



WASHINGTON STATE
Department of
Children, Youth, and Families

**An Evaluation of the Manufacturing Academy Partnership in
Washington State's Juvenile Rehabilitation**

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OFFICE OF INNOVATION, ALIGNMENT, AND ACCOUNTABILITY

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OVERVIEW

The juvenile system of criminal justice seeks to rehabilitate youth. The focus is on meeting the needs of the youth so they can reintegrate into the community better prepared to succeed. Additional resources are provided to keep staff-to-client ratios low, and opportunities for education and treatment (mental health, substance abuse and employment training) are often provided. Recently, there has been an effort to raise the age of juvenile jurisdiction around the country and within the state of Washington more specifically (Green, 2018). The theory is that the juvenile system is more equipped than the adult system to offer treatment, potentially change the long-term trajectory of young adults, and improve the safety of our communities.

Juvenile Rehabilitation (JR) in Washington state offers a variety of opportunities for youth to reduce risk factors and increase their chances of success upon release from residential supervision. To increase successful reentry and reduce reoffending, resources should be invested in programs that have the best outcomes. The only way to systematically identify the programs that work best is to engage in program evaluation routinely. The current study aims to build on this body of knowledge through the evaluation of a job training program called the Manufacturing Academy (MA). As the need for employment and professional training grows amongst working age adolescents, evaluated employment programs like the MA will be increasingly relied upon. With more young adults of working age in the JR system, ensuring they are able to adequately support themselves upon release to the community is an important factor, among others, for successful reentry (Schubert, Mulvey, and Pitzer, 2016; Newton et al., 2018).

EMPLOYMENT AND REENTRY

The relationship between employment and criminal behavior clearly demonstrates that employment reduces the risk of criminal offending for adults, but is less clear for adolescents and young adults (Uggen and Staff, 2001). Although the belief that successful employment will reduce offending among young adults lacks compelling empirical evidence, there is substantial theoretical support for this belief. The basic assumption is that young adults who are employed will have less financial stress, interact with more pro-social peers and have greater investment in their communities. The research, however, does not always show a positive relationship between employment and crime reduction for young people, likely because the relationship is more complex than for adults (Uggen and Staff, 2001).

Generally, successful employment can keep youth from crime. Based on a large-scale randomized study, it has been shown that summer employment can significantly reduce violence for disadvantaged youth (Heller, 2014). It is clear that employment can play a role in reducing delinquency in an at-risk population. Youth who are already involved in the justice system, however, face many hurdles when they leave an institution, including educational and relational deficits that compound the challenges to gaining employment. A recent study of youth who were in contact with the juvenile court system from November 2000 to January 2003 in Maricopa County, Arizona, and Philadelphia County, Pennsylvania, took an innovative approach to examine the role of employment. The study examined the characteristics of those youth who were released from custody and were able to stay out of the criminal justice system over a seven-year period. One of the main characteristics of those who did not reoffend was their involvement in legitimate work (Schubert et al., 2016). The study was not causal in nature, but it does “indicate that a slowly emerging, but continuous, integration into legal wages is the path of those who do not reappear in the criminal justice system” (pg. 77). Employment is important, but part of a larger process.

Vocational programs targeting juveniles and young adults have seen similarly mixed results. Although programs like The Center for Employment Opportunities (CEO), a comprehensive employment program for young adult and adult offenders in New York, have shown success in improving employment outcomes and reducing recidivism, the effects fade and are undetectable after one year. Even more common amongst employment programs targeting young adults are improvements in employment outcomes which do not translate into measurable effects in reoffending. Programs such as the Transitory Jobs Reentry Demonstration (TJRD) and the Community Restitution and Apprenticeship Focused Training (CRAFT) are two examples of programs that lack such effects (Jacobs 2012, and Schaeffer et al. 2013). Results provide support to the theory that young adults share the needs of both adolescents and adults. Programs that are able to address the factors associated with delinquent behavior in adolescents, as well as prepare youth with the skills they need to be successful as adults, are needed to adequately prepare this population.

Looking at findings from the adult system, job training and vocational programs seem to be finding greater success. Specifically, in Washington state, the research has shown some promise for vocational education and training among adults who have criminally offended. In a study of the Washington State Correctional Industries (CI), using a quasi-experimental design, the authors found that inmates who received occupational training and worked in CI were significantly less likely to recidivate and more likely to gain employment after release (Lutze, Drapela, and Schaefer, 2015). There is some reason to believe, however, that these types of effects might be less pronounced with a younger population (Uggen and Staff, 2001). In a review of turning points for criminal offenders, Uggen and Staff observed:

The effectiveness of short-term work programs for young offenders is less encouraging; most evaluations find that subsidized employment does not reduce recidivism for adolescents and young adults. However, evaluations of long-term residential programs that emphasize vocational training, placement, and education offer some promise for reducing crime among at-risk or released adolescents. (pg. 14)

Currently, very few experimental studies examining the relationship between vocational education and training and recidivism among young adults exist (Newton et al., 2018). Although the literature is still developing on the issue of job training and recidivism among young offenders, we do know that youth need effective support if they are to find employment (Brown and Thakur, 2006). Taken together, the literature suggests employment is an important part of a successful transition from incarceration to the community for young adults. It is also clear that, for young people, job training and employment are part of a broader set of needs that must be met, including education and job placement.

With this evidence, however, focusing on vocational training and employment appears to be a promising avenue to help youth achieve success in the community and avoid recidivism. The current study uses a quasi-experimental design to examine the impact of a manufacturing job training program on justice-involved youth. Specifically, this study examines whether youth who entered the program were more likely to be employed after their release from custody and if they earned more money. Increased earnings and employment is undoubtedly an important element of what it takes for youth to live productive lives and avoid future interactions with the criminal justice system.

THE MANUFACTURING ACADEMY

The Manufacturing Academy is an established pre-apprenticeship training program that was first implemented in JR 2014, funded by a federal Office of Juvenile Justice and Delinquency Prevention (OJJDP) grant. It was a collaboration between JR, Pioneer Human Services (PHS) and the Aerospace Joint Apprenticeship Committee (AJAC).¹ The original grant-funded program ended in 2015, but the program was relaunched in 2017 with other funding sources. Bates Technical College was added as a partner as well in 2018. Throughout the different iterations of the Manufacturing Academy, the location has changed four times, but the curriculum has remained the same. The program is 12 weeks long and results in seven industry-recognized certifications.² As of October 2018, a total of 14 cohorts had completed the program with a total of 136 youth starting the program.

The program has gone through a few variations, but the following description of participant selection and program administration reflects the program as of October 2018. Youth are assessed for eligibility to move to a community facility within 14 days of intake into an institution.³ Youth who are eligible to move to a community facility⁴ (where the youth can be in the community up to 12 hours a day) are informed of the Manufacturing Academy opportunity by a transition specialist. If the youth is interested, they are encouraged to apply. Suitability for MA is assessed during a written application, which all youth must submit to be considered for the program. Those applications are reviewed by JR staff and the youth go through an interview process with MA program staff designed to give them the experience of an actual job interview. Youth are informed if they were accepted into the program, put on the waiting list, or not accepted for the current cohort. Currently, MA has the capacity for 12 youth per cohort.

At least a week before the start of the MA, the youth are transferred to one of two facilities in Tacoma, WA. A total of seven youth move to the Community Reentry Skill Center. This is a medium security residential facility that is operated by Pioneer Human Services. The remaining five youth are transferred to the Oakridge State Community Facility. Every morning, Monday through Friday, the youth from both facilities are transported to Bates Technical College, where the Manufacturing Academy takes place. The program has a dedicated classroom and workshop at Bates. Along with the industry certifications mentioned earlier, the youth can earn up to up to three high school credits and up to 32 college credits during their time in the Manufacturing Academy.

As of October 2018, a total of 14 cohorts of MA had been successfully completed. Exhibit 1 shows the cohort number, the start date, end date, the number of youth who started the program and the number of youth who completed the program. Completion includes those who made it to the end of the program and earned at least five of the seven certifications. Youth who do not complete the program are either expelled for behavioral issues or drop out due to lack of interest. A total of 136 youth have started the program and 115, 84.6 percent, have completed it.

¹ In 2014 and 2015, PHS instructors were trained by AJAC to implement the curriculum. Starting in 2017, JR started working directly with AJAC to deliver the curriculum.

² OSHA 10, CPR/First Aid, Forklift, Flagging, Lean Manufacturing Principles, Manufacturing Basics 1 & 2

³ A youth must serve 10% to 50%, depending on risk assessment levels, of their minimum disposition in an institution, before becoming eligible for a community facility. Once eligible, youth are assessed for suitability for a transfer by a transition specialist.

⁴ For youth categorized as medium security, they would be assessed for placement at the Community Reentry Skill Center.

Exhibit 1: Manufacturing Academy cohort dates and size

Cohort	Start Date	End Date	Started	Completed	% Completed
1	March 3, 2014	June 6, 2014	5	5	100%
2	March 17, 2014	June 17, 2014	13	9	69%
3	June 30, 2014	September 19, 2014	9	8	89%
4	June 30, 2014	September 19, 2014	14	14	100%
5	September 22, 2014	December 19, 2014	11	11	100%
6	January 6, 2015	April 3, 2015	14	14	100%
7	April 13, 2015	June 19, 2015	7	7	100%
8	December 14, 2016	March 3, 2017	7	7	100%
9	March 13, 2017	June 2, 2017	6	4	67%
10	June 12, 2017	August 31, 2017	7	6	86%
11	September 11, 2017	December 12, 2017	7	4	57%
12	January 8, 2018	March 30, 2018	12	9	75%
13	April 9, 2018	June 29, 2018	12	9	75%
14	July 9, 2018	September 27, 2018	12	8	67%
Total			136	115	85%

METHODOLOGY

The current study has a quasi-experimental design with a control group selected through propensity score matching using kernel matching. Propensity score matching is a useful statistical technique that allows researchers to retrospectively identify a control group using relevant background information. Using demographic information and criminogenic risk domain scores, we created a conditional probability that a youth, in this study, would be admitted into the treatment group, the Manufacturing Academy. After this propensity was calculated, those who were part of MA⁵ were matched to those who had a similar propensity (that is, a similar pattern of risk) but did not attend MA. This approach has been used in a variety of studies in criminology with increasing frequency (Apel and Sweeten, 2010). The treatment and control groups were balanced on the measured covariates, increasing the likelihood that any difference between the groups on the outcome were a result of the treatment (Onifade et al., 2011).

The propensity score was created using 11 risk domain scores⁶, race, most serious offense category, and release age. Twelve youth who were MA participants were excluded from the study since they did not have any ITA information entered the Automated Client Tracking system (the JR records management system). These co-variables were used to predict the likelihood of entry into MA. These propensities were then used to match youth, to simulate the randomization of youth into MA and a control group. Since we do not have true randomization, which would create a control group that was comparable to the treatment group, we are using this statistical technique to create a control group that is as close to the treatment group as

⁵ Given the small number of youth who did not complete the MA program (n=21), we were not able to conduct analysis comparing those who graduated to those who did not graduate.

⁶ Risk domain scores were taken from the youth’s initial Integrate Treatment Assessment (ITA). Scores on the historical domains were used from the following domains: record of referrals, school history, free time, employment, relationships, living arrangements, alcohol/ drug use, mental health, attitudes/behaviors, aggression, and skills.

possible. Given the relatively small number in the treatment group for some of the outcome variables, we used the kernel matching method. This method identifies multiple youth in the control group for each in the treatment group. Weights are then used for those in the control group. Those who are closer in propensity to a treated youth are weighted more heavily. This allows for a larger, more stable control group in the analysis. The treatment and control groups are then compared on the outcome variable. The average treatment effect on the treated (ATT)⁷ was calculated using the kernel matching method, outlined above, with bootstrapped standard errors. The common support option was used during the matching process to ensure propensities from the control group were taken from the same range as the treatment group. The balancing property was satisfied within six blocks (different levels of propensity) for all control variables.

A series of outcome variables were constructed to assess the impact of MA on employment and financial earnings. All the financial data was derived from the Washington State Employment Security Department. First, a dichotomous (yes/no) employment variable was constructed for each quarter, up to six quarters (18 months) post-release from residential commitment in JR. The variable was marked yes if any employment was reported for the youth in that quarter. The second category of financial data was quarterly earnings. The total earnings, in dollars, during a quarter were reported and variables were constructed for each quarter (one through six) post-release from residential commitment in JR. All the quarterly data were adjusted based on the youth's release date. For example, if a youth was released on Feb. 10, 2015, their release quarter would be the first quarter of 2015. That youth's first quarter of financial data would come from the second quarter of 2015, and so on. Finally, an overall employment and earnings variable was created to indicate whether the youth was employed at any time during the 18 months (six quarters) post-release, and the total earnings over the 18-month period.⁸ The sample size is reduced each time the outcome period is extended since only those who had been in the community for at least 18 months were included in 18-month post-release employment analysis.

As part of the evaluation process, the research team spoke with 16 key stakeholders⁹ in unstructured interviews to better understand the perceived challenges and successes of MA implementation, both the current and former versions of the program. These interviewees assisted in interpreting the quantitative findings and provided informed recommendations in the discussion section. One key stakeholder group, youth, were not included in these conversations due to the resources that would be required to follow up with youth who have been released from JR.

FINDINGS

Exhibit 2 shows the descriptive information about those who participated in the MA program. As of November 2018, there were 136 youth who started MA. About 15.4 percent were expelled or dropped out of the program, compared to 72.1 percent who graduated and 12.5 percent who completed, but did not graduate. To be considered a graduate, a youth had to complete the

⁷ The average treatment effect (ATE) would be appropriate in a true experiment. The ATT creates a counterfactual based on what would be expected from the treatment group had they not received the treatment.

⁸ This study takes place during a relatively strong and improving economy in Washington State. The unemployment rate in the state was 6.1% in 2014, 5.6% in 2015, 5.4% in 2016, and 4.6% in 2017 (Washington State, Office of Financial Management).

⁹ Stakeholders included: JR leadership, MA program managers, external partners, classroom instructors, community facility administrators, employment and reentry coordinators.

program and earn all seven certifications. The youth were considered completers if they finished at least five of the certifications. The vast majority in the program were males (98.5 percent), with two females participating during early cohorts. The average age at the start of the program was 18.6 with the average release age of 19.2. On average, youth were released from JR approximately 4.5 months after graduation from MA. The program included a diverse population based on race and ethnicity. About 29.4 percent were African American, 36.8 percent were White, 14.7 percent Hispanic, and 12.5 percent identifying with more than one race or ethnicity. There was also variability in the most serious offense category for their current commitment.¹⁰ About 27.6 percent of youth had an A offense, 36 percent had a B+ offense, and 17.9 percent had a B offense. Overall, about 64 percent were committed for an offense against a person.¹¹

Exhibit 2: MA Participant Descriptives

Program completion	MA Youth	
	Number	Percent
Completed	17	12.5%
Graduated	98	72.1%
Expelled/Dropped out	21	15.4%
Age at start of MA	18.6	(range 17.1 to 20.8)
Release age	19.2	(range 17.4 to 21)
Time between graduation and release	138.2 days	(range from 0 to 765)
Gender		
Male	134	98.5%
Female	2	1.5%
Race/Ethnicity		
African American	40	29.4%
Asian	2	1.5%
White	50	36.8%
Hispanic	20	14.7%
Native American	3	2.2%
Multi-racial	17	12.5%
Other	4	2.9%
Most Serious Offense Category		
A+	1	0.8%
A	37	27.6%
A-	11	8.2%
B+	48	35.8%
B	24	17.9%
C+	5	3.7%
C	6	4.5%
D	2	1.5%
Offense against person	87	63.9%

¹⁰ The MA treatment group had significantly longer lengths of stay at JR. MA participants had an average stay of 689 days compared to 331 for those in the comparison. We were not able use this variable in the analysis and the results remain unbalanced by length of stay.

¹¹ Assault, kidnapping, murder, sex offense, rape, robbery

Exhibit 3 displays the results of the analysis after the propensity score matching. During the first quarter after release, those who were in MA were significantly more likely to find work. After the first quarter, MA participants had a higher rate of employment by 10.4 percent and earned almost \$305 more in the three-month period. These results were consistent during the second and third quarters (four to nine months) after release from JR. The effect was no longer significant during the fourth and fifth quarter post release. The earnings were still higher (marginally significant), during the fourth and fifth quarter. The effect returned during the sixth quarter post-release, MA participants had an increased employment rate (7.5 percent higher than the control group) which was marginally significant, and significantly higher earnings, \$577 more than the control group. We can interpret these effects as indicating an initial and significant effect that wore off between 10 and 15 months' post release; however, if youth remained in the community, the effect returned toward the end of the 18-month period. When we look at the effect over the 18 months post-release (having any employment at any time during the 18 months post-release), we see that MA participants had a significantly higher rate of employment, 13.8 percent higher than the control group, and about \$2,658 more in earnings over 18 months (marginally significant effect).

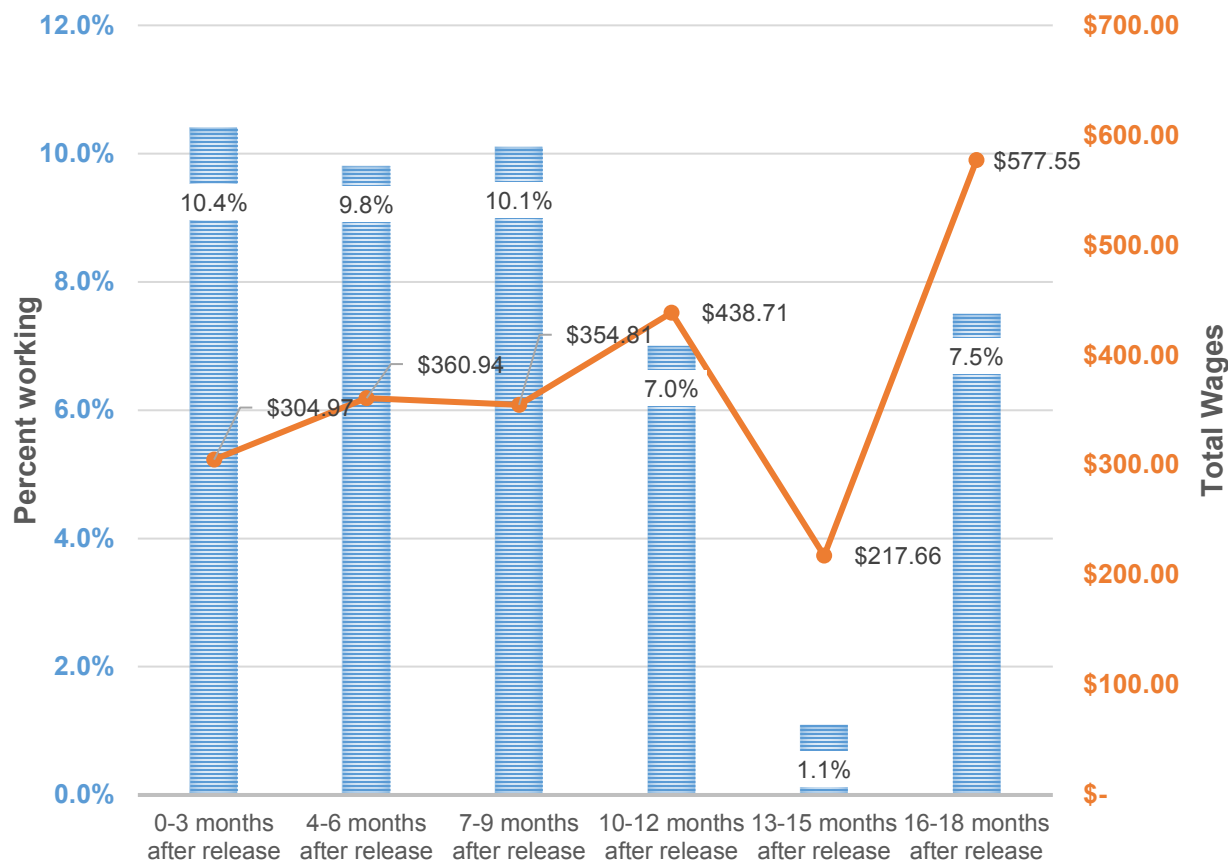
Exhibit 3: Quarterly Financial Effects of Participation in the Manufacturing Academy Using Propensity Score Matching

	Any work in the quarter		Wages in the quarter	
	ATT	Std Error	ATT	Std Error
0-3 months after release treatment n/control n	0.104* 69/781	0.052	\$304.97 ^a	213.619
4-6 months after release treatment n/control n	0.098* 68/747	0.056	360.94 ^a	230.922
7-9 months after release treatment n/control n	0.101* 65/685	0.054	354.81 ^a	258.154
10-12 months after release treatment n/control n	0.07 61/605	0.065	438.71 ^a	316.122
13-15 months after release treatment n/control n	0.011 61/570	0.058	217.661	267.611
16-18 months after release treatment n/control n	0.075 ^a 61/530	0.056	577.55*	280.989
0-18 months after release treatment n/control n	0.138* 61/530	0.066	2658.89 ^a	1501.005

Note: ATT = Average Treatment on the Treated. Propensity score matching using Kernel Matching
^a = p<0.10; * = p<0.05

Exhibit 4 displays the same information as Exhibit 3 but in a graph. The effects are the difference between the MA youth and what would have been expected if they did not participate in MA. The left y-axis (shown in blue) shows the percent increase in employment by quarter post release from JR. The right y-axis (shown in orange) shows the difference in earnings by quarter post release from JR.

Exhibit 4: Outcomes for MA Starters Compared to Control Group



In summary, using propensity score matching, the MA program resulted in significant increases in the likelihood of employment for participants and increases in quarterly earnings in the nine months post release. This effect, however, seemed to disappear after nine months post-release, but re-emerged between 16 and 18 months.

INDUSTRY WORK DISTRIBUTION

In order to examine whether the MA program increased the likelihood of youth finding employment in the manufacturing field, hours worked and wages earned were studied according to the industry the youth acquired employment in post-release. Industry of employment was determined using the North American Industry Classification System (NAICS) code for each employer. Exhibit 5 displays the distribution of hours worked and the average wages for MA youth and the control group by NAICS industry. As can be seen from the figure, about 11 percent of hours worked by those from the MA program were in manufacturing¹² compared to 9 percent in the control group, a non-statistically significant difference. By a large margin, youth released from JR are most likely to work in the food and entertainment industry. About 45 percent of hours worked by youth in both the MA and the control group were in food services, entertainment, retail, transportation and warehousing. Although participation in the MA did not

¹² Manufacturing was broadly defined as employers that “engage in the mechanical or chemical transformation of materials or substances into new products.” These are operationalized as NAICS codes that begin with 31, 32, or 33.

increase the likelihood of employment in the manufacturing field, youth who participated in the MA program did earn approximately \$1 more per hour when employed in manufacturing than youth who did not participate. The MA youth earned higher wages in 7 of the 8 industries presented in Exhibit 5.¹³

Exhibit 5: Distribution of Work by Industry

Industry	Manufacturing Academy Youth		Control Group		Differences	
	Percent of Hours	Average Wage	Percent of Hours	Average Wage	Difference in Hours	Difference in Wages
Food Services and Entertainment	26.5%	\$13.29	28.7%	\$12.30	-2.2%	\$0.99
Retail/Transportation/Warehousing	18.9%	\$15.19	16.2%	\$13.21	2.8%	\$1.98
Information/Real Estate/Profession and Technical Services	15.7%	\$17.77	12.8%	\$13.75	2.9%	\$4.02
Manufacturing	11.1%	\$14.94	9.0%	\$13.99	2.2%	\$0.95
Agriculture, Forestry, Fishing and Hunting	8.8%	\$14.10	11.1%	\$12.74	-2.3%	\$1.36
Construction	8.8%	\$17.27	14.8%	\$17.65	-6.1%	\$(0.38)
Educational Services and Health Care	5.3%	\$13.13	0.8%	\$11.52	4.5%	\$1.60
Other Services	4.9%	\$15.19	4.7%	\$11.24	0.2%	\$3.96
Public Administration	0.0%	N/A	2.1%	\$18.99	N/A	N/A

SUPPLEMENTAL ANALYSIS ON MA AND RECIDIVISM

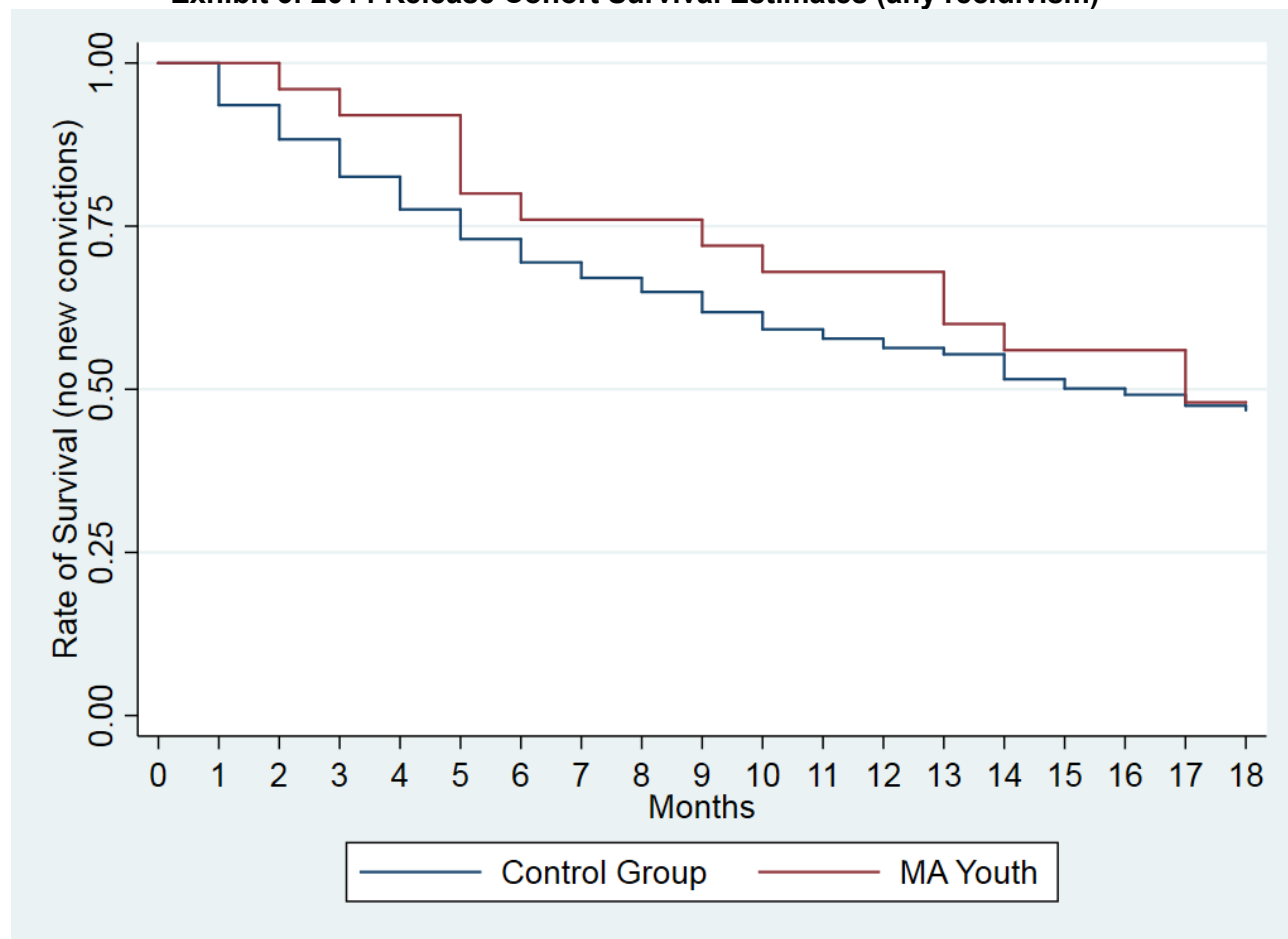
In addition to understanding the employment activity of MA youth, we conducted some supplemental analysis on the impact MA might have on recidivism outcomes. We conducted analysis using 18-month recidivism data for those released in 2014. Survival analysis¹⁴ was used to examine time to an event, in this case, recidivism. There were no significant differences between the treatment and control groups for overall recidivism, misdemeanor recidivism, felony recidivism or violent felony recidivism. Exhibit 6 shows the survival analysis of any recidivism of MA youth released in 2014 compared to those youth who did not attend MA. The vertical axis shows the rate of survival (no new convictions), the blue line represents the trend for the control group and the red line the trend for MA youth. The horizontal axis shows the number of months since their release. You can see that MA youth did not seem to recidivate as quickly but both ended up at about 54 percent recidivism after 18 months. The small sample size (25 MA youth released in 2014 and had all the available data for analysis) contributes to the finding that there

¹³ MA youth were substantially higher in the Profession and Technical Services industry. This difference was being driven by work in landscaping, janitorial services, and temporary help services.

¹⁴ Survival analysis is a method that examines an outcome over time, where the occurrence happens at different points (i.e., illness, death, divorce).

was not a significant difference (chi square = 0.20; p=0.65) in survival rates between MA youth and the control group. Some of the decrease in employment and wage effects might be the result of MA youth recidivism catching up to the control group in months 13 and 14. We are not able to fully examine the relationship between employment and recidivism in this study, but the two are undoubtedly related.

Exhibit 6: 2014 Release Cohort Survival Estimates (any recidivism)



DISCUSSION AND RECOMMENDATIONS

Using a quasi-experimental design, this evaluation found that MA had a positive impact on employment rates and earnings for youth released from JR since 2014. While there is an overall effect over 18 months, the majority of those benefits seem to be occurring in the first nine months. Further, MA youth were only slightly more likely to work in manufacturing post-release and were equally as likely as the control group to recidivate. These positive employment outcomes should be considered a success. JR serves a very high needs population and any program that helps improve outcomes should be celebrated and continually refined. There are some limitations that should be considered when interpreting these findings. First, this analysis only considers official earnings reported to the state. If a youth did any work unofficially, those would not show up in the analysis. Second, these findings are more representative of the earlier iterations of the MA, since only youth who have been released from JR for 18 months were included in all of the analysis (released between April 2014 and September 2016). The program has gone through modifications over the years, making it difficult to determine if these findings

can be expected of the current model. The following recommendations were developed based on stakeholder interviews, considerations from prior literature, and the analysis presented in this report. The purpose of these recommendations is to help improve the efficiency and effectiveness of the Manufacturing Academy in JR.

RECOMMENDATION 1: FORMALIZE AN IMPLEMENTATION PLAN.

One of the most important aspects of a multi-agency project, such as the Manufacturing Academy, is a shared and agreed upon plan of action. During conversations with stakeholders, it was clear that the many of the partners did not fully understand the roles and responsibilities of the other partners. Specifically, there was a lack of clarity about how youth were being selected for the program and who was responsible for job placement and connecting youth to manufacturing jobs upon release from JR. The program does not currently have a written implementation plan. JR should take the lead on drafting a clear implementation plan with the partners involved. This plan should include details on the participant selection process, expectations of youth behavior (and how MA will respond to unacceptable behavior), expectations of partners, and follow-up after graduation (internship and job placement). At a minimum, there should be representatives from all the MA partnering agencies involved in the development of the implementation plan. From within JR, a representative from Oakridge Community Facility, an employment coordinator, a transition specialist, and the reentry administrator should be involved in the creation of the plan, at a minimum. If processes need to be changed, an update to the plan should be proposed to the stakeholders. Put simply, to ensure long-term success, the JR MA program needs to more formally develop a plan, and then follow that plan. All of the recommendations that follow should be outlined in the MA Implementation Plan.

RECOMMENDATION 2: SELECT YOUTH FOR THE PROGRAM WHO HAVE AN INTEREST IN LEARNING MANUFACTURING SKILLS.

One of the concerns consistently raised during the evaluation was related to the admission process for the MA program. Although youth participants were not asked about their opinions for this study, based on adult stakeholder interviews, it appears that many, if not most, of the youth who enter MA were not perceived to be interested in careers in manufacturing. We recognize that there are many considerations when selecting youth for the program, including release date, community facility eligibility and availability. This lack of interest can result in a number of challenges for the program, including youth behavior and motivation. We have two recommendations that will help with the selection process. First, in preparation for career development generally, and for MA more specifically, JR should implement a career assessment tool. These tools can help identify a youth's strengths and possible career paths that match. One option would be to explore the Washington Career Bridge website (http://www.careerbridge.wa.gov/Home_ExploreCareers.aspx) to take advantage of resources available through the state. Another example of such a tool is the WOWI, which is used for "career decision-making, career exploration, education and training, and job placement." (<https://www.wowi.com>). Youth should be selected for the MA who have an aptitude for manufacturing work. This tool was used during the earlier version of MA in 2014 and 2015, and should be consistently used moving forward. Second, a variety of partners should be consulted and participate in the creation of clear selection criteria for the MA program. The MA instructor and a representative from the community facility where the youth will live, should be key decision makers on who will be selected for the program. This will help build the connection between the youth and the staff they will be working with during the MA program and it will also give the facility and instructor ownership and buy-in during the selection process.

RECOMMENDATION 3: HAVE FEWER COHORTS PER YEAR TO ALLOW FOR MORE ORIENTATION AND FOLLOW-UP.

This recommendation is carried over from the 2015 JR authored grant report on MA and remains applicable today (Devers and Harvey, 2015). MA is currently running four 12-week-long cohorts a year. This does not allow adequate time for orientation before the program starts or sufficient follow up time after graduation to locate manufacturing jobs or internships.

Additionally, according to stakeholder interviews, running four cohorts of 12 youth annually places significant strain on community facility bed availability and the logistics of planning youth transfers. To improve the transition process, we suggest having two or three cohorts a year. Placing the youth at the community facility two to three weeks before the program starts will allow for the staff at the facility to get to know the youth before supervising them in the community. Additionally, community facility staff indicated that this pre-program time could be used for tutoring to prepare the youth for some of the content (particularly related to math), using the resources currently available in the facility. One stakeholder suggested that as they begin the MA, youth should be supported to reach out to some manufacturing employers in their home community and build a connection. To gain real-world application of skills and interact with potential employers, in the weeks after graduation the instructor and community facility could set up short internships or tours of manufacturing facilities. This time should be used to help the youth translate the knowledge and certifications from MA into a manufacturing internship or job. Finally, if a youth drops out or is expelled from MA, another youth who has been identified for the next cohort can and should be moved to the CF as soon as possible so they can get adjusted and start to become part of the MA culture of work and academics. The youth could start researching MA jobs locally and in their home community and start with tutoring on topics relevant to their MA curriculum.

RECOMMENDATION 4: RECONSIDER THE PROCESS OF WHERE YOUTH ARE MOVED.

To give the youth the best chance of success in manufacturing, after completion of the program, youth should be transferred to community facilities that have manufacturing employers nearby that participate in the AJAC's apprenticeship program¹⁵. Exhibits 7 and 8 provide information on the community facilities best situated to give youth a manufacturing experience. The red dots in Exhibit 6 represent the JR facilities and the blue dots are all the manufacturing employers that participate in the AJAC apprenticeship program. Exhibit 8 lists the number of training agents within 5 and 10 miles of the facilities. The locations that have the most manufacturing employers that participate in apprenticeship programs within 5 miles, in order of greatest access, are: Community Reentry Skills Center, Woodinville CF, Ridgeview CF¹⁶, Oakridge CF and Twin Rivers CF. The pattern is similar if we look at the community facilities that have manufacturing employers within 10 miles. It is not enough to simply be close to a manufacturing facility. The relationships and expectations need to be developed with manufacturing employers. For the vast majority of youth, it is not going to be possible to participate in an 18-month apprenticeship out of a community facility since the average stay in JR is 10.5 months total. There are other support systems that JR should make sure employers are aware of; one example is the Federal Bonding Program (<http://bonds4jobs.com/>) that can help reduce the risk an employer might perceive when hiring someone who has been justice-involved. At a minimum, MA graduates should be able to tour different facilities and job shadow for a brief period. These options should be explored to make sure youth are connecting with the manufacturing field after they graduate from the Manufacturing Academy.

¹⁵ <https://www.ajactraining.org/aviation-employers/participating/>

¹⁶ There are 9 manufacturing employers who support apprenticeships within 10 miles of Ridgeview CF. This level of access in close proximity to the single female CF indicates that female MA graduates would have options for employment if MA participation was allowed.

Exhibit 7: Number of MA Participating Employers within 5 Miles of Residential Facilities

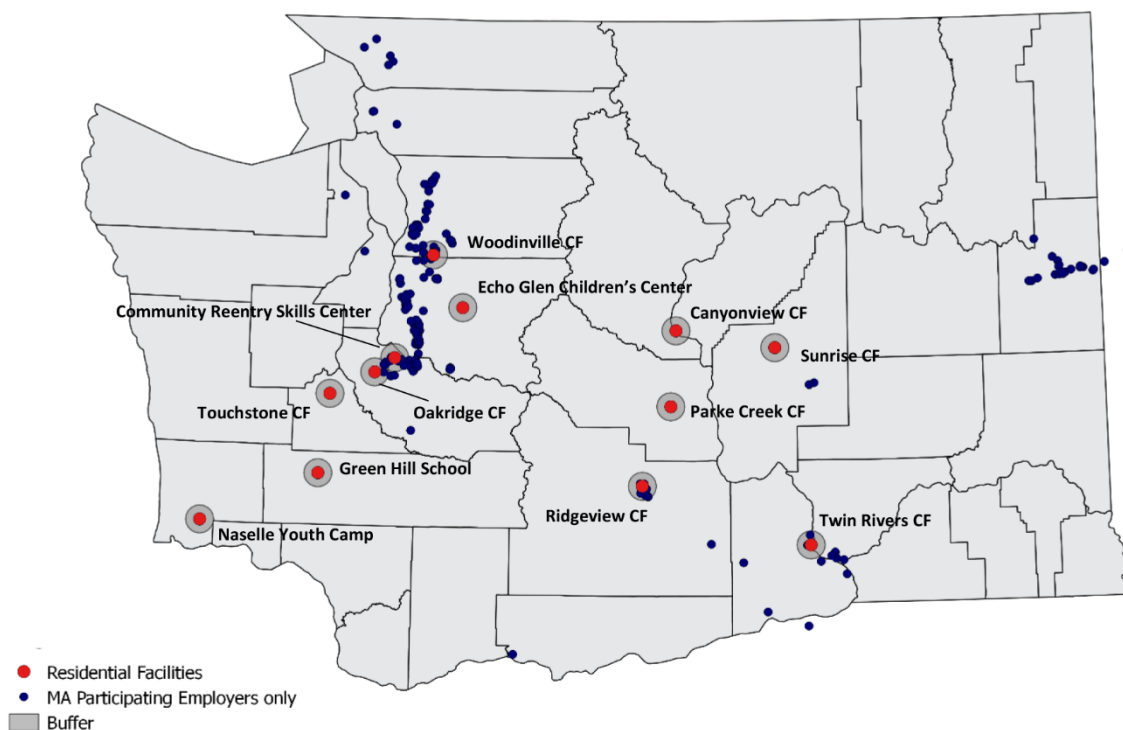


Exhibit 8: Number of Participating MA Employers within 5 and 10 Miles of JR Residential Facilities

Facility	Number of Employers within 5 miles	Number of Employers within 10 miles
Green Hill School	0	0
Echo Glen Children's Center	0	5
Naselle Youth Camp	0	0
Community Reentry Skills Center	15	71
Canyon View CF	0	0
Oakridge CF	4	25
Parke Creek CF	0	0
Ridgeview CF	9	9
Sunrise CF	0	0
Touchstone CF	0	0
Twin Rivers CF	4	10
Woodinville CF	11	47

RECOMMENDATION 5: SET MANUFACTURING JOB PLACEMENT AS A KEY OUTCOME.

In conversations with key stakeholders, it was clear that there were two main goals of MA. The first is that MA provided a real-life experience of going to school and obtaining job skills. The experience of the program itself was one goal; others, however, indicated that the program was not meeting expectations if the youth were not obtaining manufacturing jobs as a result of the academy. Clear goals should be stated, which can be accomplished through the establishment of an MA Implementation Plan (Recommendation 1). We recommend that placement in a manufacturing job post-release from a residential facility be a key metric for determining the

success of the program. If the process is working, we should see more MA youth pursuing manufacturing jobs in the years post-release from JR. Investing resources for selection into the program and follow-up after the program will help increase this outcome. Finding placements for JR youth in the manufacturing industry is essential because it is the realization of the training program. The MA flyer states, “exclusive access to job opportunities with local manufacturers.” JR should make sure it is fulfilling this promise. Job support when the youth is released could include a list, with contact information, of manufacturing companies near the youth’s home. Responsibilities for this placement should be clearly outlined in the program’s written implementation plan.

RECOMMENDATION 6: CONSIDER HOW MA FITS INTO THE YOUTH’S BROADER TREATMENT NEEDS AND REENTRY PROCESS.

All JR youth will need employment in the near future, and this need will be even more important as JR expands to serve youth up to age 25. MA seems to help address some of the barriers to employability that youth experience. The youth in JR, however, have a variety of needs, including mental health, substance abuse and trauma. There are points after release where the MA youth are not significantly different from those youth who did not participate in MA. Specifically, after nine months post-release the employment effect seemed to wear off and recidivism after 18 months was not any different for MA youth. Successful reentry will include employment along with other forms of post-release support. The stakeholders should consider how MA fits into the broader treatment plan for the youth. The recent inclusion of the MyJOBS¹⁷ program for MA youth will help the youth refine some of the soft skills needed to obtain and retain employment. Program staff should find ways to integrate MA into the broader needs of JR youth. A youth’s success when they return to the community is multi-dimensional. A recent study on the role of employment for justice-involved youth concluded:

The most promising programs appear to be those that offer a holistic and comprehensive approach. These programs do not focus only on employment but provide assistance/services in other areas that may impact ... reintegration into the community such as drug and alcohol treatment, housing assistance, cognitive skills, and remedial education (Newton et al., 2018).

RECOMMENDATION 7: CONTINUE MONITORING IMPLEMENTATION AND IMPACT OF MA.

The MA program is realizing some financial benefits for youth, but has the potential to be even more beneficial with a clearer implementation plan. MA should have regular evaluations conducted to ensure that the program is being implemented according to the plan and that the implementation is resulting in the intended impact. The program should commit to having a process and impact evaluation conducted every few years to help continue to refine the program. Some questions that can be examined in future evaluations include: which certifications are youth using and are there others that would be beneficial? Are there additional selection criteria that will improve the likelihood of success? What are predictors of graduation? What are some of the barriers for employers in manufacturing to hire youth with a criminal history? What is the long term (more than two years) impact of MA? Committing to continuous improvement through evaluation will give us the best chance of improving outcomes for JR youth.

¹⁷ The My Journey Out Beyond (MyJOB) program provides workforce readiness training and mentoring through the Pacific Mountain Workforce Development Council (PacMtn).

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