California's In-Prison Vocational Education

An Analysis of Program Access and Alignment to Labor Market Demands

LEGISLATIVE DATA CENTER

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Executive Summary

The California state prison system is extremely costly: it costs an average of $47,000 per year to incarcerate a single individual in 2008.[1,2] Despite this, the state prison system maintains a revolving door of activity. The three-year return-to-prison rate for inmates is 57.8%, and of those who are rearrested, 18% return to prison for a new crime and 40%for a technical violation.[3] Additionally, 73.5% of felons who recidivate in California return to prison within a year of release.[4] Yet there is evidence to suggest that gainful employment post-release reduces the likelihood of recidivism.

According to a meta-analysis of correctional education programs (excluding those in California) conducted by RAND in 2013, in-prison vocational training program participation did not yield a consistent relationship with recidivism but was associated with increased odds of employment. Specifically, the odds of obtaining employment post-release among inmates who participated in correctional education (either academic or vocational programs) were 13% higher than the odds for those who had not participated.[5]

The California Department of Corrections and Rehabilitation (CDCR) spends roughly $202 million a year on in-prison educational programming aimed at increasing the employment opportunities of ex-offenders upon release.[6] Thirty-two of CDCR's 33 prisons maintain fully accredited schools that offer vocational training in addition to academic classes, courses in English as a Second Language, and library activities.[7] However, there is little evidence on the effectiveness of these vocational education programs.

This project is primarily concerned with analyzing whether California's in-prison vocational and career technical education programs support parolees in finding work in relevant professions or trades. This analysis seeks to answer the following questions:

- To what extent do individuals in CDCR institutions have access to career and technical education?
- Is there an active job market for the skills being developed where inmates will likely be released?
- To what extent do vocational programs lead to employment in occupations with a livable wage?
- To what extent do vocational programs align with the workforce needs of high-demand sectors of the state and regional economies?
- Which vocational training programs are most effective at improving the employment opportunities of ex-offenders?

[1] Accessed January 15, 2014. http://www.lao.ca.gov/PolicyAreas/CJ/6_cj_inmatecost.

[2] http://www.vera.org/sites/default/files/resources/downloads/the-price-of-prisons-40-fact-sheets-updated-072012.pdf
[3] http://www.pewstates.org/uploadedFiles/PCS_Assets/2011/Pew_State_of_Recidivism.pdf
[4] http://www.cdcr.ca.gov/Adult_Research_Branch/Research_Documents/ARB_FY_0607_Recidivism_Report_(11-23-11).pdf
[5] http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR266/RAND_RR266.pdf
[6] http://www.lao.ca.gov/2008/crim/inmate_education/inmate_education_021208.aspx
[7] http://www.cdcr.ca.gov/OCE/

Key Findings

- California licensing requirements do not present legal barriers to the employment of ex-offenders in occupations for which they receive vocational training

- There is inequitable access to vocational programs based on gender and security level assignment

- CDCR institutions are unable to accommodate all inmates interested in enrolling on vocational training within two years of release (designated CDCR reentry period)

- Many vocational programs take 12 months or longer to complete. Long wait lists combined with the short reentry period impend the ability of inmates to complete vocational training programs before release

Recommendations

- CDCR should consider expanding the two-year reentry period to enable inmates to complete career technical education and obtain certifications for more than one occupation

- There is evidence to suggest that inmates elect to work instead of pursue career and technical training. CDCR should consider offering incentives for vocational training enrollment, which improve employability post-release

- CDCR should conduct a rigorous evaluation of the impact of vocational education on employment and earnings

Key Terms

- California Department of Corrections and Rehabilitation (CDCR) – CDCR operates all state adult prisons and juvenile facilities, oversees a variety of community correctional facilities, and supervises all adult and juvenile on parole.

- Vocational Training/Career Technical Education (CTE) – Training that emphasizes skills and knowledge required for a particular job function (such as typing or data entry) or a trade (such as carpentry or welding).

- Recidivism – A relapse into criminal behavior measured by criminal acts that resulted in the re-arrest, reconviction and return to prison with a new sentence following a prisoner's release.

Introduction

Policy Context

The California state prison system is extremely costly: it cost an average of $47,000 per year to incarcerate a single individual in 2008.[8,9] Despite this, the state prison system maintains a revolving door of activity. The three-year return-to-prison rate for inmates is 57.8%, and of those who are rearrested, 18% return to prison for a new crime and 40% for a technical violation.[10] Additionally, 73.5% of felons who recidivate in California return to prison within a year of release.[11]

This veritable public crisis invites analysis of possible policy responses. One line of inquiry arises from research that suggests that employment significantly reduces recidivism and criminal behavior.[12] [13] [14] Employment can make a strong contribution to recidivism-reduction efforts because it refocuses individuals' time and efforts on prosocial activities, making them less likely to engage in criminal activities. Having a job also enables individuals to contribute income to their families, which can generate more personal support, stronger positive relationships, enhanced self-esteem, and improved mental health.[15]

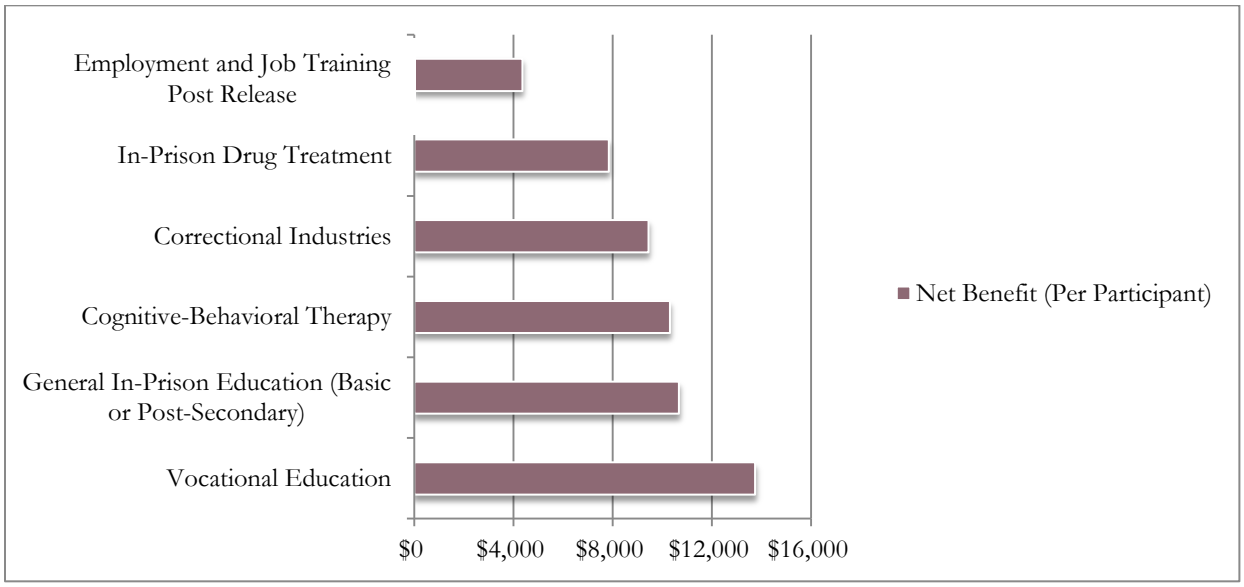
While the California unemployment rate is 8.7%, ex-inmates are unemployed at rates of 50% or higher a year after release.[16] Currently, there are approximately 130,000 ex-offenders on parole.[17] Realignment, the initiative to improve the California criminal justice system by reducing the number of prisoners in state correctional facilitates and giving counties greater discretion with how to handle offenders, is expected to increase the number of ex-inmates looking to enter the labor market. The growing ex-inmate population, high rates of unemployment and recidivism among that population and the high financial cost of re-incarceration creates the need for employment support from the state.

Vocational or career technical education presents the greatest return on investment for states. As Figure 1 shows, the net financial benefit of vocational training is roughly $13,700, exceeding returns for general in-prison education, cognitive behavioral theory, in-prison employment, drug treatment, and post-release job training. Specifically, vocational training presents a $8,114 benefit to crime victims and a $6,806 benefit to taxpayers, costing $1,182 per inmate.

[8] http://www.lao.ca.gov/laoapp/laomenus/sections/crim_justice/6_cj_inmatecost.aspx?catid=3
[9]http://www.vera.org/sites/default/files/resources/downloads/the-price-of-prisons-40-fact-sheets-updated-072012.pdf
[10] http://www.pewstates.org/uploadedFiles/PCS_Assets/2011/Pew_State_of_Recidivism.pdf
[11]http://www.cdcr.ca.gov/Adult_Research_Branch/Research_Documents/ARB_FY_0607_Recidivism_Report_(11-23-11).pdf
[12] Jeffrey D. Morenoff, David J. Harding. "Neighborhoods, Recidivism, and Employment Among Returning Prisoners." *National Criminal Justice Reference Service,* November 2011. https://www.ncjrs.gov/pdffiles1/nij/grants/236436.pdf
[13] Matthew Makarios, Benjamin Steiner and Lawrence F. Travis III. "Examining the Predictors of Recidivism Among Men and Women Released From Prison in Ohio." *Criminal Justice and Behavior* 2010. http://cjb.sagepub.com/content/37/12/1377.full.pdf+html
[14] "Education, Employment, and Recidivism: A Review of the Literature."
http://www.criminologycenter.fsu.edu/jjeep/pdf/annual2006/chapter5ar06.pdf
[15] https://www.bja.gov/publications/csg-reentry-and-employment.pdf
[16] Steven Greenhouse. "States Help Ex-Inmates Find Jobs." *New York Times*, January 11, 2011.
http://www.nytimes.com/2011/01/25/business/25offender.html?pagewanted=all&_r=0

[17] 2013 Cal Facts. Legislative Analyst Office. http://www.lao.ca.gov/reports/2013/calfacts/calfacts_010213.aspx#Criminal_Justice

Figure 1: Net Benefit of Correctional Programs



Source: Washington State Institute for Public Policy[18]

Furthermore, given that the average offender in California prisons reads at an eighth-grade level. Career technical education presents an opportunity for inmates to improve academic and job that will increase their employment marketability upon release.[19]

Literature Review

Research Findings on Adult Corrections Programs

Several evaluative studies suggest that vocational education reduces recidivism rates. Lattimore (1990) examined a vocational training and education program for 18 to 22 year old male property offenders. Using a well-implemented, true experimental design with random assignment to treatment, the authors investigated whether participation influenced rates of offender recidivism, measured as the rate of re-arrest two years after release. Offenders receiving services exhibited marginally significantly (p=.10) lower rates of rearrest (36%) than did offenders receiving fewer/no services (46%). Similarly, Saylor (1996) performed a quasi-experimental evaluation comparing the recidivism of offenders participating in vocational/apprentice training to a set of statistically-matched offenders who did not participate in correctional industries or work training. The long-term follow-up, which considered offenders' recommitment to a federal facility for up to 12 years, demonstrated that vocational training participants were 33% less likely to be recommitted to the federal prison system during the observation period than comparison group members. This difference was statistically significant and suggested that vocational training participation has a long-

[18] http://www.mtfc.com/2006%20Aos%20Cost-Benefit%20Report.pdf
[19] "Department of Corrections and Rehabilitation." Accessed February 11, 2014. http://www.cdcr.ca.gov/OCE/.

term impact on post-release recommitment rates. [20] Furthermore, an evaluation of a work release program in Washington, which enabled certain offenders under the jurisdiction of the Washington State Department of Corrections (DOC) to serve up to six months of their prison sentence in a residential facility while employed in the community, found that participation (1) lowers total recidivism, by 2.8%; (2) has a marginal effect on felony recidivism; by 1.8%; and (3) has no effect on violent felony recidivism. Based upon the felony recidivism findings, participation in work release generates $3.82 of benefits per dollar of cost. The benefits (about $2,300 per work release participant) stem from the future benefits to taxpayers and crime victims from the reduced recidivism.[21] Another study of all inmates released from Ohio State prisons in 1992 examined the recidivism rates of those taking part or completing a vocational education program while in prison and a control group without education program participation (Ohio Department of Rehabilitation and Correction, 1995). Comparisons of education program participants and nonparticipants revealed that during the two-year follow-up period, 29% of vocational program achievers were reincarcerated, compared to 31% of the nonparticipant group. However, the absence of statistical controls prevents a solid determination of program effects on recidivism. Additionally, the Ohio study does not take into account that inmates who elect to participate in vocational education might differ on a set of observable and/or unobservable characteristics that might influence employability post-release.

There are also a handful of studies that find the impact of vocational training to be inconclusive. An evaluation of recidivism rates for a cohort of Texas inmates who were both admitted and released from prison between March 1991 and December 1992 examined whether Texas prison education participants had lower rates of reincarceration than nonparticipants (Adams et al., 1994; Marquant et al., 1994). Participants in vocational programs had a slightly lower rate of reincarceration than the comparison group (21 as compared to 24%), but the difference was not significant. Additionally, Downes (1989) evaluated a vocational education program in New Mexico comparing those who successfully completed the program with a control group matched on a number of characteristics. The treatment group had a recidivism rate of 24%while the control group had a lower rate at 20% but the results were not significant. An evaluation of Wisconsin' Department of Corrections Specialized Training and Employment Project (STEP), which is designed to assist inmates in obtaining and retaining employment upon release to the community, found no significant difference in recidivism rates after a nine-month follow up period (Van Stelle, 1995). The study showed the treatment group with a recidivism rate of 24% while the (mostly) randomly assigned control had recidivism rates of 19%. The results were only for the graduates of the program, therefore the outcomes of dropout were not reported.

In 2013, RAND conducted a meta-analysis of correctional education programs in an effort to aggregate the findings of several evaluative studies. RAND's meta-analysis found that vocational training program participation did not yield a consistent relationship with recidivism but was

[20] http://www.wsipp.wa.gov/ReportFile/1309/Wsipp_Research-Findings-on-Adult-Corrections-Programs-A-Review_Full-Report.pdf
[21] http://www.wsipp.wa.gov/ReportFile/998/Wsipp_Does-Participation-in-Washingtons-Work-Release-Facilities-Reduce-Recidivism_Full-Report.pdf

associated with increased odds of employment.[22] The odds of obtaining employment post-release among inmates who participated in correctional education (either academic or vocational 10 programs) were 13% higher than the odds for those who had not participated. Individuals who participated in vocational training programs, as compared to academic correctional education programs, had odds of obtaining post release employment that were 28% higher than individuals who had not participated, although there is no statistical significant difference given the small sample of vocational programs. Based on another examination of 4 evidence-based studies, vocational education in prison is associated with a 9% reduction in crime outcomes.[23]

Need for Evaluation

Thirty-two of CDCR's 33 prisons maintain fully accredited schools that offer vocational training.[24] Despite the numerous studies evaluating the impact of in-prison vocational training on recidivism rates and employment outcomes, none are specific to California's population. It is important to understand what the State is doing to prepare these individuals to be productive members of society and how effective the State's efforts are. An evaluation of vocational program effectiveness at increasing employment and decreasing recidivism could be used to determine how to best allocate CDCR educational funds.

AB 1019 legislation, passed in October 2013, requires long-term and short-term goals for career technical education to be set by the Superintendent of Correctional Education. Additionally, the bill established factors for consideration when establishing a career technical education program, including the demand for the skills being trained and the availability of employment in those fields. An evaluation of vocational training could help inform the development of correctional education goals. [25]

Structure of the Report

The remainder of this report will detail the landscape of vocational education in California prisons, describe the methodology and data used to evaluate program access and alignment to regional economies, and explain the results of the equity and efficiency analysis. The final portion of this report discusses the implications of the findings and outlines a number of recommendations.

Vocational Training in California Prisons

Legislative Support for Vocational Training

Several state statutes outline requirements from CDCR educational programs. California Penal Code (2053), also known as "The Prisoner Literacy Act," was enacted to raise the percentage of prisoners who are functionally literate, and thus recidivism rate. California Penal Code (2053.5)

[22] http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR266/RAND_RR266.pdf
[23] http://www.wsipp.wa.gov/ReportFile/952/Wsipp_Evidence-Based-Public-Policy-Options-to-Reduce-Future-Prison-Construction-Criminal-Justice-Costs-and-Crime-Rates_Full-Report.pdf
[24] http://www.cdcr.ca.gov/OCE/
[25] http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1019

states that a career technical education program, consistent with the goals and priorities of the CDCR, shall consider:[26]

> (a) Whether a program aligns with the workforce needs of high-demand sectors of the state and regional economies.
> (b) Whether there is an active job market for the skills being developed where the inmate will likely be released.
> (c) Whether the program increases the number of inmates who obtain a marketable and industry or apprenticeship board-recognized certification, credential, or degree.
> (d) Whether there are formal or informal networks in the field that support finding employment upon release from prison.
> (e) Whether the program will lead to employment in occupations with a livable wage.

In addition to law requiring alignment between vocational curriculum and programming and relevant employment opportunities, Assembly Bill (AB) 900 requires CDCR to determine and implement a system of incentives to increase inmate participation in, and completion of, academic and vocational education, consistent with inmate educational needs. Additionally, this bill required the department to develop an Inmate Treatment and Prison-to-Employment Plan that would evaluate and recommend changes to the Governor and the Legislature regarding current inmate education, treatment, and rehabilitation programs to determine whether the programs provide sufficient skills to inmates that likely result in their successful employment in the community, and reduce their chances of returning to prison after release to parole.[27]

Programmatic Details

Goals and Theory of Action

The California Department of Correction and Rehabilitation offers rehabilitative and educational programs for the purpose of supporting the successful reintegrate of inmates into society. CDCR hypothesizes that if it properly accesses offender risk levels, identifies criminogenic needs, develops a comprehensive support plan, delivers targeting programing, measures treatment progress, and supports prisoner reentry through individualized plans, they will adequately prepare inmates for reentry and reduce the likelihood criminal recidivism (*see Appendix 2 for Logic Model*).

CDCR's goal is to provide educational programming to 70% of *qualified* inmates. As of June 2012, 60.8% of state prison inmates had a medium to high need for academic or career technical programs.[28] While 95% of California state prison inmates will eventually be released to society, with roughly 120,000 individuals released each year, only 14,000 inmates participate in vocational training in a given year.[29] [30]

[26] http://www.leginfo.ca.gov/cgi-bin/displaycode?section=pen&group=02001-03000&file=2051-2065
[27] http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0851-0900/ab_900_bill_20070503_chaptered.html
[28] http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_1001-1050/ab_1019_bill_20130826_amended_sen_v96.html
[29] http://www.cdcr.ca.gov/OCE/
[30] http://www.lao.ca.gov/2008/crim/inmate_education/inmate_education_021208.pdf

State Spending on CTE

The State of California spends roughly $175 million a year on adult education, $40 million of which is devoted to vocational education. This accounts for approximately 2% of the annual corrections budget.

Program Types and Accreditation

The Office of Correctional Education (OCE) oversees all vocational education programs at 33 institutions. The OCE develops a standardized curriculum for all programs, which are accredited by the Western Association of Schools and Colleges (WASC), an association that provides accreditation to public and private primary, secondary and post-secondary schools. Additionally, the California Employment Development Department (EDD vets each vocational program for viability and alignment with established industry standards. [31]

Table 1 provides a summary of all CTE programs currently offered in CDCR institutions and the capacity of each program. In total, the 258 vocational programs can serve up to 7,600 inmates.

Table 1: Summary Statewide of Vocational Training Programs

Career Technical Education	Number of Programs	Capacity
Auto Mechanics	17	459
Auto Repair	14	378
Building Maintenance	23	621
Carpentry	15	405
Computer Literacy	24	1282
Cosmetology	4	108
Electric Work	17	459
Electronics	30	810
HVAC	14	378
Machine Shop	4	108
Masonry	14	378
Office Technologies	42	1134
Plumbing	9	243
Sheet Metal	2	54
Small Engine Repair	9	243

[31] Lee, Yong. Interview with CDCR Office of Program Accountability & Support, March 6, 2014.

Welding	20	540
TOTALS	258	7600

Source: California Department of Corrections and Rehabilitation

CTE Certification

Each vocational program is comprised of several components or benchmarks. A "component achievement" is issued after a student has successfully completed all requirements of a CTE program component including all the CDCR curriculum competencies coursework, performance, and manipulative and written testing requirements. A "program completion" is issued after a student has successfully completed all the component achievement requirements including any necessary coursework, performance, manipulative and written testing. Completing all CTE program components does not automatically guarantee an industry certification, which is issued by 11 different entities (*see Appendix 2).* In order to obtain an industry certification, students must meet all the industry requirements, pass industry skills, performance and knowledge tests, and submit the necessary forms to the certifying industry examiner or agency.

Eligibility Requirements

Upon admission to a CDCR institution, all inmates complete the Test for Adult Basic Education (TABE). Inmates interested in participating in adult education must obtain a reading score of 9.0 or higher on the TABE, which is equivalent to a 9th grade reading level. Additionally, they must hold a high school diploma or General Education Degree (GED). Those who do not are required to complete a GED program before enrolling in vocational training.

CDCR also uses the Correctional Offender Management and Profiling Alternative Sanctions, or COMPAS, to determine program eligibility. The COMPAS is a computerized assessment designed to assess offenders needs and risk of recidivism to inform decisions regarding the placement, supervision, and case management of offenders in both correctional and community settings.

Lastly, inmates must be within 2 years of release from a CDCR institution to be eligible for vocational education. This requirement is meant to ensure that CTE vacancies are reserved for inmates most in need to transitional support.

Vocational Training Assignment

Participation in education and vocational training is voluntary, although highly recommended for qualified inmates.[32] Assignment to programming is determined on a first-come, first-serve basis, and thus program enrollment is typically determined by what is available at a particular institution. The demand for CTE is greater than the budgeted capacity, therefore priority is given to inmates who are approaching release.

[32] Lee, Yong. Interview with CDCR Office of Program Accountability & Support, March 6, 2014.

Most programs are 12 months long and require at least 3 hours of work participation per day and no less than 15 hours of work participation per week.[33] Some programs, such as the auto, heating and refrigeration, plumbing and welding programs, take upwards of 1,000 hours to complete and thus require more instructional time.

Table 2: Length of CTE Programs

CTE Program	Approximate Hours to Complete	Number of Components for Program Completion	Number of Qualifying Exams for Certification	Certifying Agency
Auto Body	1100 hrs.	2	3	ASE
Auto Mechanics	1300 hrs.	9	11	ASE and EPA
Building Maintenance	780 hrs.	3	3	NCCER
Carpentry	980 hrs.	3	3	NCCER
Cosmetology	1765 hrs.	4	1	CBBC
Electrical Works	780 hrs.	3	5	NCCER
Electronics	300 hrs.	5	5	ETA and C-TECH
HVAC (Heating and Refrigeration)	1170 hrs.	4	9	NCCER and EPA
Machine Shop	1000 hrs.	6	20	NIMS
Masonry	970 hrs.	3	4	NCCER
Nail Care (Manicuring)	435 hrs.	1	1	CBBC
OSRT (Office Technology)	760.5 hrs.	3	6	Certiport and Microsoft
Plumbing	1090 hrs.	4	5	NCCER
Sheet Metal	880 hrs.	3	4	NCCER
Small Engine Repair	760 hrs.	3	7	EETC
Welding	1155 hrs.	3	34	NCCER, ASME and AWS

[33] http://www.cdcr.ca.gov/Regulations/Adult_Operations/docs/Title15-2013.pdf

Methodology

Research Questions

The primary objective of this project is to analyze how effective CDCR vocational training is at improving the employment outcomes. To that end, this analysis is divided into two parts: (1) studying the efficiency of internal operations, including an examination of the content and relevance of the courses and the adequacy and utilization of CTE space and (2) dissecting California's workforce and employment trends. This analysis seeks to answer the following questions:

- To what extent to individuals in CDCR institutions have access to career and technical education?
- Is there an active job market for the skills being developed where inmates will likely be released?
- To what extent do vocational programs lead to employment in occupations with a livable wage?
- To what extent do vocational programs align with the workforce needs of high-demand sectors of the state and regional economies?
- Which vocational training programs are most effective at improving the employment opportunities of ex-offenders?

Data

The analysis contained in this report is based on three main sources of quantitative data: (1) 2013 CDCR COMPSTAT (short for COMPuter STATistics or COMParative STATistics) data on adult and vocational education enrollment, program waitlists, and in-prison employment; (2) Program completion and industry certification data by institution from the CDCR Office of Research, spanning 2011 to 2013; and (3) Job growth projections, unemployment and earnings data from the California Employment Development Department.

Proposed Evaluative Design

In order to adequately measure the impact of CTE participation on employment outcomes, it is necessary to design a study that compares inmates who enrolled in vocational education to similar inmates who did not. It is insufficient to simply report the employment outcomes of CTE graduates because the actual impact of correctional education might be overstated due to selection bias. For example, it is reasonable to assume that inmates who voluntarily seek vocational education and successfully reenter society may have succeeded regardless of whether these programs existed (due to work ethic, more advanced academic or work skills, etc.).

In order to adequately evaluate whether correctional education increases the probability of finding a full-time job and employment aligned to CTE field, I propose an ex-post evaluation using quasi-experimental methods. The proposed ex-post evaluation will measure the outcomes of CTE interventions on intended beneficiaries. While an experimental design that randomly assigns inmates to vocational training would be the most robust form of evaluation for the CDCR's CTE programs, there are limitations to its feasibility. Notably, it is not practical to randomly assign individuals to participate in a vocational training, since it is a self-selecting process to an extent.

To isolate the effect of CTE, an evaluation must construct analogous treatment and comparison groups on a set of observable characteristics. The sample for the treatment group should consist of all individuals who enrolled in CTE, regardless of program completion or certification (since excluding program dropouts might bias the results of the evaluation upward). The control group should include individuals who applied for vocational training but were not granted access due to limited space. Additionally, the evaluation should rely on propensity score matching (PSM) techniques to verify similarities between the treatment and comparison groups.

It is important to control for observable characteristics that past research demonstrates can affect employment outcome. To minimize the impact of selection bias, it is important to analyze data using logistical regression models, which allow for use of control variables (observable characteristics) that past research demonstrates can affect employment outcome. Control should include factors such as highest level of education, type of criminal conviction, time served and occupation before incarceration. Despite best efforts to control for all of the variables that might employment, inevitably, unobservable factors such as individual motivation and predisposition will be unaccounted for. Nonetheless, the proposed quasi-experimental design will provide a reliable estimate the CDCR's CTE program effects on employment and earnings.

General Limitations and Assumptions

Lack of Employment Data

Given the data collection and reporting practices of CDCR, it is impossible to state the extent to which in-prison vocational training impacts employment wages, and recidivism. CDCR monitors CTE enrollment and program completion for each inmate based on their unique identification number. ID numbers also make it possible to track whether an individual recidivates after release from a CDCR institution. Unfortunately, CDCR does not collect employment data for former inmates once they are release. While county parole offices have access to a former inmate's employment status, field of employment, wage, etc. that information is not shared with CDCR. A coordinated plan for data collection and use would be necessary to conduct a rigorous evaluation.

Institution-Level v. Security-Level Analysis

Analysis presented in this report is limited to the institution type. There are 4 main institution types: Reception Centers and Camps, High Security Prisons, General Population Male Prisons, and Female Prisons. CDCR operates 10 Reception Centers, which house and process all incoming male inmates. Reception Centers compile and evaluate inmates' criminal records, life histories, medical, dental, physiological and mental health histories, and social histories in order to determine their custody scores, identify any specific placement needs, and assign them to one of the 34 state prisons.[34] Additionally, CDCR operates 9 High Security prisons, which house the most violent and dangerous male offenders. There are also 10 General Population Male prisons, which

[34] The intake process at Reception Centers can take up to 120 days.

provide housing for minimum to medium custody male inmates. Female inmates are housed in 3 separate facilities.

Within each of the 4 institution types are different security classification levels, ranging from Level I to Level IV Higher security levels are reserved for inmates in need of more supervision. Additionally, CDCR has Security Housing Units (SHUs) for inmates requiring intense supervision and Condemned (COND) housing, which hold inmates with death sentences. More than half of CDCR institutions include more than one security level. Yet the CDCR data provided for this project was reported at the institution-level, making it impossible to isolate differential trends exist based on security level. Nonetheless, disaggregating data by Reception Center, High Security, General Population (Male) and Female institutions is a good proxy for the perceived public safety risk presented by inmates.

Data Analysis

Summary of Main Findings

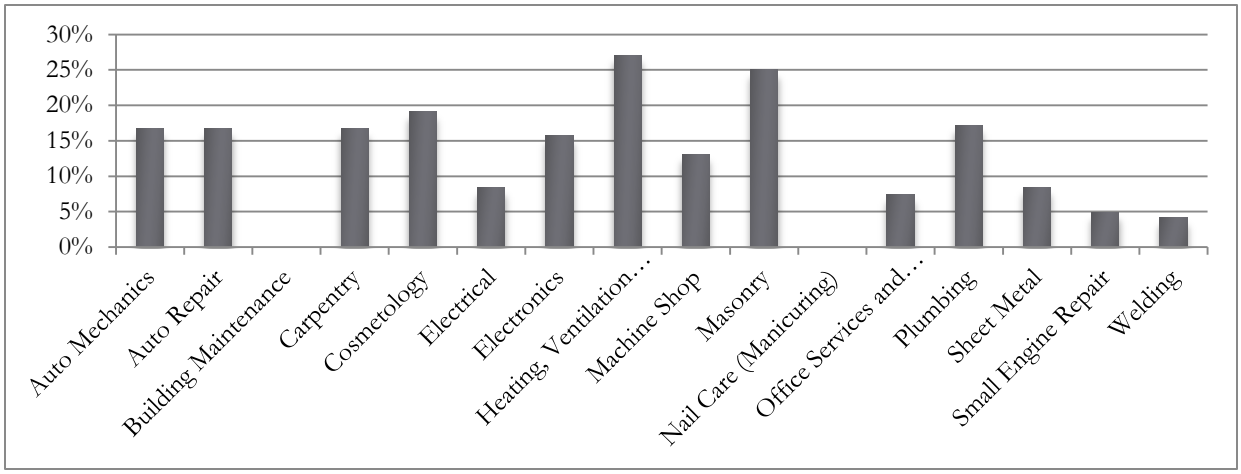
Finding 1: CTE Programs Align with Industry Standards and Statewide Occupational Employment Projections

All 16 of CDCR's vocational programs are aligned to industry certification examinations (*see Appendix 4*). Presumably, if an inmate met the basic qualification requirements for vocational enrollment and were to complete the entire curricular sequence for a particular CTE program, he or she would be adequately prepared to take and pass a certification examination.

Additionally, according to the California Employment Development Department, 9 of the 16 fields in which inmates can earn an industry certification are expected to add more than 2,000 jobs by 2020.[35] Figure 2 shows the percent change in employment for each field for which inmates can receive vocational training. In the next 8 years, the number of jobs in the auto repair, heating and air conditioning, plumbing, masonry, cosmetology fields is expected to increase by 15%. The employment projections below are based on industry and occupational employment trends at the State and local level as well as current economic developments that affect employment within any given industry. Projections take into account employment changes that result from factors such as industry growth and technological change. Of course, the projects in Figure ___ are based on the assumption that (1) present economic growth trends will continue in California, (2) long-term employment patters will continue in most industries, and (3) technological and scientific trends will continue as well.

[35] Industries include auto mechanics, building maintenance, carpentry, electrical works, HVAC, machine shop, manicuring, office services and technology, and plumbing.

Figure 2: Projected Percent Change in Employment by Profession

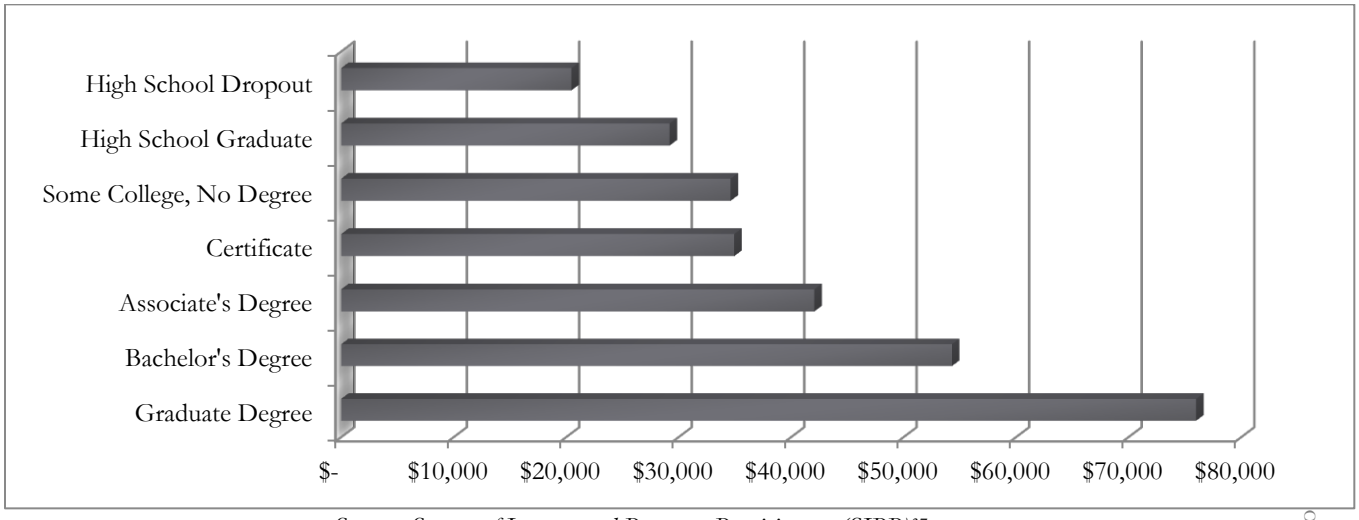


Source: *California Employment Development Department, Projections of Employment by Occupation*[36]

Finding 2: Possessing a CTE Certificate Improves Earnings and Hourly Wage Potential

Studies show that on average, certificate holders earn 20% more than high school graduates without any postsecondary education. However, the economic returns vary according to the certificate's holder's field of study and whether the certificate holder works in field. The Center on Education and the Workforce at Georgetown found that 44% of certificate holders work in field. Certificate holders who work in field earn 37% more than those who work out of field. On average, a certificate holder who works in field earns nearly as much as the median Associate's degree holder. On the other hand, the median certificate holder who works out of field earns only 1% more than a high school-educated worker.

Figure 3: Median Earnings of US Workforce by Education

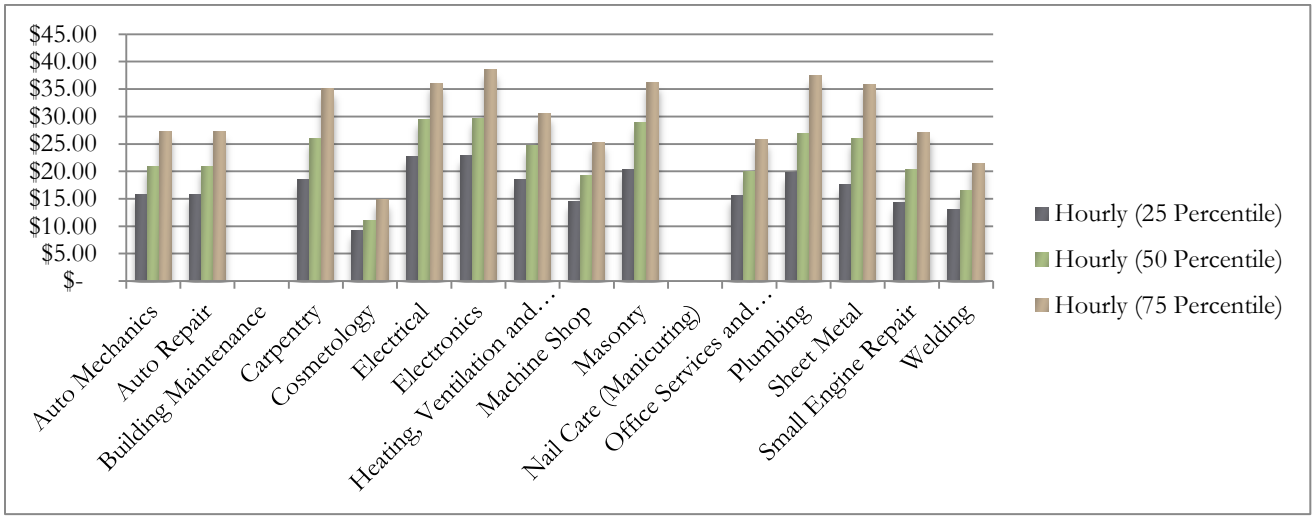


Source: Survey of Income and Program Participants (SIPP)[37]

[36] http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=1011

Figure 4: indicates that the median hourly wage for CDCR's CTE professions is significantly higher than the minimum wage in California, which is set at $8 dollars an hour. Wages reported in Figure 4 are based on payroll data from all private employers and government entities covered under the Unemployment Insurance, Disability Insurance, and Personal Income Tax programs.

Figure 4: Estimated Hourly Wage by Profession

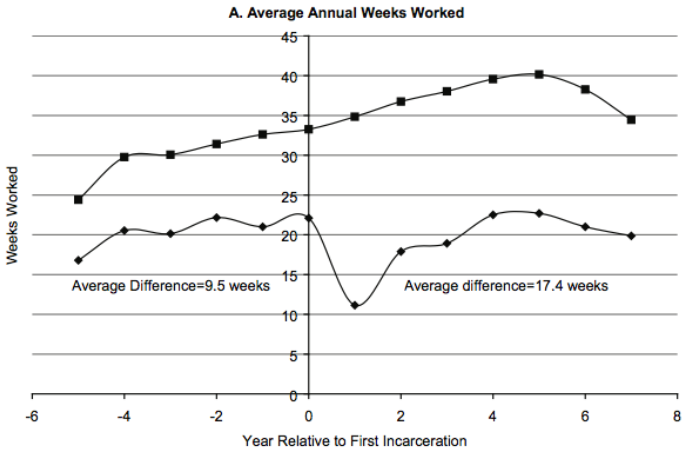


It is important to note the EDD wage estimates captured in Figure 4 might not necessarily translate to a livable wage for the population of interest. A point of significance is that CTE prepares inmate for jobs that pay an hourly wage and provide no guarantee of full-time employment. Despite the potential to earn more than the average minimum wage worker, doing so is contingent on finding adequate work. Furthermore, in addition to paying for basic necessities such as food and housing, ex-inmates might also have to allocate a portion of earnings to retribution payments and back child support that accumulated while they were incarcerated, thus reducing the amount of take-home pay.

Additionally, while an inmate's felony status does not preclude him or her from obtaining a certification in any of the 16 aforementioned vocational fields in the State of California, ex-offenders might have a harder time finding relevant jobs due to low skills, limited work experience and/or employer resistance. It is misleading to state that incarceration alone reduces employment prospects for ex-offenders. As Figure 5 indicates, state prison inmates traditionally have low levels of formal employment (and thus lower wages) before imprisonment as compared to similar individuals who were never incarcerated, which likely has an impact on post-release employment. Administrative employment records and surveys estimate that between one-third and two-thirds of inmates were employed prior to incarceration.[38]

[37] Anthony P. Carnevale, Stephen J. Rose, Andrew R. Hanson. Certificates: Gateway to Gainful Employment and College Degrees. Georgetown University Center on Education and the Workforce. June 2012.
[38] Steve Raphael. The employment prospects of ex-offenders.

Figure 5: Average Annual Weeks Worked



In general, individuals who spend time in prison are different along observable (and most likely unobservable) dimensions from those who do not, making it difficult to estimate their employment and earnings from statewide figures. As of October 2013, the unemployment rate in CA was 8.7% yet the unemployment rate for the formerly incarcerated tends to be significantly higher.[39] Without data on the employment outcomes of former inmates, it is impossible to estimate the job outlooks for ex-offenders in these industries.

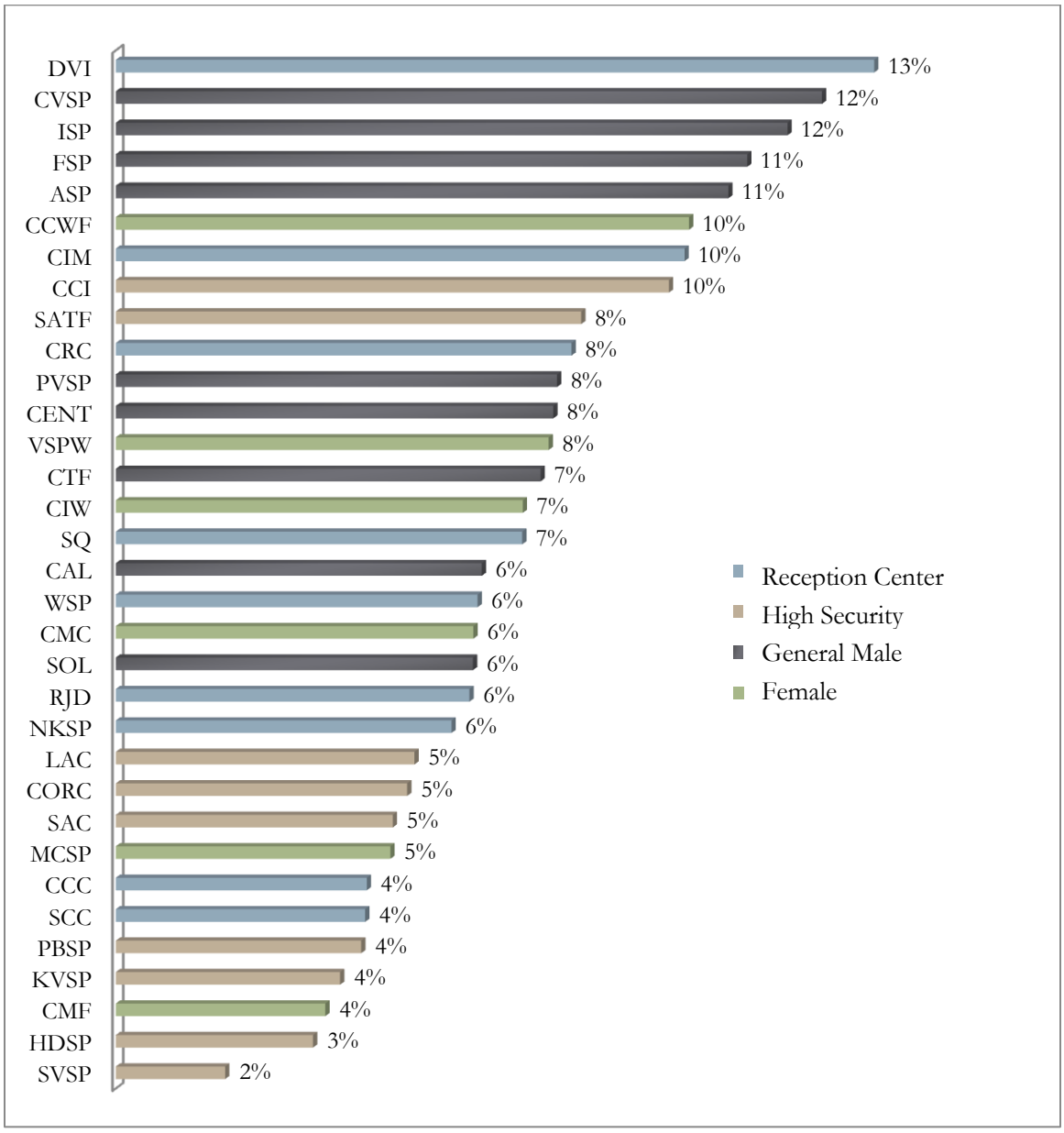
Finding 3: Barriers to Vocational Training Access

In 2006, only 6.5% of individuals released from prison had taken part in vocational programs within one year of reentry.[40] As previously mentioned, CDCR aims to enroll 70% of qualified inmates in educational programing, however, limited program capacity makes it difficult to serve every inmate interested in pursuing CTE. Figure 6 shows the percentage of inmates each institution can accommodate in CTE. High Security prisons appear to have the fewest number of spots compared to population size. The differential access to vocational training based on institution type suggests that CDCR should reevaluate vocational education funding allocations based on institution size.

[39] https://www.google.com/publicdata/explore?ds=z1ebjpgk2654c1_&met_y=unemployment_rate&hl=en&dl=en&idim=state:ST060000:ST480000&fdim_y=seasonality:S

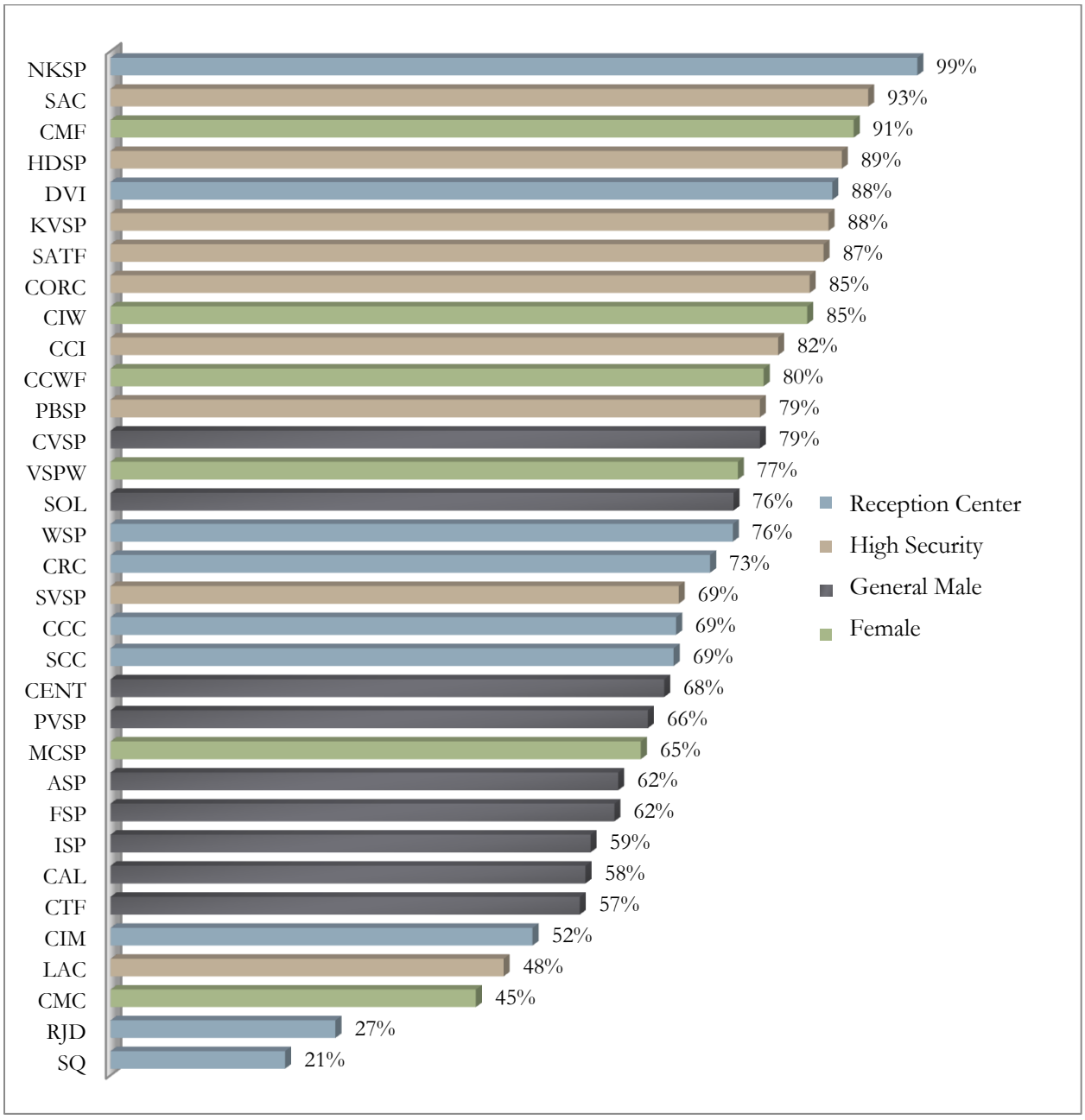
[40] http://sentencing.nj.gov/downloads/pdf/articles/2007/July2007/document03.pdf

Figure 6: Percentage of Inmate Population with Access to Vocational Programming



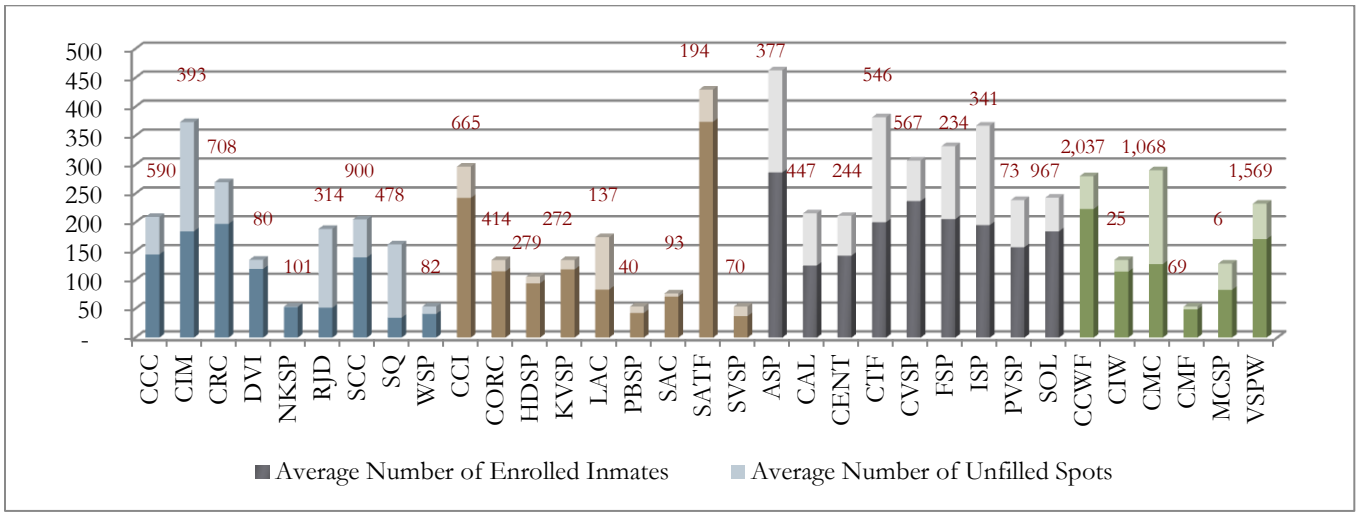
Interestingly, roughly half of the CDCR institutions are operating CTE programs at less than 75% capacity. Figure 7 indicates the wide variation in CTE enrollment, ranging from 21% to 99%. The figure reveals that high security institutions tend to have higher rates of vocational program enrollment, while general population male institutions and reception centers tend to have lower enrollment.

Figure 7: Percent of Vocational Program Enrollment



Low CTE enrollment rates at reception centers and general population male institutions are particularly concerning considering the number of people on vocational education waitlists. In Figure 8, each bar represents the number of CTE spots each institution is budgeted for. The darker portion of the bar indicated what proportion of CTE spots are filled. The number above each bar is the average length of the waitlist at each institution. This graph raises questions as to why inmates are waitlisted for CTE while there is program availability. This suggests that CDCR should revisit how vocational education assignments are determine to ensure that as many inmates as possible have access to CTE.

Figure 8: Average Number of Inmates on Waitlist by Month

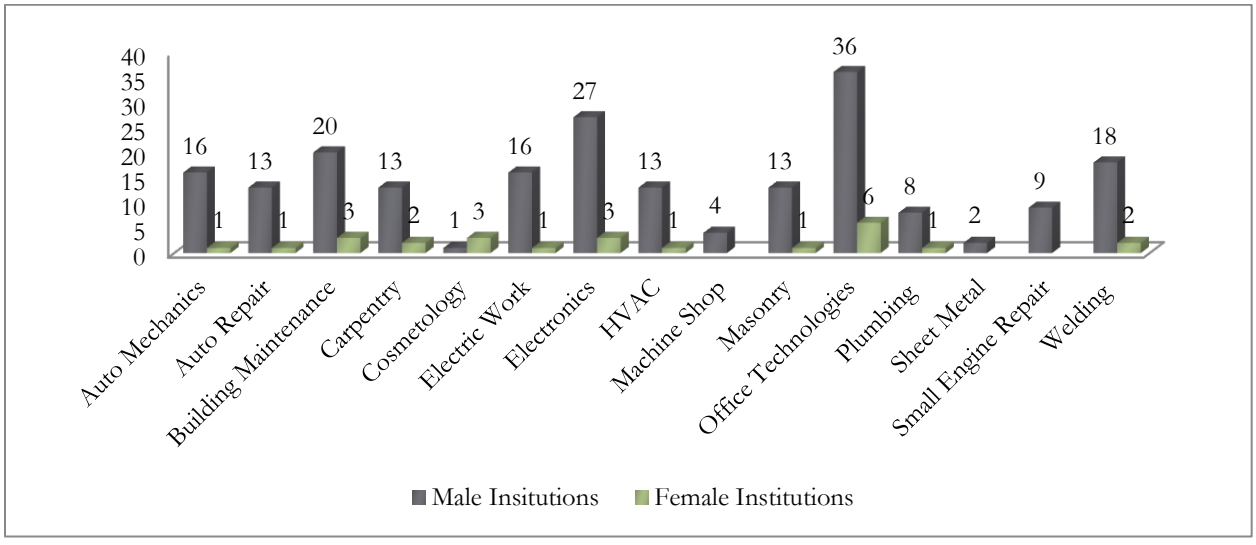


Finding 4: Differential Access to Vocational Programs Based on Gender

Disaggregating the ratio of inmates to the number of CTE spots in an institution by gender reveals that 34.6% of female inmates have access to vocational programs while only 6.3% of male inmates have access.

Despite the increased likelihood to access to CTE, Figure 9 reveals that of the 16 different programs offered by CDCR, only 13 are available to women. Female inmates are unable to obtain certifications in machine shop, sheet metal work or small engine repair. According to Figure 4, jobs for which training is not available to women tend to be some of the highest paying, with a median hourly wage of $25, $26, and $20 respectively.

Figure 9: Number of Available Vocational Programs by Gender



Recommendations and Further Considerations

Invest in Vocational Training at a Level Proportionate to the Need

The demand for current programming far exceeds supply. Increasing the number of CTE programs at each institution is necessary to ensure that CDCR is meeting its goal of providing educational access to 70% of qualified inmates.

Extend Reentry Period to Ensure CTE Completion and Allow for Multiple Skills Development

CDCR inmates are only eligible to enroll in CTE when they are within 2 years of release. Long-wait lists, however, reduce the amount of time individuals have to obtain a certification, which could to some program completion failure. Expanding the reentry period could minimize failure and afford low-skills adults the opportunity to gain expertise in more than one field, thus improving employability.

Consider County of Parole When Determining CTE Assignments

As previously mentioned, CTE assignments are determined on a first-come, first-serve basis and inmates are usually assigned to the first vocational availability in their institution. Given that job opportunities vary by region, CDCR should consider the county to which an inmate will be release when making CTE placement decisions. Strategically placing inmates in CTE that aligns with regional job opportunities could improve employment prospects.

Use Job Growth Projections to Inform Program Expansion

Projections of industry and occupation employment can be used to assess the need for job training programs and gain an insight into future employment trends. As Figure 10 indicates, roughly 70% of all CDCR inmates return to 10 of California's 58 counties. The regional economies of Los Angeles, San Bernardino, San Diego, Orange, Sacramento, Riverside, Santa Clara, Kern, Alameda, and Fresno counties should guide program expansion and development. For individuals with post-secondary non-degree awards or some college (no degree), aircraft mechanics, computer support, firefighting, cosmetology, heating and air conditioning, nail care, and telecommunications installation are expected to be the largest growing fields. CDCR does not currently provide CTE in aircraft mechanics or telecommunications but should consider making those programs available.

Figure 10: Percentage of Parolees by County

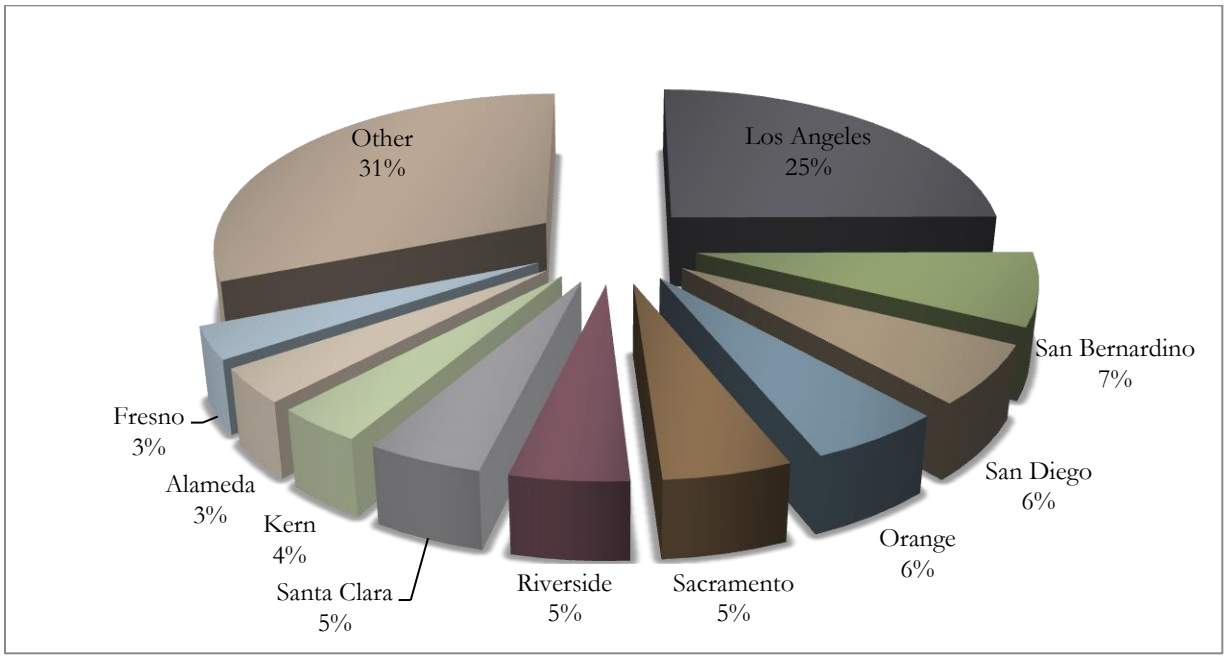


Table 3: Growing Occupations by Education Level

	Alameda	Fresno	Kern	Los Angeles	Orange	Riverside/ San Bernardino	Sacramento	San Diego	Santa Clara
Aircraft Mechanics and Service Technicians		290	350						
Computer Support Specialists	2,560		370	6,810	3,050	1,570	1,410	2,790	4,800
Firefighters				2,710					
Hairdressers, Hairstylists, and Cosmetologists				3,380	1,360	1,900	1,160	2,320	1,060
Heating, Air Conditioning, and Refrigeration Mechanics and Installers		390							900
Manicurists and Pedicurists					880			1,720	
Telecommunications Equipment Installers and Repairers							770		760

Provide Incentives for Educational Attainment

As previously mentioned, there is evidence to suggest that possessing industry certifications improves one's potential earnings upon release. Despite this fact, some inmates prefer to work while

in prison, which provides a wage of $0.75 to $2.38 an hour, instead of pursuing a trade. In total, 65,619 inmates possess jobs within prison and another 7,000 inmates are employed through the California Prison Industry Authority, which operates 57 manufacturing, service, and consumable factories in 24 CDCR institutions throughout California.[41]

In 2007, California enacted AB 900, the Public Safety and Offender Rehabilitation Services Act, which required CDCR to "determine and implement a system of incentives to increase inmate participation in, and completion of, academic and vocational education [programming]." Yet CDCR does not currently have a system in place that provides financial rewards to inmates for participating in career technical education. Additionally, while California provides earned credits to offenders: (a) who the CDCR assigns to conservation camps to fight fires and perform other public service tasks (the California Work Incentive Program or WIP) and (b) offenders who participate in the Bridging Educational Program, inmates who complete other vocational programs do not receive earned credits. [42]

CDCR should offer incentives for CTE involvement and certification. Aside from financial incentives, CDCR could incentivize inmates through phone calls, visitations, and vouchers to the prison canteen.

Conduct Rigorous Longitudinal Study of Employment Trends

It is critical that CDCR improve accountability for the outcomes of vocational training programs. Despite several national studies that analyze the effect of CTE on post-release employment and earnings, there has been no such analysis conducted in California. A longitudinal analysis of CDCR's former inmates would enable the state to (1) better understand how CTE program participation influences employment; (2) make strategic decisions about CTE development and expansion; and (3) construct profiles for inmates who would benefit most from certain CTE programs. Currently, EDD and county parole offices individually collect data on parolee employment and earnings, however, consolidating the information from these agencies and creating a centralized database would provide the necessary data for the robust analysis previously described in this report.

Conclusion

Economic principles suggest that ex-offenders, deciding between labor, leisure and criminal activity, will decrease the amount of time devoted to criminal activity because the opportunity cost of delinquency and incarceration increase. Furthermore, several research studies have shown that when hired in the formal labor market, ex-convicts will be less likely to engage in further criminal activity (regardless of whether they are apprehended and penalized for these crimes).[43] Given

[41] http://calpia.ca.gov/
[42] http://sentencing.nj.gov/downloads/pdf/articles/2007/July2007/document03.pdf
[43] Kevin Schnepel. "Labor Market Opportunities and Crime: Evidence from Parolees." Department of Economics, University of California, Santa Barbara. October 22, 2012. http://www.econ.ucsb.edu/about_us/events/seminar_papers/Schnepel.pdf

prohibitively high incarceration costs and the many benefits of employment to former inmates and their families, the State of California should invest in improving access to and the effectiveness of in-prison vocational training programs in an effort to close the criminal justice system's revolving door.

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Interviews

Name	Title	Organization/Agency	Date
Yong Lee	Staff Services Manager	Office of Program Accountability & Support, California Department of Corrections (CDCR)	January 31, 2014
Jeff Hammond	Research Analyst	California Department of Corrections (CDCR)	March 6, 2014
Jeanne Woodford	Senior Fellow/Former Warden of San Quentin	Chief Justice Earl Warren Institute on Law and Social Policy	April 25, 2014
Gerald Miller	Director of Adult Community Corrections Services	Center on Juvenile and Criminal Justice	March 13, 2014
Katherine Katcher	Founder and Executive Director	Root & Rebound: Reentr y Advocates	April 21, 2014
Judy Lewen	Executive Director	Prison University Project	March 21, 2014
Christopher J. Leibforth	Project Specialist	Sacramento Community Based Coalition	April 15, 2014

Appendix 1: Acronyms

CDCR Institutions

	CDCR Institutions
ASP	Avenal State Prison
CAL	Calipatria State Prison
CCC	California Correctional Center

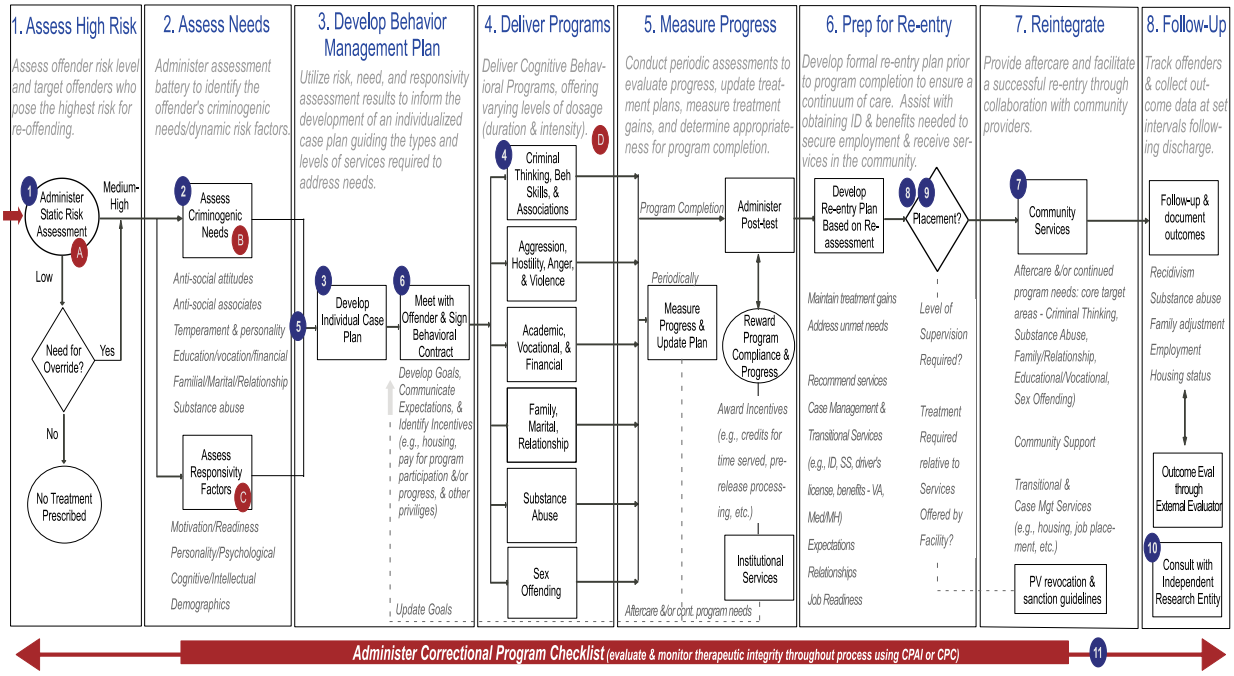
CCI	California Correctional Institution
CCWF	Central California Women's Facility
CEN	California State Prison, Centinela
CIM	California Institution for Men
CIW	California Institution for Women
CMC	California Men's Colony
CMF	California Medical Facility
COR	California State Prison, Corcoran
CRC	California Rehabilitation Center
CTF	Correctional Training Facility
CVSP	Chuckawalla Valley State Prison
DVI	Deuel Vocational Institution
FSP	Folsom State Prison
HDSP	High Desert State Prison
ISP	Ironwood State Prison
KVSP	Kern Valley State Prison
LAC	California State Prison, Los Angeles County
MCSP	Mule Creek State Prison
NKSP	North Kern State Prison
PBSP	Pelican Bay State Prison
PVSP	Pleasant Valley State Prison
RJD	Richard J. Donovan Correctional Facility
SAC	California State Prison, Sacramento
SATF	Substance Abuse Treatment Facility
SCC	Sierra Conservation Center
SOL	California State Prison, Solano
SQ	San Quentin State Prison
SVSP	Salinas Valley State Prison

VSP	Valley State Prison for Women
WSP	Wasco State Prison-Reception Center

Licensing Agencies

	Certifying Agency
ASE	National Institute for Automotive Service Excellence
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
C-Tech	C-Tech Associates Incorporated
CBBC	California Board of Barbering and Cosmetology
CERTiPORT	Internet and Computing Core Certification Global Standards (IC3)
EETC	Equipment Engine Training council
EPA	Environmental Protection Agency
ETA	Electronics Technician Association International
MOS	Microsoft Specialist Certification
NCCER	Nation Center for Construction Education and Research
NIMS	National Institute for Metalworking Skills

Appendix 2: Adult Education Logic Model[44]



Appendix 3: CDCR Adult Education Expenditures[45]

	Rehabilitative Programs-Adult Education Expenditures		
	2012-13*	2013-14*	2014-15*
		Academic Education-Adult	
General Fund	$114,272	$134,386	$128,038
Federal Trust Fund	$460	$0	$0
Reimbursements	$5,028	$7,652	$7,562
TOTAL Academic Education-Adult	**$119,760**	**$142,038**	**$135,690**
		Vocational Education-Adult	
General Fund	$36,550	$47,768	$36,864
Reimbursements	$497	$506	$506
TOTAL Vocational Education-Adult	**$37,047**	**$48,274**	**$37,370**
		Library	
General Fund		$19	$132
TOTAL Library	**$0**	**$19**	**$132**

[44] http://sentencing.nj.gov/downloads/pdf/articles/2007/July2007/document03.pdf

[45] "Governor's Budget - Corrections and Rehabilitation." Accessed April 7, 2014. http://www.ebudget.ca.gov/2014-15/StateAgencyBudgets/5210/agency.html.

TOTAL ADULT EDUCATION BUDGET	**$156,807**	**$190,331**	**$173,192**
TOTAL CDCR BUDGET	**$8,742,290**	**$9,441,255**	**$9,832,581**