Identifying the impacts of job training programs in California

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Policy Brief

Every year, over a million Californians receive workforce support and training from state and federally funded programs. In an effort to learn more about the impact of these programs and to improve them, an inter-agency partnership led by the California Workforce Development Board (CWDB) created Cross-System Analytics and Assessment for Learning and Skills Attainment (CAAL-Skills). The CAAL-Skills partnership facilitates data-sharing across seven California state agencies that deliver thirteen workforce programs. Bringing this data together significantly improves the state's ability to observe who is enrolled in these programs and makes it possible, for the first time, to measure the impacts these programs have on participants' employment and earnings.

This policy brief highlights findings from the first causal study to estimate the impacts of ten training programs that report to CAAL-Skills, performed by the California Policy Lab of the University of California. The causal impact measures the effect of receiving training on participants' employment and earnings, relative to what those same workers would have experienced without training. Training participants are compared to matched individuals with similar demographic and earnings histories who did not receive training, and the impact of training is measured as the difference between the trainees' outcomes and their matched "twins." This strategy successfully identifies training impacts for most of the training programs. However, there are a few programs – particularly those that serve distinctive populations with specific employment barriers, such as Vocational Rehabilitation programs – for which the strategy is not successful at identifying valid comparisons. Of the ten programs that provide training, evidence on causal impact estimates was available for six programs, suggestive evidence on impacts was available for two programs, and no evidence on impacts was available for two programs. Full methodological details and findings, along with

improved research options for all programs and the CAAL-Skills partnership are detailed in the report.[i]

Key findings

- A key contribution of the CAAL-Skills integrated data was the possibility of measuring cross-enrollment or cross-training across different programs. The study found little incidence of cross-enrollment, outside of standard program progressions. Most participants receive training from just a single program. This allows for undiluted estimates of program impacts.
- All eight of the programs for which causal impacts could be estimated had positive effects on participants' employment (see Table 1).
- Five of the eight programs had positive effects on earnings, while the remaining three programs had effects indistinguishable from zero (see Table 1).
- These findings underscore the value of training investments made by the State of California and the agencies participating in CAAL-Skills, and the usefulness of the CAAL-Skills data infrastructure and partnership for increasing our understanding of the effectiveness of training. The report concludes by outlining further improvements to the data infrastructure and additional evaluation opportunities, in particular for the programs that could not be successfully studied here.

TABLE 1: Overview of causal evidence available and direction of labor market impacts, by program

PROGRAM OFFERING TRAINING	CAUSAL EVIDENCE AVAILABLE	EMPLOYMENT	EARNINGS
WIOA Title I Adults	Yes	+	+
WIOA Title I Dislocated Workers	Yes	+	+
WIOA Title I Youth	Suggestive	+	+
WIOA Title II Adult Education	No	N/A	N/A
WIOA Title IV Vocational Rehabilitation	No	N/A	N/A
Career and Technical Education	Yes	+	0
Employment Training Panel	Suggestive	+	+
State Certified Apprenticeship	Yes	+	+
Trade Adjustment Assistance	Yes	+	0
Welfare-to-Work	Yes	+	0

Notes: Impact estimates are based on quarterly employment and earnings up to three years after program entry from Unemployment Insurance Wage records. A "+" denotes a statistically significant positive impact on quarterly employment or earnings at a 95% level of confidence, while "0" denotes a statistically insignificant impact, and "N/A" reflects non-applicable differences given causal impact estimates were unavailable. WIOA stands for the Workforce Innovation and Opportunity Act.

Study overview

Purpose

A statistical evaluation of the labor market impacts of the programs in CAAL-Skills provides important insights for improving workforce programs in California and is mandated by law.[ii] To satisfy this requirement and to provide information for improving training programs in California, an independent evaluation of CAAL-Skills programs was performed by the California Policy Lab (CPL) of the University of California in partnership with the California Workforce Development Board. The purpose of the evaluation was to perform a rigorous analysis of workforce programs that report to CAAL-Skills, in order to isolate the impact of these programs on the labor market outcomes of training participants.

Background

California maintains a robust network of workforce support and training programs that serve over one million workers annually. These programs are administered by multiple state agencies, each serving a diverse population with varying levels of skills and workforce attachment. The primary goal of these programs is to maintain a resilient and skilled workforce, and California has begun to develop a unified framework across programs to allow for statistical evaluation and continuous quality improvement.

This policy brief is based on an in-depth report that presents results from the first impact evaluation study relying on the system created by the inter-agency partnership Cross-System Analytics and Assessment for Learning and Skills Attainment (CAAL-Skills). Through this partnership, which is led by the California Workforce Development Board (CWDB), eights state agencies share data about thirteen workforce and training programs in order to support research and evaluation of these programs. In addition to program-level information, this linked dataset includes ten years of earnings history data provided by the Employment Development Department from the Unemployment Insurance Base Wage file. The agencies and programs included in this study are listed here, and brief descriptions for each are included in the appendix:

- California Community Colleges Chancellor's Office: Career and Technical Education
- California Department of Education: Workforce Innovation and Opportunity Act[iii] (WIOA) Title II Adult Education
- California Department of Social Services: Welfare-to-Work
- Employment Development Department: WIOA Title I Adults
- Employment Development Department: WIOA Title I Dislocated Workers
- Employment Development Department: WIOA Title I Youth
- Employment Development Department: WIOA Title III Wagner-Peyser
- Employment Development Department: Trade Adjustment Assistance
- Department of Industrial Relations: State Certified Apprenticeship
- Department of Rehabilitation: WIOA Title IV Vocational Rehabilitation
- Employment Training Panel

The evaluation was performed by the California Policy Lab (CPL) in partnership with the California Workforce Development Board. CPL was contracted to perform a statistically rigorous evaluation that would estimate program impacts on participants' labor market outcomes. The goal of the study was to answer the following research questions:

1. Who participates in the workforce programs that report to CAAL-Skills and how many of these participants cross-enroll or cross-train in other programs?
2. Does the training provided by each program lead to changes in employment rates?
3. Does the training provided by each program lead to changes in wage levels?

Study Design

To measure causal impacts for each program, the study team implemented a non-experimental research design that used the extensive CAAL-Skills data to form matched comparison groups. The data include participation records from all programs as well as over 10 years of earnings histories. Combined, the data contains information on where and when participants engaged in a workforce or training program, their demographic backgrounds, and their employment and earnings histories. Using this information, for each program, the study tried to identify a group of non-trainees who matched trainees on all of these characteristics before they each entered their

respective workforce or training program. When the design worked, this resulted in comparison groups of non-trainees whose post-program labor market outcomes reflect those one would expect of trainees had they not participated in the training program. Because of this, calculating the post-program difference in employment and earnings across trainees and their respective comparison groups provides a causal impact of the training. See the report for full details of the design and its application for each training program.

Study time period

This initial study estimated impacts for trainees who entered their respective programs during fiscal years (FY) 2014-15 and 2015-16. The selection of these cohorts represents a trade-off between more recent entrants and the needs of an evaluation. Specifically, using these cohorts allows for three years of employment outcomes to be observed after program entry – a length of time that should allow for the impacts from training to materialize over the medium term. Future analyses can apply the same methods to more recent trainees with shorter follow-up periods as data become available. These different time periods can be chosen based on the expected duration and specific evaluation needs of each program.

Success of the design for each program

For each of the ten programs that offer training, the study identified a single comparison to highlight and applied the research design with varying results. Six training programs were identified where causal impacts could be estimated, two additional programs were identified where suggestive evidence on causal impacts was available, and two programs were identified where causal impact estimates were unavailable. For those where suggestive evidence was available, the design generally worked as intended, but the study identified some features that suggest the findings should be interpreted with caution. In that sense, the study team believes suggestive evidence is pointing in the right direction, but more research to answer the question should be pursued to confirm the results. For those where no causal evidence was available, the study was unable to successfully implement the design. These challenges and potential solutions are clarified in the report. Each training program, along with the non-training population that was used to identify the comparison groups, are given in Table 2.

TABLE 2: Overview of causal evidence available and design for primary comparisons by program

PROGRAM OFFERING TRAINING	CAUSAL EVIDENCE AVAILABLE	NON-TRAINING POPULATION FOR DESIGN
WIOA Title I Adults	Yes	Wagner-Peyser
WIOA Title I Dislocated Workers	Yes	Wagner-Peyser
WIOA Title I Youth	Suggestive	Non-training Title I Youth
WIOA Title II Adult Education	No	Wagner-Peyser
WIOA Title IV Vocational Rehabilitation	No	Non-training Title IV Vocational Rehabilitation
Career and Technical Education[a]	Yes	Wagner-Peyser
Employment Training Panel	Suggestive	Wagner-Peyser
State Certified Apprenticeship	Yes	Wagner-Peyser
Trade Adjustment Assistance	Yes	Wagner-Peyser
Welfare-to-Work	Yes	Non co-enrolling Welfare-to-Work[b]

[a] Career and Technical Education trainees were limited to those aged 25 to 49.

[b] Non co-enrolling Welfare-to-Work participants are those who did not enroll in any other workforce program that reports to CAAL-Skills.

When interpreting impacts, it is important to consider the specific comparison group that was identified. Specifically, all individuals included in the CAAL-Skills dataset received some workforce service – even if it was not training. For example, for the WIOA TI Adult trainees, the comparison group received workforce services from Wagner-Peyser – a program that does not generally provide training. As another example, for Welfare-to-Work "trainees," the comparison is Welfare-to-Work participants who did not cross-enroll in another workforce program that reports to CAAL-Skills. This comparison was made because detailed data on Welfare-to-Work activities were unavailable for the study. However, there are many other workforce and training services that may have been available to Welfare-to-Work participants that did not cross-enroll. For this reason, the resulting impacts may not reflect the most relevant comparison for policy decision making. The report includes a more detailed discussion on the implications for interpreting impacts as well as suggestions for future studies to improve the available evidence.

Results

Cross-enrollment and cross-training

An important and unanswered question about workforce and job training programs in California is whether individuals simultaneously enroll and train in multiple programs. Without knowing how often such cross-participation occurs, it is difficult to isolate the impacts of any one program. The study found that this was not very common amongst programs reporting to CAAL-Skills. Specifically, there were no patterns of cross-enrollment that were not explained by natural program progressions. For example, the largest co-enrollment for workforce programs existed between workforce services administered by the same agency – the Employment Development Department (EDD). Within EDD, it is common for individuals to jointly enroll in Wagner-Peyser services along with programs that offer additional individualized and training services, including WIOA Title I programs and Trade Adjustment Assistance. This is expected because enrollment into all of EDD's programs often happen in the same location, and enrolling in Wagner-Peyser could be an entry point into these other programs. This is shown in Table 3, which presents the number of participants in each program, the percentage from those programs who received training, as well as their cross-program participation.

TABLE 3: Training and cross-program participation for participants from FYs 2014-15 and 2015-16

PROGRAM OFFERING TRAINING	PARTICIPANTS	TRAINED	CO-ENROLLED	CROSS-TRAINED
WIOA Title I Adults	77,183	24%	39%	4%
WIOA Title I Dislocated Workers	38,250	26%	41%	5%
WIOA Title I Youth	24,827	58%	50%	7%
WIOA Title II Adult Education	400,476	100%	6%	2%
WIOA Title III Wagner-Peyser	1,138,313	0%	7%	3%
WIOA Title IV Vocational Rehabilitation	44,348	48%	13%	7%
Career and Technical Education	930,327	100%	6%	2%
Employment Training Panel	170,152	100%	.u	.u
State Certified Apprenticeship	47,662	100%	17%	14%
Trade Adjustment Assistance	1,272	58%	52%	8%
Welfare-to-Work[a]	311,670	0%	14%	7%

Notes: Authors calculations using CAAL-Skills data. ".u" represents unavailable information because participants in the Employment Training Panel program were not identified across programs in the CAAL-Skills data.

[a] Training activities provided to Welfare-to-Work participants through the program are unavailable in the CAAL-Skills data.

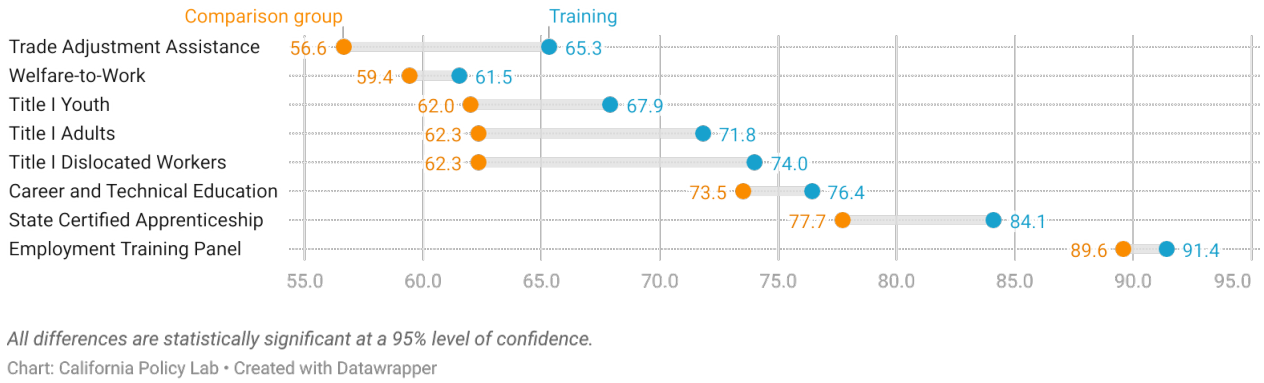
Impacts on employment and earnings

For training programs where causal evidence was available, the study authors calculated the causal difference in employment and earnings across study groups up to three years after program entry. These results are presented in Figure 1 for quarterly employment and Figure 2 for quarterly earnings. In each figure, the average outcome for the training group and the corresponding comparison group are plotted next to each other in order to highlight the impact of training from each program.

Training impacts on employment are positive for all eight programs where causal evidence was available. As shown in Figure 1, the levels of employment varied substantially across programs. To help contextualize this, the average outcomes for the comparison groups are informative, because they represent what one would have expected for trainees had they not trained. The fact the comparison group averages vary greatly across programs highlights the differences in populations served by these programs. For example, for Trade Adjustment Assistance's comparison group 56.6 percent were employed in any given quarter on average compared to 89.6 percent for the Employment Training Panel's comparison group. The size of the impacts also

varied considerably across programs. However, the study team strongly cautions against making direct comparisons of impacts across programs because each program serves a different population with different needs. In other words, the training programs should not be considered direct substitutes for each other.

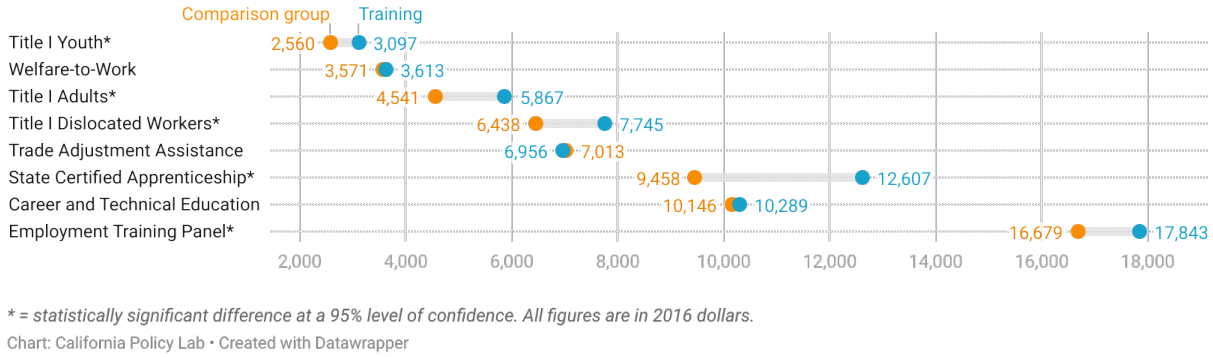
FIGURE 1: Average quarterly employment rates from the research design, by training program



Notes: Outcomes are measured from quarter 7 through quarter 11 after program entry. Programs are ordered according to the average outcomes of the comparison group from smallest to largest. Trainees from the Title II Adult Education (63.9% employed) and Title IV Vocational Rehabilitation (59.5% employed) programs were excluded since a credible comparison group was not identified.

Training impacts on earnings were positive for five of the training programs and were essentially zero for three programs. As shown in Figure 2, the programs with positive training impacts were Title I Youth, Title I Adults, Title I Dislocated Workers, the State Certified Apprenticeship program, and the Employment Training Panel. As with employment, the figure shows substantial variation in the level of earnings across training programs. For example, the average quarterly earnings for Title I Youth's comparison group is $2,560 per quarter compared to $16,679 per quarter for the Employment Training Panel. This variation again highlights the challenge with comparing the impacts of training across programs because the populations served in each vary considerably. Another take-away is that a positive impact on earnings might not be sufficient for workers to have a high-quality job. For example, earnings increased for individuals who received training in Title I Youth and Adult programs, but even those increased average quarterly earnings are still low enough for participants to be eligible for safety-net programs, such as CalFresh.

FIGURE 2: Average quarterly earnings from the research design, by training program



Notes: Outcomes are measured from quarter 7 through quarter 11 after program entry. Programs are ordered according to the average outcomes of the comparison group from smallest to largest. Trainees from the Title II Adult Education ($4,439 in quarterly earnings) and Title IV Vocational Rehabilitation ($2,981 in quarterly earnings) programs were excluded since a credible comparison group was not identified.

Implications

This is the first study using the CAAL-Skills dataset to assess the effectiveness of 10 of the state's training programs on labor market outcomes. A primary finding is that many of the training programs lead to increased earnings and employment. These results serve as a benchmark for future evaluations on workforce training programs in California and the evaluation provides a framework for future research to estimate the impacts of these programs moving forward.

However, there are remaining study challenges that need to be addressed. Many of these challenges relate to the need for more and consistent data across programs. This includes information collected at the time of enrollment as well as improved measures of program services received and completed. One strategy to do this would be for state agencies to collaborate in the creation of common data elements. Other challenges relate to refining the relevant "training group" since participation in some programs is sometimes broadly available and may not reflect a program's intended population, such as for the Career and Technical Education, Welfare-to-Work, and Vocational Rehabilitation programs. This challenge can be addressed through continued partnership between CWDB and CAAL-Skills partner agencies to identify the most appropriate training populations from the larger program.

CAAL-Skills can also play a role in supporting important extensions to this research to create policy relevant and actionable results. These extensions could include:

- Investing in enhanced data collection from programs, such as more detailed information on program participants, services received, and program outcomes.
- Supporting enhanced data collection from agencies that collect employment information. This includes expansions to the UI Base Wage file to include additional measures of employment, such as hours worked and occupation. It may also include identifying new data sources to measure earnings from independent contracting.
- Where possible, considering alternative research strategies such as randomized experiments and quasi-experimental designs to identify credible control groups. These can be either across programs or for components within a program to learn about improvement strategies.
- Extending the topics studied under CAAL-Skills, such as impacts of training on job quality or non-employment outcomes that align with the aims of a program – like further education for youth.
- Specific analyses on the equity of access, participation, and outcomes across gender, race, and other subgroups of interest.

About California Policy Lab

The California Policy Lab builds better lives through data-driven policy. We are an independent, nonpartisan research institute at the University of California with sites at the Berkeley and Los Angeles campuses.

This research publication reflects the views of the authors and not necessarily the views of our funders, our staff, our advisory board, the California Workforce Development Board, or the Regents of the University of California.

Appendix – brief program descriptions

The **WIOA Title I Adults** program provides a combination of career, training, and supportive financial services to workers through American Job Centers of California (AJCCs). The program tends to serve middle-aged workers experiencing unemployment with some previous attachment to the labor force – although this attachment may not be strong. The main Title I Adult group considered in this study is participants who received training services, such as occupational classroom training leading to a certificate or on-the-job training.

The **WIOA Title I Dislocated Workers** program provides a combination of career, training, and supportive financial services to workers through AJCCs. Eligibility requirements include being laid off through no fault of one's own, or expecting to be laid off due to declines in one's occupation or industry. Because of this, the program tends to serve mid-career workers experiencing unemployment after having had stable attachment to the labor market. The main Title I Dislocated Worker group considered in this study is participants who received training services, such as occupational classroom or on-the-job training.

The **WIOA Title I Youth** program provides career, training, and supportive financial services to youth aged 14 to 24 who face barriers to employment. The program focuses on preparing participants for postsecondary education and employment opportunities. The main Title I Youth group considered in this study is participants who received training services, such as classroom training leading to a certificate or on-the-job training.

The **WIOA Title II Adult Education** program provides classroom instruction for individuals with barriers to employment, such as linguistic or cultural barriers. Specific programs include Adult Basic Education (ABE), English as a Second Language (ESL), and Adult Secondary Education (ASE). Because all of these programs provide skills training, all participants are considered trainees.

The **WIOA Title IV Vocational Rehabilitation** program supports workers with disabilities to prepare for and obtain employment at or above the minimum wage. It provides

career, supportive, and training services. Participants' needs vary greatly and the program develops Individualized Plans for Employment to identify employment goals and services that are consistent with those needs. Importantly, the training received can relate directly to removing barriers introduced by a disability, such as training to use assistive technology.

Career and Technical Education refers to a multi-year sequence of courses that integrate core academics with technical and occupational knowledge. California's system of community colleges provides these courses, and all participants are considered trainees since the programs are designed to develop marketable skills. The program is designed for workers who need training for middle-skill careers by preparing them for postsecondary education degrees. For this study, adults aged 25 to 49 who enrolled in at least one course are considered program trainees. This represents a broad definition of participation and includes individuals who may not be interested in completing a sequence of courses.

The **Employment Training Panel** funds employers to train their workers to fill jobs that are challenged by out-of-state competition, primarily in the manufacturing and technology sectors. Funds are focused on incumbent workers – that is, those with an existing employer-employee history – but the program also covers new hires. The main ETP group considered in this study is incumbent workers enrolling in FY 2015-16. Although incumbent workers are known to the ETP program, for the purposes of this study, they are defined as individuals who have at least one year of continuous employment at the time of program entry because incumbent status was not available for the study.

The **State Certified Apprenticeship** program trains apprentices for specified occupations according to the requirements and needs of employers. Apprenticeships are available for careers in construction, manufacturing, and service sectors. Employers who sponsor programs can impose additional requirements, such as aptitude tests and minimum physical capabilities. Because these are directly related to acquiring skills, all apprentices are considered trainees.

The **Trade Adjustment Assistance** (TAA) program offers career services, training services, and financial support to workers experiencing job instability resulting from broad economic factors. Beyond these services, some workers are eligible to receive

the Trade Readjustment Allowance (TRA) subsidy. TRA payments are available beyond exhaustion of Unemployment Insurance (UI) benefits and can be an income supplement while recipients work in jobs with lower incomes than their previous employment. The main TAA group considered in this study is participants who enrolled in training.

Welfare-to-Work (WtW) is the workforce component of California's Temporary Assistance for Needy Families (TANF) program, CalWORKs. It is targeted at qualifying pregnant women and families with dependent children. WtW participants can work, attend training or education programs, participate in activities to remove work barriers, or engage with certain supportive services in order to satisfy work requirements for receipt of cash assistance. Since not all WtW participants receive training and the CAAL-Skills data do not include information on WtW-specific activities, the study authors could not rely on WtW data alone to identify a program group of trainees. Instead, the study authors focus on WtW participants who received workforce services from another agency that reports to CAAL-Skills as the program group of trainees. Overall, 14% of WtW participants enrolled in another program reporting to CAAL-Skills while they were still enrolled in WtW. Note that over half of co-enrollment occurred in the WP program, which itself does not provide training.

Endnotes

[i] Rothstein, J., Santillano, R., von Wachter, T., Kahn, W., Yang, M. (2021). *CAAL-Skills: Study of* Workforce *Training Programs in California*. Final report submitted to the California Workforce Development Board. Los Angeles, CA: California Policy Lab.

[ii] These requirements are established by two pieces of legislation, Assembly Bill (AB) 2148 (K. Mullin, Chapter 385, Statutes of 2014) and AB 1336 (K. Mullin, Chapter 211, Statutes of 2017). Together, the laws ask for two related projects: (1) an annual Workforce Metrics Dashboard Report that provides a descriptive analysis of participants and outcomes, and (2) an impact evaluation to isolate the impacts of workforce programs on labor market outcomes.

[iii] In July 2014, WIOA re-authorized the federal Workforce Investment Act (WIA). All of the WIOA programs included in this study were also administered under WIA before 2016, and throughout the text refers to these programs by WIOA for simplicity.