the literature, while others conform to the protocols and procedures adopted for the Statewide Model.

1. The analysis assumes all data provided was complete and accurate. The data was not independently audited or verified by EDR.
2. The analysis assumes that given the time span under review, applying discount rates would not prove material to the outcome.
3. The analysis assumes that any state expenditure made for a program is a redirection from the general market basket of goods and services purchased by the state. Similarly, any revenue gains from increased business activities are fully spent by the state.
4. The analysis assumes that businesses treated the incentives as subsidies. The subsidies lowered the cost of production for each individual firm.
5. The analysis assumes the relevant geographic region is the whole state, not individual counties or regions. The model accounts and adjusts for the fact that industries within the state cannot supply all of the goods, services, capital, and labor needed to produce the state's output.

The following assumptions are specific to the QRT and IWT programs.

1. Funding of the IWT program is strictly federal; thus there is no state investment to generate a return.
2. The effect of each grant is to increase the amount of training each business would have purchased by the amount of the grant.
3. The effect of increasing the total spending on training is an equivalent increase in labor productivity. All other factor inputs' productivity increased by the same percentage as labor's percentage change.
4. The size and purpose of the grants are not conducive to capital investment.
5. The QRT and IWT programs stand alone and do not benefit from any other state and local incentives. Therefore, attribution is not relevant.
6. Training completion occurs and grant payments are made at a uniform rate over the training period.
7. Absent the training, an individual who participated in the QRT or IWT programs would have experienced productivity gains equal to average gains in the industry in which the trainee was employed.

8. The dollar increase in the training expenditure for a worker is exactly the dollar increase in his or her annual productivity due to training.
9. Increased factor productivity does not decline over the course of the analysis.

The above assumptions are a departure from prior years' analyses. Limitations of FETPIP data make it difficult to measure wage gains attributable to this type of training.²⁹ As a consequence, an alternative methodology was developed for this year's report. Rather than estimating wage growth and sharing out the estimated increase based on "share of total business and state projected training costs," it was assumed that the state's (or federal government's) share of the productivity gain attributable to training is equivalent to the state's (or federal government's) reimbursement of training costs.

The literature suggests that there is strong evidence that firms provide general training to their workers and share the benefits of training with them. One study suggests that a one percent increase in training will lead to both an increase in wages and productivity, with wages increasing 0.3 percent and productivity increasing 0.6 percent.³⁰ The current analysis employs similar assumptions. Specifically, it assumes that for each dollar increase in training expenditures, labor productivity increases by a dollar and total productivity increases by a multiple of that.³¹ The logic behind the above assumption is that businesses undertake training under the expectation of earning a return on their expenditures. The cost of the training includes not only the training expenditures, but also the wages paid to the benefiting employees and the value of the lost output that they would have produced. The state and federal grants only cover a portion of the cost of training. The rest is recouped by the business through expected higher future productivity.

²⁹ OPPAGA conducted an independent analysis in which they estimated significant wage gains relative to a control group for FY 2017-18; however, there was no significant increase in FY 2018-19. Data were not available to conduct a similar analysis for FY 2019-20. See OPPAGA, "Florida Economic Development Program Evaluations – Year 9," Report 21-09, December 2021, p. 61. <https://oppaga.fl.gov/Documents/Reports/21-09.pdf>

³⁰ See Literature Review, "Economic Evaluation of CareerSource Florida's Training Programs," Office of Economic & Demographic Research, December 2018, pp. 26-32. <http://edr.state.fl.us/Content/returnoninvestment/ROI-CareerSourceFITrainingProg.pdf>

³¹ The multiple depends on the industry. Those industries with higher capital-labor ratios will have a higher multiplier. The working assumption is that improved labor productivity also enhances the productivity of other primary factor inputs.

KEY TERMS

In the pages that follow, diagnostic tables describing the composition and statistics of the reviewed programs precede the discussion. Key terms used in the tables are described below:

State Payments Used in Analysis \$(M) – Represents the amount of state payments made to the program in each fiscal year. Note that one of the tables in this analysis uses the similar term “Federal Payments Used in Analysis” which represents the amount of federal payments made to the program.

Total Net State Revenues \$(M) – Represents the amount of new state revenue generated by the program in each fiscal year.

Personal Income (Nominal \$(M)) – Reflects income received by persons from all sources. It includes income received from participation in production as well as from government and business transfer payments. It is the sum of compensation of employees (received), supplements to wages and salaries, proprietors' income with inventory valuation adjustment (IVA) and capital consumption adjustment (CCAdj), rental income of persons with CCAdj, personal income receipts on assets, and personal current transfer receipts, less contributions for government social insurance.

Real Disposable Personal Income (Fixed 2018-19 \$(M)) – Reflects total after-tax income received by persons; it is the income available to persons for spending or saving.

Real Gross Domestic Product (Fixed 2018-19 \$(M)) – Measures the state's output; it is the sum of value added from all industries in the state. GDP by state is the state counterpart to the Nation's gross domestic product.

Consumption by Households and Government (Fixed 2018-19 \$(M)) – Reflects the goods and services purchased by persons plus expenditures by governments consisting of compensation of general government employees, consumption of fixed capital (CFC), and intermediate purchases of goods and services less sales to other sectors and own-account production of structures and software. It excludes current transactions of government enterprises, interest paid or received by government, and subsidies.

Real Output (Fixed 2018-19 \$(M)) – Consists of sales, or receipts, and other operating income, plus commodity taxes and changes in inventories.

Total Employment (Jobs) – Provides estimates of the number of jobs, full time plus part time, by place of work. Full time and part time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included.

Population (Persons) – Reflects first of year estimates of people, including survivors from the previous year, births, special populations, and three types of migrants (economic, international, and retired).

PROGRAM FINDINGS

While the state appropriated a total of \$24.0 million during the review period, actual state payments in the window totaled \$19.7 million for the QRT Program. The ROI is now projected to be 0.16. For every dollar spent on training, the state of Florida received 16 cents back in tax revenue, an amount insufficient to cover the state’s investment. This is comparable to the ROI from the 2019 cycle, 0.19, and slightly more than the ROI from the 2022 cycle, 0.06. These relatively modest differences in ROI suggest the program’s returns are stable.

Due to the existence of this program, Florida’s Real GDP increased by about \$158.1 million, and Real Disposable Personal Income grew by \$144.4 million during the review period. While the gain in Real GDP is lower than reported for the 2022 cycle, the gain in Personal Income more than doubled from that report.

Statewide Economic Model Impact Projections of QRT

		FY2021	FY2022	FY2023	Total
State Payments in the Window	Nominal \$ (M)	2.54	5.82	11.31	19.67
Total Net State Revenues	Nominal \$ (M)	0.31	0.69	2.14	3.14
Return-on-Investment by Year		0.12	0.12	0.19	
Return-on-Investment for the 3 year period					0.16

		FY2021	FY2022	FY2023	Total	Average per Year
Personal Income	Nominal \$ (M)	23.13	55.13	123.38	201.63	67.21
Real Disposable Personal Income	Fixed 2018-19 \$ (M)	16.62	38.30	89.52	144.44	48.15
Real Gross Domestic Product	Fixed 2018-19 \$ (M)	16.62	42.87	98.56	158.05	52.68
Consumption by Households and Government	Fixed 2018-19 \$ (M)	10.38	32.01	69.90	112.29	37.43
Real Output	Fixed 2018-19 \$ (M)	31.80	73.17	149.06	254.02	84.67

		FY2021	FY2022	FY2023	Minimum	Maximum	Average per Year
Total Employment	Jobs	165	315	589	165	589	356
Population	Persons	0	64	240	0	240	101

For the IWT program, no ROI can be calculated for the state’s investment since the funding is entirely federal. Nevertheless, it is possible to calculate the benefit to the state from the helicopter drop of federal dollars for the IWT program. Based on this approach, the state receives an additional 70 cents in state revenues for every federal dollar spent on employee training. While the federal payments for FY 2019-20 in the previous report and FY 2020-21 in this report are very close, the Net State Revenues for FY 2020-21 are significantly lower than those in FY 2019-20 of the previous report, \$0.93 million and \$1.41 million respectively. This is largely due to the approach of the analysis where the three-year period is considered the start of the program. The statewide model’s structure produces a ramping up effect for ongoing programs in this scenario.

Florida’s economy also benefits from the infusion of federal dollars for the IWT program. The economic impacts of the wage growth generated due to the federal investment in IWT over the three-year period are shown in the following table. Florida’s Real GDP increased by about \$316.6 million, and Real Disposable Personal Income grew by \$88.3 million during the review period.

Statewide Economic Model Impact Projections of the IWT Program

		FY2021	FY2022	FY2023	Total
Federal Payments in the Window	Nominal \$ (M)	3.52	3.66	3.34	10.52
Total Net State Revenues	Nominal \$ (M)	0.93	2.52	3.94	7.39
Return-on-Investment by Year		0.26	0.69	1.18	
Return-on-Investment for the 3 year period					0.70

		FY2021	FY2022	FY2023	Total		Average per Year
Personal Income	Nominal \$ (M)	33.8	40.7	43.2	117.6		39.2
Real Disposable Personal Income	Fixed 2018-19 \$ (M)	25.6	30.1	32.7	88.3		29.4
Real Gross Domestic Product	Fixed 2018-19 \$ (M)	89.2	109.6	117.7	316.6		105.5
Consumption by Households and Government	Fixed 2018-19 \$ (M)	26.3	37.4	45.6	109.3		36.4
Real Output	Fixed 2018-19 \$ (M)	47.9	65.5	76.8	190.2		63.4

		FY2021	FY2022	FY2023	Minimum	Maximum	Average per Year
Total Employment	Jobs	316	481	637	316	637	478
Population	Persons	0	118	312	0	312	143

The results presented for these analyses are dependent upon the assumptions listed earlier. One caveat is that it is explicitly assumed that the trained employees remain in the same industry. Based on the 2021 OPPAGA report, this appears to not be the case. Relative to the earlier review period for QRT, 25 percent of the trained employees had left the state within three years from the end of the prior review period. An additional 36 percent were working for a different employer in a different industry. For the IWT program, 19 percent of the trained employees had left the state, and an additional 30 percent were working for a different employer in a different industry.³² For those that left the state, there is a direct loss of the benefits of training. The economic impact from those who switched industries is ambiguous without further analysis.

³² See OPPAGA, "Florida Economic Development Program Evaluations – Year 9," Report 21-09, December 2021, pp. 61-70. <https://oppaga.fl.gov/Documents/Reports/21-09.pdf>

APPENDIX ONE: OBSERVATIONS REGARDING THE EFFECTIVENESS OF QRT AND IWT

In 2018, EDR reviewed the wage growth of trainees in CareerSource Florida’s Quick Response Training (QRT) and Incumbent Worker Training (IWT) programs. The results in this section are derived from data on QRT and IWT contracts and trainees. Grant-driven wage growth per grant dollar is the measure of effectiveness used in this section. It is a measure of a trainee’s wage growth per grant dollar allocated to him that takes into account that the grant only covered a portion of his training costs and therefore only a portion of his wage growth is grant-driven.

The table below presents some raw values and basic estimates (by EDR) for all grant contracts for which there was some training between the start of FY 2014-15 and the end of FY 2015-16.

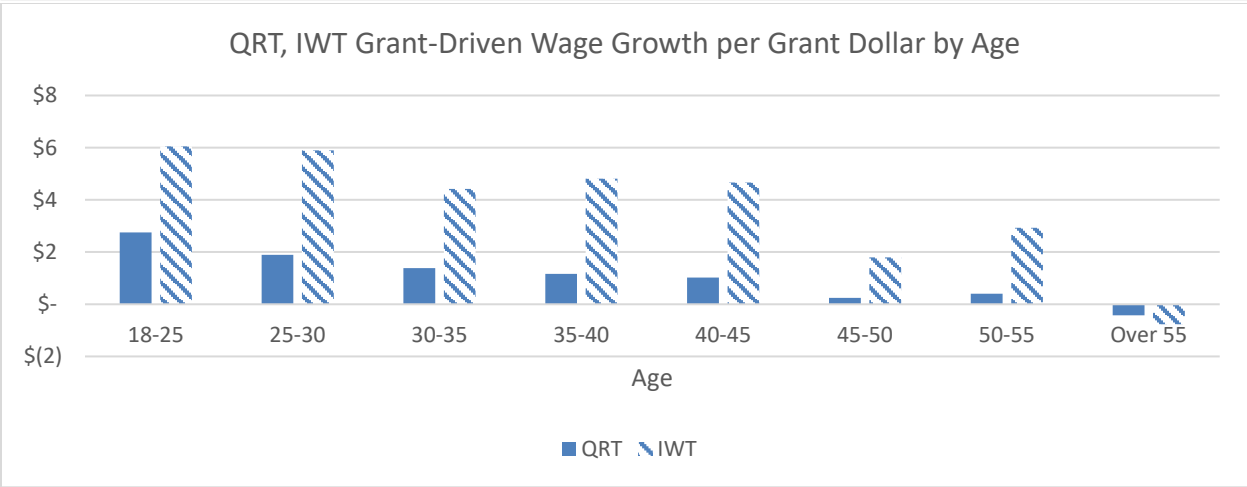
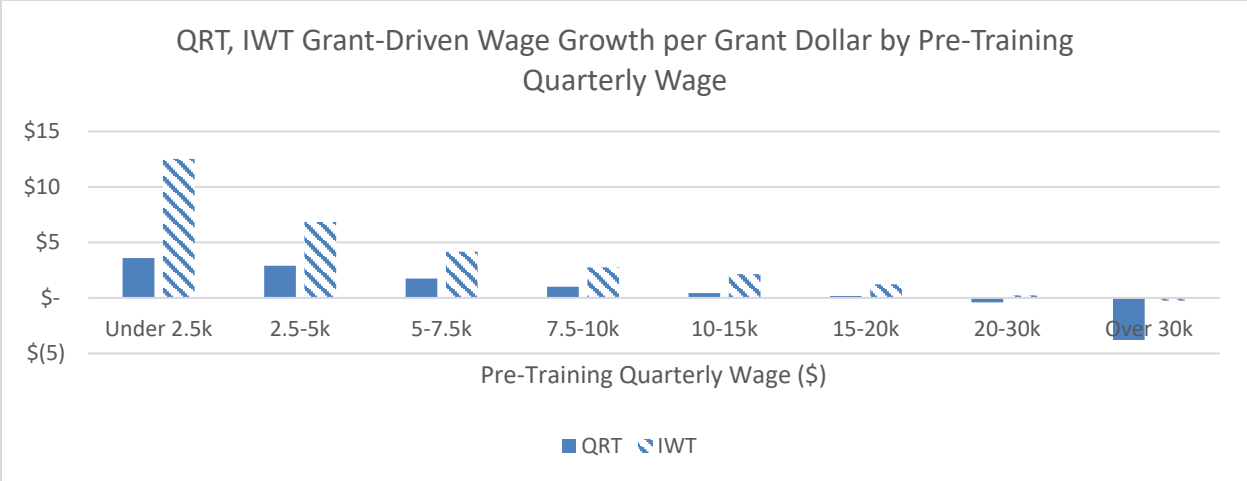
Table 6. Summary Statistics for QRT and IWT Programs

	QRT	IWT
Number of Contracts	136	301
Grant Funds Spent	\$37,245,035	\$4,150,382
Number of Trainees (from CareerSource Florida)	27,525	11,886
Number of Trainees (for wage growth estimates) ³³	16,496	7,907
Estimated Wage Growth (before the end of FY2016-17)	\$214,397,494	\$116,643,417
Estimated Grant-Driven Wage Growth (before the end of FY2016-17)	\$46,773,032	\$15,427,595

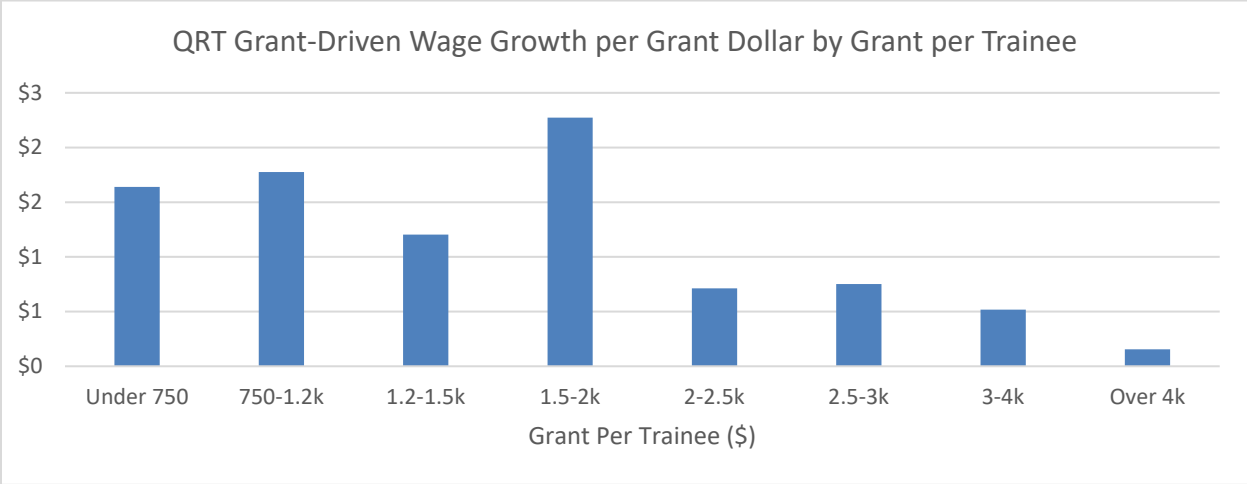
In the five graphs below, trainees are assigned to groups based on their pre-training quarterly wage, age, grant per trainee, or two-digit NAICS code. The interpretation of the leftmost bar on the first graph is that, for each \$1 of QRT funds that was allocated to a trainee whose pre-training quarterly wage was under \$2,500, there was \$3.69 of grant-driven wage growth. The takeaway from the first four graphs is that, for both QRT and IWT, the effectiveness of grant funds decreases as pre-training wage, age, or grant per trainee increase.³⁴

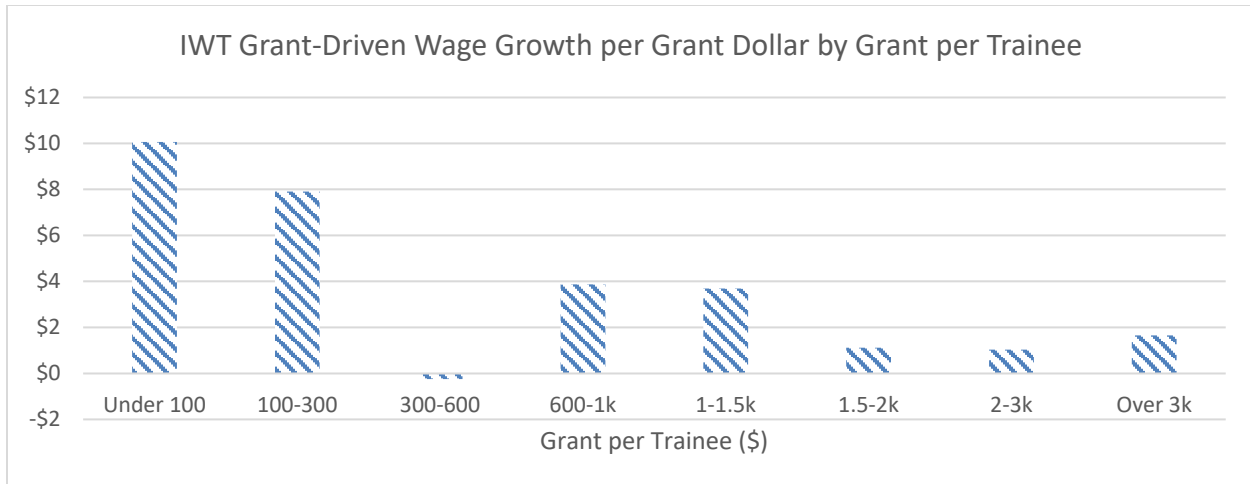
³³ These are the trainees (within Florida Education and Training Placement Information Program, or FETPIP, data) that were matched with the businesses (within CSF data) that were likely to have trained them. The matching process uses the FEINs of trainees’ employers and FEINs of businesses that received grants. Due to limitations of the data, each trainee is only matched with the first business that trained him under a QRT grant and the first business that trained him under an IWT grant. Approximately 88% of trainees, within FETPIP data, who first received QRT funded training in FY2014-15 or FY2015-16 were successfully matched.

³⁴ In their review of the QRT program, OPPAGA reported that the “... most frequently reported type of training was leadership and management (39%), followed by computer hardware and software (14%).” See “Florida Economic Development Program Evaluations – Year 9” OPPAGA Report No. 21-09, December, 2021, p. 56. <https://oppaga.fl.gov/Documents/Reports/21-09.pdf>



For the next variable (grant per trainee), the QRT and IWT results are displayed on two separate graphs.





There is a clear inverse relationship between grant-driven wage growth per grant dollar and the pre-training wage, age, and grant per trainee variables.³⁵

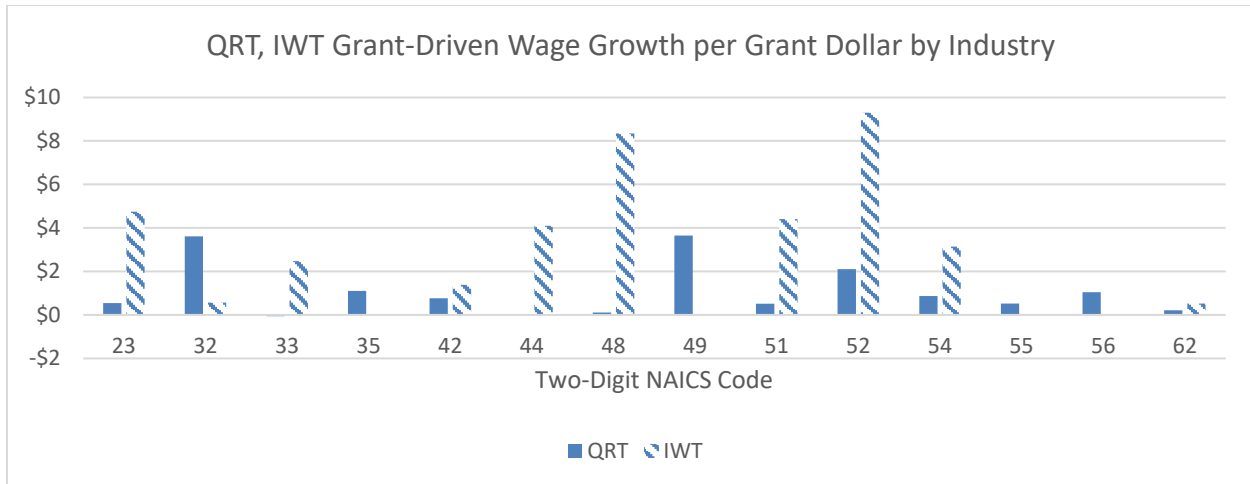
The age result here is somewhat in contrast with the results in the literature review that youths experience smaller program effects. However, the results in the literature review were only comparisons of very young workers to other workers. Dostie and Leger (2014) find that “the wage impact of training also declines with age. More specifically, we show that a worker aged 25 to 34 who participates in firm-sponsored classroom (FSC) training earns 1.2 percent more than a young worker who does not participate in FSC training. These wage impacts decline to 0.7 percent for workers aged 55 to 64.” They also write “we are not aware of any studies presenting differential wage impacts of training by age.”

The relationship between the effectiveness of training and pre-training wage was not addressed in the literature review, but the result here is consistent with the result that there is an inverse relationship between the effectiveness of training and education level.³⁶ Further, Bartel (1995) finds that the effect of the type of training provided to workers with low salaries relative to others in their position (ie. remedial training) on wage growth rates is five times greater than the effect of the type of training provided to workers with relatively high salaries (i.e., stars).

The grant per trainee result here is consistent with the related results in the literature review.

³⁵ The relationships are just as clear under the two robustness checks. The first check is to extend the time period over which each trainee’s total wage growth is measured from two to three years. The second check is to replace each trainee’s counterfactual quarterly wage growth rate from one based on their pre-training wage, age, and industry to 1%.

³⁶ See Appendix One in “Economic Evaluation of CareerSource Florida’s Training Programs,” Office of Economic & Demographic Research, December 2018. [Economic Evaluation of CareerSource Florida’s Training Programs \(state.fl.us\)](https://www.state.fl.us/economic-research/research-reports/economic-evaluation-of-careersource-florida-training-programs)



Regarding the QRT program, industries 32 (Manufacturing II), 49 (Transportation and Warehousing II), and 52 (Finance and Insurance) appear to perform well. With the two robustness checks (see footnote 27), industry 32's average value falls to 0.42 but industry 49 and industry 52 continue to perform well. Industry 33 (Manufacturing III) performs the worst but received by far the most QRT grant funds. Regarding the IWT program, industries 23 (Construction), 31 (Manufacturing I), 44 (Retail), 48 (Transportation and Warehousing I), 51 (Information), 52 (Finance and Insurance), and 54 (Professional, Scientific, and Technical Services) appear to perform well and continue to do so in the two robustness checks.³⁷

The final test provides a check of whether grant-driven wage growth per grant dollar's relationship with one variable is driven by its relationship with one or more other variables.³⁸ For example, perhaps it only has an inverse relationship with age because it has an inverse relationship with pre-training wage and young people tend to have low wages. Or perhaps its low QRT value for a particular industry is only because that industry tends to train older, higher-income workers. In this test, each relationship is measured while controlling for the others.

The results are that, for both QRT and IWT, the inverse relationships with pre-training quarterly wage, age, and grant per trainee are maintained, but the ranking of industries does change. For QRT, the most notable differences are that industries 49 and 52 fall from first and third to third and sixth whereas industries 23 and 33 rise from eighth and thirteenth to second and fourth. For IWT, the most notable differences are that industries 48 and 51 fall from third and fifth to seventh and eleventh whereas industry 33 rises from eighth to first.

An industry's rise (fall) indicates that part of its low (high) ranking in the graph can be attributed to the fact that its trainees tend to have relatively high (low) values for pre-training quarterly wage, age, or grant per trainee.

³⁷ For the graph of effectiveness by industry, industry 31 (Manufacturing I) has been removed to make the graph easier to read: it does not have a QRT value and its IWT value is approximately 19.6.

³⁸ Specifically, I run two OLS regressions (one for QRT, one for IWT) in which the dependent variable is grant-driven wage growth per grant dollar and the independent variables are pre-training quarterly wage, age, grant per trainee, and a dummy variable for each of the industries that appear in the relevant industry graph.

Policy Considerations

Because of the close relationship between wage growth due to training and productivity growth due to training,³⁹ the wage growth results in the literature review and from the QRT and IWT data analysis are informative about what program characteristics make a productivity-focused training program more effective. In particular, the characteristics below would likely contribute to such a training program's effectiveness:

- provides grants for on-the-job training;
- has a focus towards workers with a low level of
 - education,
 - pre-training wage, and
 - age (however, not youths);
- returns a low level of grant per trainee; and
- targets industries in line with the explanations above.

Comments

While the return associated with the QRT training program is relatively low, it is worth reiterating that a Return-on-Investment does not address issues of overall effectiveness or societal benefit. It is beneficial to the state to have a more productive and educated populace, even if the financial returns are initially minimal. Additionally, returns to the employees may take decades to develop and may not be captured in a three-year period. Furthermore, the availability of these programs signals to the business community that the state is actively engaged in devising strategies and providing resources to meet their workforce training needs. Collectively, these programs enhance the state's business climate and support state and local economic development efforts.

³⁹ The consensus in the training literature is that the effect of training on a worker's wage growth is approximately half of its effect on his productivity growth. See Barron et al. (1989), Dearden et al. (2005), Ballot et al. (2006), Colombo and Stanca (2008), and Konings and Vanormelingen (2010).

REFERENCES

- Almeida and Carneiro. 2009. The Return to Firm Investments in Human Capital. *Labour Economics*. 16(1). 97-106.
- Andersson, Holzer, Lane, Rosenblum, Smith. (2016). Does Federally-Funded Job Training Work? Non-experimental Estimates of WIA Training Impacts Using Longitudinal Data on Workers and Firms. CESifo Working Paper. No. 6071.
- Arulampalam, Booth, and Elias. 1995. Work-related Training and Earnings Growth for Young men in Britain. *The Warwick Economics Research Paper Series*. 440.
- Ashenfelts. 1978. Estimating the Effect of Training Programs on Earnings. *The Review of Economics and Statistics*. 60(1). 47-57.
- Ballot, Fakhfakh, and Taymaz. 2006. Who Benefits from Training and R&D, the Firm or the Workers? *British Journal of Industrial Relations*. 44. 473-495.
- Barnow and Smith. 2016. Employment and Training Programs. *Economics of Means-Tested Transfer Programs in the United States, Volume 2*. 127-234.
- Barron, Black, and Loewenstein. 1989. Job Matching and On-the-Job Training. *Journal of Labor Economics*. 7(1). 1-19.
- Bartel. 1995. Wage Growth, and Job Performance: Evidence from a Company Database. *Journal of Labor Economics*. 13(3). 401-425.
- Bassanini, Booth, Brunello, de Paola, Leuven. 2005. Workplace Training in Europe. *IZA Discussion Paper No. 1640*.
- Benhabib and Spiegel. 1994. The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary Economics*. 34(2). 143-173.
- Bishop. 1996. What We Know About Employer-Provided. Training: A Review of Literature. Center for Advanced Human Resource Studies. Working Paper 96-09.
- Blundell, Dearden, and Meghir. 1996. The Determinants and Effects of Work-Related Training in Britain. *Institute for Fiscal Studies*. R50.
- Blundell, Dearden, Meghir, and Sianesi. 1999. Human Capital Investment: The Returns from Education and Training to the Individual, the Firm and the Economy. *Fiscal Studies*. 20(1). 1-23.
- Booth and Bryan. 2002. Who Pays for General Training? New Evidence for British Men and Women. *IZA Discussion Paper No. 486*.
- Card, Kluve, and Weber. 2009. Active Labour Market Policy Evaluations: A Meta-Analysis. *The Economics Journal*. 120(548). F452-F477.

- Card, Kluge, and Weber. 2018. What Works? A Meta-Analysis of Recent Active Labor Market Program Evaluations. *Journal of the European Economic Association*. 16(3). 894–931.
- Colombo and Stanca. 2008. The Impact of Training on Productivity: Evidence from a Large Panel of Firms. Working Paper.
- Dearden and Van Reenan. 2005. The impact of Training on Productivity and Wages: Evidence from British Panel Data. *Oxford Bulletin of Economics and Statistics*. 68. 397-421.
- Feinstein, Galindo-Rueda, Vignoles. 2004. The Labour Market Impact of Adult Education and Training: A Cohort Analysis. *Scottish Journal of Political Economy*. 51. 266-280.
- Frazis and Loewenstein. 2005. Reexamining the Returns to Training: Functional Form, Magnitude, and Interpretation. *The Journal of Human Resources*. 40(2). 453-476.
- Gerfin. 2004. Work-Related Training and Wages: An Empirical Analysis for Male Workers in Switzerland. IZA Discussion Paper, No. 1078.
- Glazerman and McConnell. 2001. National Job Corps Study: The Benefits and Costs of Job Corps. Mathematica Policy Research, Inc.
- Greenberg, Michalopoulos, and Robins. 2003. A Meta-Analysis of Government Sponsored Training Programs. *ILR Review*. 57(1). 31-53.
- Heckman, LaLonde, and Smith. 1999. The Economics and Econometrics of Active Labor Market Programs. *Handbook of Labor Economics*, Volume III.
- Heckman and Smith. 1999. The Pre-Program Earnings Dip and the Determinants of Participation in a Social Program: Implications for Simple Program Evaluation Strategies. NBER Working Papers No. 6983.
- Heinrich, Mueser, Troske, Jeon, Kahvecioglu. (2013). Do Public Employment and Training Programs Work? *IZA Journal of Labor Economics*. 2(6).
- Hollenbeck. 2009. Return on Investment Analysis of a Selected Set of Workforce System Programs in Indiana. Upjohn Institute for Employment Research.
- Hollenbeck. 2012. Return on Investment in Workforce Development Programs. Upjohn Institute for Employment Research. Upjohn Institute Working Paper. 12-188.
- Hollenbeck and Huang. 2006. Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State. Upjohn Institute Technical Report No. 06-020.
- Hollenbeck and Huang 2008. Workforce Program Performance Indicators for The Commonwealth Virginia. Upjohn Institute Technical Report No. 08-024.
- Holzer, Block, Cheatham, and Knott. 1993. Are Training Subsidies for Firms Effective? The Michigan Experience. *ILR Review*. 46(4). 625-636.

Kambourov, Manovskii, and Plesca. 2010. Returns to Government-Sponsored Training. Working paper.

Kluge, Jochen, 2010. The Effectiveness of European Active Labor Market Programs. *Labour Economics*. 17(8). 904-918.

Konings and Vanormelingen. 2010. The Impact of Training on Productivity and Wages: Firm Level Evidence. *Review of Economics and Statistics*. 97(2). 485-497.

Lengermann. 1996. How Long Do the Benefits of Training Last? Evidence of Long Term Effects Across Current and Previous Employers, Education Levels, Test Scores, and Occupations. Center for Advanced Human Resource Studies. Working Paper.

Leuven and Oosterbeek. 1999. The Demand and Supply of Work-Related Training: Evidence from Four Countries. *Research in Labor Economics*. 18. 303-330.

Leuven and Oosterbeek. 2008. An Alternative Approach to Estimate the Wage Returns to Private-Sector Training. *Journal of Applied Econometrics*. 23(4). 423-434.

Lillard and Tan. 1986. Private Sector Training. Who Gets It and What are Its Effects? Prepared for the U.S. Department of Labor.

Loewenstein and Spletzer. 1998. Dividing the Costs and Returns to General Training. *Journal of Labor Economics*. 16(1). 142-171.

Mincer. 1994. Investment in U.S. Education and Training. NBER Working Paper No. 4844.

Tan, Chapman, Peterson, and Booth. 1991. Youth Training in the United State, Britain, and Australia. U.S. Department of Education.