



Vocational Education

Background

The Pennsylvania Department of Corrections (PA DOC) offers many vocational education (Voc-Education) opportunities. Examples include barbering, carpentry, and auto mechanic programs. These programs aim to improve participants' employment prospects by providing them with job-specific skills during incarceration. Given the significant investment PA DOC has made in prison Voc-Education programs, policymakers wish to know: **Does participation in Voc-Education programs during incarceration improve reentrant labor market outcomes and reduce recidivism?** This study aims to answer these questions, as past research provides limited reliable evidence about the causal effects of prison Voc-Education programming.

Study Design

This study used administrative records for 41,801 men released between January 2010 and December 2021 from an incarceration term following a court commitment. All men in the study sample were age 18-62 at release and had at least one year until their minimum-sentence date at admission.

PA DOC partnered with Dr. Britte van Tiem (University of Maryland) to conduct an instrumental variable (IV) analysis. The analysis harnessed differences in Voc-Education program availability among similarly situated individuals to estimate the effects of Voc-Education participation on post-release labor market outcomes and recidivism. This approach accounts for hard-to-observe differences that may exist between Voc-Education participants and non-participants (ex: motivation, readiness to change, etc.), which otherwise could produce misleading results. Due to this method, the results apply most directly to people whose Voc-Education participation was influenced by program availability, not necessarily all Voc-Education participants.

The study linked PA DOC records to data from the Pennsylvania Department of Labor and Industry (L&I) and matched each Voc-Education program to an industry group that best reflected the course's target industry. Flagger programs were excluded, as were general construction courses, such as NCCER Core, that serve as prerequisites for other programs. Ultimately, the study examined twenty-eight Voc-Education programs targeting specific industries in the labor market.

Results

Over three years post-release, the study estimated that **Voc-Education participation reduced re-arrests by approximately 52%**. Although the estimated reduction is statistically significant, its precise magnitude is uncertain: the 95% percent confidence interval ranges from a 7% to a 96% reduction. **Participation also nearly doubled average earnings in targeted industries over this period** (95% confidence interval: 16% – 169% increase). The study could not determine whether this increase reflected more people working in targeted industries, higher earnings while employed there, or longer periods of employment in those industries.

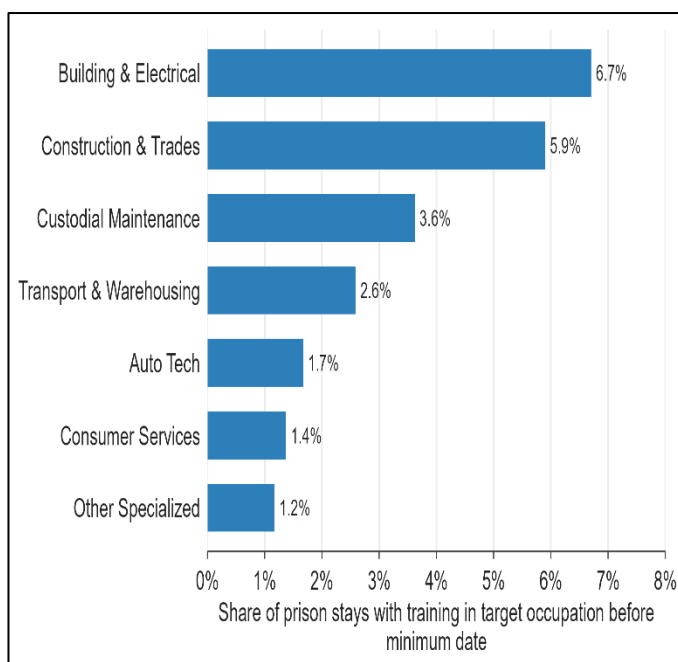
Estimated effects on reincarceration, overall recidivism, and overall employment were too imprecise to determine whether participation increased or decreased these outcomes. Although the point estimates indicated lower overall recidivism and higher employment, the estimates were consistent with effects in either direction.



Vocational Training: *Additional Details*

Voc-Ed Participation

- One in five inmates began at least one vocational training program before their minimum-sentence date.
- Compared with non-participants, Voc-Ed participants were more likely to have a high school degree at admission and served longer sentences on average.
- The study assigned each Voc-Ed program to one of seven program groups that were in turn linked to an industry group. The graph below shows the distribution of Voc-Ed program participation across industry groups.



Voc-Ed & Credentials

- Voc-Ed program participants who pass a test can earn credentials. These are usually industry-recognized certificates that can be provided to employers as proof of training and skill competency.
- Because credential and program-participation data are collected separately, the researchers inferred links between the two datasets. Using this approach, it is estimated that 60% of trainees earned at least one credential related to their Voc-Ed participation.

Voc-Ed & Employment

The below patterns are descriptive rather than causal.

- Across all seven program groups, participants were more likely to ever work in the industry targeted by their program than nonparticipants during the three years after release.
- In five of the seven groups, participants were also more likely to ever work in the targeted industry than participants trained for other industries.
- In three groups (Building & Electrical, Construction & Skilled Trades, Consumer Services), this pattern extended across all three measures examined: whether participants ever worked in the target industry, how much they earned while working there, and how long they worked there.
- Taken together, these patterns are **consistent with participants putting industry-specific training to use after release**. However, they do not establish that Voc-Ed caused these differences or that one program group was more effective than another, for example because participants may choose programs that match their prior experience or existing employment interests.

