

CHAPTER 9

COMMUNITY REINTEGRATION OUTCOMES FOR SUBGROUPS OF JUVENILES RELEASED FROM DJJ RESIDENTIAL FACILITIES

9.1 Introduction

In its 2004 Annual Report to the Florida Department of Education, JJEOP reported on the academic achievement and community reintegration outcomes of a second cohort of juveniles (Cohort II) released from Florida's juvenile justice residential facilities. Many of the findings from the previous year's analysis of those same outcomes for Cohort I were replicated. Specifically, academic achievement while incarcerated increased the likelihood that a youth would return to public school upon release and that returning to public school significantly decreased the likelihood that he or she would be rearrested. The consistency in these findings and the similarity of the cohorts' demographics provided ample support for combining the two cohorts into one and extending the analysis to answer additional research questions.

The two research questions guiding this analysis are:

1. Is the effect of academic achievement while incarcerated on the likelihood of returning to school following release stronger for some subgroups of the population than for others?
2. Is the effect of returning to and regularly attending school following release from incarceration on the likelihood of rearrest stronger for some subgroups of the population than for others?

What follows are descriptive results that simply compare subgroups on the two outcome measures of primary interest and the results of a multivariate analysis that examines the hypothesized causal effect of the two variables of primary interest on these two outcome measures. The categorization of the population into subgroups was informed by prior delinquency research and the literature on life-course and developmental theories of delinquency. The subgroups examined here are as follows:

1. Sex/gender – males vs. females
2. Race – whites vs. racial minorities
3. Age – less than 16 years of age vs. 16-19 years of age
4. Socio-economic status (SES) – low vs. high
5. Learning/behavioral/cognitive disability – no disability vs. disability
6. Age/grade level – below vs. on or above
7. Risk of delinquency – high vs. low

This chapter will begin by discussing data and methods in Section 9.2. Types of measures used will be followed by a discussion on the research methodology. Section 9.3 contains results, including tables illustrating selected descriptive statistics, as well as results of logistic regressions addressing return to school and re-arrest within 12 months of release. Subgroup analyses conducted are attended to within 5 tables, focusing on receipt of high school diplomas or GED diplomas, returning to public school, re-arrest, effect of academic achievement, and lastly effect of return to school with above average attendance on re-arrest. A summary discussion concludes this chapter in Section 9.4.

9.2 Data and Methods

Data for these analyses were obtained from the Florida Department of Education (FDOE) and the Florida Department of Law Enforcement (FDLE). Two previously-identified cohorts of releases from Department of Juvenile Justice (DJJ) residential facilities (fiscal years 2000-01 and 2001-02) were merged to create one larger cohort of 9,968 youths. This larger cohort was then linked to an arrest history file pulled from FDLE's Computerized Criminal History (CCH) database and an attendance history file pulled from five years of FDOE Survey 5 attendance and end-of-year records. See Appendix D for a detailed description of the methods used to identify the cohorts of releases.

Measures

The outcome measures of community reintegration examined here are return to public school and rearrest, both within one year of release from a DJJ residential facility. Return to public school was determined using attendance data on all public schools in Florida, where the first entry date for a non-DJJ school after the youth's date of withdrawal from the DJJ school and prior to one year from that date was coded as a return to school. A rearrest was determined using data from the arrest history file and the same date parameters as those for return to school. For youths who returned to school, arrest dates prior to the date of return were dropped so as to maintain the appropriate time-order for examining the effect of return to school on rearrest.

The factors associated with community reintegration that are of primary interest in this analysis are academic achievement while incarcerated and attendance in public school following release. Academic achievement is measured as the number and proportion of academics credits earned while incarcerated. The measure is standardized to take into account length of stay in the residential facility. Attendance in public school is measured the same as return to school, with an additional parameter to measure the youth's level of attendance upon return. If a youth returns to school and maintains an above average (cohort average) level of attendance, he/she is considered a school attendee. If a youth does not return to school or returns to school but maintains a below average level of attendance, he/she is *not* considered a school attendee.

In addition to the standard demographic variables of age, race, and sex, the multivariate analyses presented below include several individual-level variables thought to have an effect on the likelihood of successful community reintegration. These include and are measured as follows:

- Low SES: Youth qualified for free/reduced lunch at least once within the time-frame of our student demographic file (1999-00, 2000-01, 2001-02, 2002-03, 2003-04).
- Below Age/Grade Level: Youth left the DJJ residential facility two or more years behind his/her appropriate age/grade level.
- Number of Prior Arrests: This includes all arrest events prior to admission to DJJ residential facility
- Disability: Youth is on record as having a cognitive, behavioral, or learning disability
- Months in DJJ Facility: Number of months from date of entry to date of exit from DJJ residential facility
- High Risk for Delinquency: Youth was released from a high or maximum security facility

Data Analysis

Logistic regression was used to estimate the causal effect of academic achievement on the likelihood of return to school and school attendance on the likelihood of rearrest. This technique effectively isolates the influence of one variable of particular interest while simultaneously holding constant the other variables in the model. The results presented include maximum-likelihood (ML) coefficients, standard errors (SE), odds-ratios, and levels of statistical significance. The ML coefficients can be interpreted as the degree of change in the outcome measure (in this case, the likelihood of occurrence) that is caused by change in the variable of interest. It is often more useful, however, to refer to the odds-ratio for a variable, which indicates the proportional increase or decrease in the likelihood of the outcome measure occurring and can easily be converted to a percentage increase/decrease by subtracting 1 from the odds-ratio statistic and multiplying by 100 (e.g., an odds-ratio of 0.680 indicates a 32% decrease in the likelihood of occurrence; an odds-ratio of 1.320 indicates a 32% increase). The ML coefficients, along with their corresponding indicator of statistical significance (represented here by one to three asterisks *), provides an at-a-glance indication of the direction of the relationship (a positive number indicates an increase in the likelihood of occurrence; a negative number indicates a decrease) and whether or not the relationship is robust enough to be more than just a product of chance. The SE is useful in calculating additional statistics but provides little additional information relevant here.

Bivariate (looking at two factors simultaneously) analyses were also performed on the outcome measures to produce a preliminary description of the differential likelihood of their occurrence for subgroups of youths in the cohort. These analyses involved the calculation of within-group percentages of youths who 1) returned to school or 2) were rearrested for each of the subgroups of theoretical relevance. These within-group percentages were then compared between groups, and a separate test of the statistical significance of the differences (Chi-square test) was done for each. Again, asterisks are used to indicate whether or not a difference is statistically significant and at what level of probability (*p*). A statistically significant difference indicates that the difference in the percentages between groups is big enough, given the number of individual cases in the groups, to be considered a *real* difference and not just a product of chance.

9.3 Results

As noted previously, the characteristics of the combined cohort are similar to those of the separate cohorts reported on in previous Annual Reports. Despite the similarities, descriptive statistics on the cohort as a whole are presented first in order to provide a context for further examination of differences among subgroups. These descriptive statistics are presented in Table 9.3-1.

Table 9.3-1: Selected Descriptive Statistics for Combined Cohort (N=9,698)

Characteristic/Outcome	Number of Juveniles	Percentage of Total Population
Male	8,208	84.6%
White	4,493	46.3%
Low SES	5,898	60.8%
Disability	3,529	36.4%
Below Age/Grade Level	4,896	50.5%
High Risk	2,891	29.8%
Diploma/GED while incarcerated	678	7.0%
Returned to public school following release	3,972	41.0%
Arrested within 1 year of release	4,164	42.9%

Tables 9.3-2 and 9.3-3 present the results of a multivariate analysis of the effect of academic achievement on the likelihood of return to school and school attendance on the likelihood of rearrest, both within one year of release from a DJJ residential facility. The advantage of a multivariate statistical technique, such as the logistic regression modeling used here, is that it allows for the estimation of the effect of a particular variable of interest on the outcome measure of interest when other relevant variables are held constant. In other words, it can be seen that academic achievement increases the likelihood that a youth will return to school following release (Table 9.3-2) and that this effect holds true, even when the sex, race, age, SES, and other characteristics of the individual are taken into account simultaneously. This finding supports the present hypothesis that gains in academic achievement while incarcerated improve a youth's chances of returning to public school once he/she is released, and replicates the findings presented in the 2004 Annual Report for the two cohorts examined separately.

Table 9.3-2: Results of Logistic Regression on Return to School

Variables	ML coefficient (SE)	Odds Ratio
Constant	12.055*** (0.664)	
Academic Achievement	0.266*** (0.034)	1.305
Male	0.251** (0.094)	1.285
Racial Minority	0.112 (0.071)	1.118
Low Socio-economic Status	0.660*** (0.072)	1.934
Age at Release	-0.742*** (0.040)	0.476
Below Age/Grade Level	-0.540*** (0.080)	0.583
Number of Prior Arrests	-0.015 (0.011)	0.985
Disability	0.304*** (0.070)	1.356
Months in DJJ Facility	-0.017** (0.006)	0.983
Released from High or Maximum Security Facility	-0.207** (0.078)	0.813
N	4,776	

*statistically significant at p<.05

**statistically significant at p<.01

***statistically significant at p<.001

Table 9.3-3: Results of Logistic Regression on Rearrest Within 12 Months of Release

Variables	ML coefficient (SE)	Odds Ratio
Constant	-2.448*** (0.325)	
Return to School with Above Average Attendance	-0.262*** (0.064)	.770
Male	0.831*** (0.069)	2.296
Racial Minority	0.329*** (0.048)	1.390
Low SES	0.081 (0.050)	1.084
Age at Release	-0.035 (0.019)	1.035
Below Age/Grade Level	-0.073 (0.055)	0.929
Number of Prior Arrests	0.226*** (0.008)	1.253
Disability	0.015 (0.049)	1.015
Months in DJJ Facility	-0.014*** (0.004)	0.987
Released from High or Maximum Security Facility	0.056 (0.054)	1.058
N	9,019	

*statistically significant at p<.05
 **statistically significant at p<.01
 ***statistically significant at p<.001

The results presented in Table 9.3-3 show that school attendance has a negative effect on rearrest within a year of release, which means that returning to school and maintaining above-average (cohort average) attendance significantly decreases the likelihood that a youth will be rearrested. As with the finding for return to school presented in Table 9.2-2, this finding supports the hypothesis that participation in school improves a youth’s chances for successful desistance from delinquency and replicates the findings presented in the 2004 Annual Report for the two cohorts examined separately.

Subgroup Analyses

The first post-release outcome explored for our subgroups was return to public school following release. By definition, this outcome does not apply to juveniles who received a diploma or GED

while in the residential educational program¹, so that educational achievement outcome is examined separately in Table 9.3-4. The post-release outcome of return to school for those juveniles who did not receive a diploma or GED by subgroup is presented in Table 9.3-5.

Table 9.3-4: Number of Youths and Percentage of Subgroups Who Received a High School Diploma or GED while Incarcerated by Subgroups (N=9,698)

Subgroup	Total Number of Youth	Number with Diploma/GED	Percentage with Diploma/GED
Females***	1,490	46	3.1%
Males	8,208	632	7.7%
White***	4,493	458	10.2%
Racial Minority	5,205	220	4.2%
Not Low SES***	3,800	379	10.0%
Low SES	5,898	299	5.1%
No Disability***	6,169	557	9.0%
Disability	3,529	121	3.4%
At or Above Age/Grade Level*	4,800	304	6.3%
Below Age/Grade Level	4,896	373	7.6%
Low Risk***	6,807	406	6.0%
High Risk	2,891	272	9.4%

*Between-group variation is statistically significant at p<.05.

***Between-group variation is statistically significant at p<.001.

¹ Note that these figures reflect data as reported by juvenile justice educational programs to the Florida Department of Education. Juveniles who complete the requirements for a diploma or GED while incarcerated but are awarded their diploma or GED by their “home” school are not included in these figures.

Table 9.3-5: Number of Youths and Percentage of Subgroups Who Returned to Public School within One Year of Release by Subgroups (N=9,020)

Subgroup	Total N	Number of Juveniles	Percentage of Total Population
Females	1,444	639	44.3%
Males	7,576	3,162	41.7%
White	4,035	1,670	41.4%
Racial Minority	4,985	2,131	42.8%
Younger than age 16***	2,492	1,739	69.8%
Age 16	2,185	1,132	51.8%
Age 17	2,232	702	31.5%
Age 18	1,766	209	11.8%
Age 19 or more	345	19	5.5%
High SES***	3,421	929	27.2%
Low SES	5,599	2,872	51.3%
No Disability***	5,612	2,167	38.6%
Disability	3,408	1,634	48.0%
At or Above Age/Grade Level***	4,496	2,657	59.1%
Below Age/Grade Level	4,523	1,143	25.3%
Low Risk***	6,401	2,925	45.7%
High Risk	2,619	876	33.5%

*Between-group variation is statistically significant at $p < .05$.

**Between-group variation is statistically significant at $p < .01$.

***Between-group variation is statistically significant at $p < .001$.

Table 9.3-6: Number of Juveniles and Percentage of Subgroups Who Was Rearrested Within One Year Of Release by Subgroups (N=9,698)

Subgroup	Total N	Number of Juveniles	Percentage of Total Population
Females***	1,490	408	27.4%
Males	8,208	3,756	45.8%
White***	4,493	1,586	35.3%
Racial Minority	5,205	2,578	49.5%
Younger than age 16**	2,499	1,002	40.1%
Age 16 or older	7,199	3,162	43.9%
High SES	3,800	1,586	41.7%
Low SES	5,898	2,578	43.7%
No Disability***	6,169	2,551	41.4%
Disability	3,529	1,613	45.7%
At or Above Age/Grade Level***	4,800	1,940	40.4%
Below Age/Grade Level	4,896	2,224	45.4%
Low Risk***	6,807	2,755	40.5%
High Risk	2,891	1,409	48.7%

*Between-group variation is statistically significant at $p < .05$.

**Between-group variation is statistically significant at $p < .01$.

***Between-group variation is statistically significant at $p < .001$.

The bivariate statistics shown in Tables 9.3-4, 9.3-5, and 9.3-6 indicate that there are significant differences between subgroups in the likelihood of receiving a high school diploma or GED diploma while incarcerated, returning to school within one year of release, and being rearrested within one year of release. Males are more than twice as likely as females and white youths are more than twice as likely as minority youths to receive a high school diploma or a GED diploma while incarcerated (Table 9.3-4). This same level of disparity holds true for High SES vs. Low SES and No Disability vs. Disability as well. The disparity is slightly less, but still statistically significant, for At or Above vs. Below Age/Grade Level and Low vs. High-Risk youths.

The figures for return to school show a similar pattern of disparity (Table 9.3-5) to that for receiving a high school diploma or GED diploma while incarcerated, with the notable exception of the difference between white and minority youths. While white youths are significantly more likely than minority youths to receive a high school diploma or GED diploma while incarcerated, there is virtually no difference in their respective likelihood of returning to school after release. For both groups, slightly less than half (44%) of the youths released from a DJJ residential program without a high school diploma or GED diploma returned to public school within one year of release.

This disappointing figure becomes somewhat less so when looked at separately for youths who are younger than 16 years of age (70% return to school) and youths who are 16, 17, 18, and 19 years of age or older when they are released from DJJ. In Florida, attendance in school is

mandatory for youths younger than 16 years of age, so the fact that 30% of those youths in our sample did NOT return to public school within one year of their release from DJJ is troubling; however, the fact that half (52%) of the 16-year olds released from DJJ returned to public school even though their attendance was not legally mandated, and a third (32%) of 17-year olds returned to public school indicates that all is not lost – in terms of education – for these seriously delinquent youths.

The findings for rearrest within one year of release (Table 9.3-6) show no surprises. As expected, rates of rearrest are significantly lower for females and whites and youths who do not have a disability, are at or above age/grade level, and who are released from low or moderate-risk facilities rather than high or maximum-risk facilities. The fact that there is not a statistically significant difference for low vs. not low SES youths is probably the most interesting finding presented in this table. While the measure of SES – whether or not the student has ever received free/reduced lunch -- is only a proxy, prior research has shown it to be a fairly reliable one. Prior research has also shown poverty and other measures of low SES to be highly correlated with crime and delinquency, so the finding of no significant difference for these two groups is unexpected and deserves further research.

What follows is an examination of the effect of academic achievement on return to school and school attendance on rearrest for the same subgroups identified previously. It is important to note that the question answered by these multivariate models is different from that answered by the bivariate comparisons previously. The latter indicates which of the two comparison groups was more or less likely to experience the outcome measure. The results of the multivariate models indicate whether or not the effect of the causal factor of interest on the outcome measure is stronger for one group than for the other.

In Tables 9.3-7 and 9.3-8, the ML coefficients, SE's, and odds ratios are only shown for the causal factor of interest – academic achievement and school attendance – even though the full regression models included all of the additional control variables as shown in Tables 9.3-2 and 9.3-3². A *z-score difference in ML coefficients* for each of the subgroup pairs is shown as well. This z-score, like the chi-square test discussed above, indicates whether or not the difference in the effect of the causal factor for the two subgroups is statistically significant (a real difference and not just a product of chance). A z-score of 1.645 or higher indicates that the difference is statistically significant at the $p < .05$ level (the probability is less than five percent that the difference is just a product of chance).

The results presented in Table 9.3-7 indicate a statistically significant difference in the effect of academic achievement on the likelihood of returning to school for youths with a disability vs. youths with no disability and for youth at high risk for delinquency vs. those at low risk. It appears that youths who do not have a disability benefit more from their academic achievement while incarcerated than youths who have a disability in terms of their likelihood of returning to school upon release and that youths at high risk for delinquency benefit more than students at low risk for delinquency. The fact that there is virtually no difference in the effect of academic achievement on return to school by sex, race, age, and SES categories indicates that academic

² Results for the full models, for each of the subgroups and each of the outcome measures, are available from the authors upon request.

achievement while incarcerated is equally beneficial for youths, regardless of the category into which they fall. There also appears to be no difference in the effect of academic achievement on return to school for youths who are at or above age/grade level and those who are below.

Table 9.3-7: Results for the Effect of Academic Achievement While Incarcerated on Return to School Within 12 Months of Release by Subgroup

Subgroup (N)	ML coefficient (SE)	Odds Ratio	z-score difference in ML coefficients
Females (755)	0.224* (0.088)	1.251	0.511
Males (4,021)	0.273*** (0.038)	1.313	
Whites (2,180)	0.234*** (0.051)	1.263	0.836
Racial Minorities (2,596)	0.292*** (0.047)	1.339	
Younger than 16 years of age (760)	0.223* (0.096)	1.249	0.446
16 or older (4,016)	0.269*** (0.038)	1.308	
High SES (1,948)	0.272*** (0.056)	1.313	0.239
Low SES (2,828)	0.255*** (0.044)	1.290	
No Disability (2,905)	0.318*** (0.046)	1.374	1.810*
Disability (1,871)	0.191*** (0.053)	1.210	
At or Above Age/Grade Level (2,405)	0.275*** (0.043)	1.316	0.325
Below Age/Grade Level (2,371)	0.251*** (0.060)	1.286	
Low/Med Security Level (3,261)	0.190*** (0.042)	1.209	2.817***
High/Max Security Level (1,515)	0.394*** (0.059)	1.483	

*statistically significant at p<.05
 **statistically significant at p<.01
 ***statistically significant at p<.001

Table 9.3-8: Results for the Effect of Return to School with Above-Average Attendance on Rearrest Within 12 Months of Release by Subgroup

Subgroup (N)	ML coefficient (SE)	Odds Ratio	Z-score difference in ML coefficients
Females (1,444)	-0.386* (0.182)	0.680	0.776
Males (7,575)	-0.235*** (0.069)	0.791	
Whites (4,034)	-0.186 (0.096)	0.831	1.063
Racial Minorities (4,985)	-0.323*** (0.086)	0.724	
Younger than 16 years of age (2,491)	-0.143 (0.096)	0.867	1.474
16 or older (6,528)	-0.334*** (0.087)	0.716	
High SES (3,421)	-0.295* (0.130)	0.744	0.267
Low SES (5,598)	-0.255*** (0.074)	0.775	
No Disability (5,611)	-0.235** (0.087)	0.791	0.540
Disability (3,408)	-0.305** (0.096)	0.737	
At or Above Age/Grade Level (4,496)	-0.250** (0.076)	0.779	0.210
Below Age/Grade Level (4,523)	-0.280* (0.121)	0.756	
Low/Med Security Level (6,400)	-0.223** (0.073)	0.800	0.983
High/Max Security Level (2,619)	-0.373** (0.134)	0.689	

*statistically significant at p<.05
 **statistically significant at p<.01
 ***statistically significant at p<.001

The results presented in Table 9.3-8 show even less variation between subgroup pairs than results for return to school that are presented in Table 9.3-7. According to these findings, there is no statistically significant difference in the magnitude of the effect of school attendance on the likelihood of rearrest for any of the subgroup pairs. The difference in magnitude by age group, however, approaches statistical significance (p<.10) and is large enough to deserve further attention. If this difference indeed holds true for the population as a whole, it means that for youths 16 years of age or older, who are not legally mandated to attend school, returning to

school has an even greater effect on their likelihood of subsequent arrest than it does for younger youths. This may be a product of self-selection, in that older youths have a choice about whether to return to school and that those who choose to return to school are the same youths who would be less likely to be rearrested regardless of school attendance. It may be a real difference in effect, however, which would mean that efforts to encourage a return to school for those older students would be especially well spent. The same may also be true for the racial difference shown in Table 9.3-8, where return to school serves as an even greater means of social control for minority youths than it does for white youths.

9.4 Summary Discussion

The findings for the combined cohort of a positive effect of academic achievement while incarcerated on the likelihood of a youth returning to school and an inhibitory effect of school attendance on the likelihood of a youth being rearrested replicate those reported previously for the separate cohorts and provide further support for additional research on the two cohorts combined into one. In addition, these findings provide solid evidence of the importance of academic achievement and school attendance in the life course of delinquent youths, which has implications for both criminological theory and juvenile justice and educational policy.

For policymakers and practitioners, some of the unexpected findings should be considered in their decision-making processes. The following are findings from the multivariate model of the likelihood of returning to school, which isolates the effect of any one individual factor while holding constant the effect of the other factors included in the model.

1. Delinquent males are significantly more likely than females to return to school upon release from a DJJ residential facility.
2. Delinquent youths of low SES are significantly more likely than other youths to return to school upon release from a DJJ residential facility.
3. Delinquent youths with cognitive, behavioral, or learning disabilities are significantly more likely than those without disabilities to return to school upon release from a DJJ residential facility.

Some of the *expected* findings, while no big surprise to anyone who is familiar with delinquents and delinquency research, are also worth noting as a reminder of which youths are consistently at a higher risk for not continuing their public school education and, therefore, at higher risk for persisting in crime and delinquency.

1. Delinquent youths who are more than a year behind their age/grade level are significantly *less* likely than youths who are at or above age/grade level to return to school upon release from a DJJ residential facility.
2. Delinquent youths released from a high or maximum-security facility are significantly *less* likely than youths released from a low or moderate security facility to return to school upon release from a DJJ residential facility.

Given the findings listed previously, it should also come as no surprise that in the bivariate analysis, youth who are male, white, *not* of low SES, and *not* disabled are significantly more likely than their subgroup counterparts to earn a high school diploma or GED diploma while incarcerated.

Overall, the findings for the multivariate subgroup analyses indicate that 1) incarcerated youths benefit from their academic achievement while incarcerated in terms of their relative likelihood of returning to public school upon release, regardless of their age, race, sex, or other characteristics and 2) these same youths benefit from school attendance following release in terms of their relative likelihood of rearrest. The notable exceptions to these overall findings of equally beneficial effects are the findings of a significantly greater effect of academic achievement on the likelihood of returning to school for youths with no disability vs. youths with a disability and youths at high risk for delinquency vs. those at a lower risk for delinquency. In addition, there is some evidence to suggest that older youths may benefit more from their school attendance when it comes to their likelihood of rearrest.