



EDUCATION OUTCOME CHARACTERISTICS OF STUDENTS ADMITTED TO JUVENILE DETENTION

PREPARED FOR EDUCATION RESEARCH AND DATA CENTER
WASHINGTON STATE OFFICE OF FINANCIAL MANAGEMENT



Administrative Office of the Courts
Washington Center for Court Research

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EXECUTIVE SUMMARY

This report describes the characteristics of students admitted to juvenile detention in 8th or 9th grade and examines whether being detained for any reason has adverse effects on education outcomes in adolescence and early adulthood. First, we compare detained students with their non-detained counterparts in regard to their background characteristics, living conditions, academic performance, and education attainment. Then, we examine whether being admitted to juvenile detention predicts specific outcomes: 1) high school graduation, 2) high school dropout, 3) earning a high school equivalency certificate (GED) for those who did not graduate high school, and 4) postsecondary enrollment (enrollment in four-year and two-year institutions are examined separately).

The study found that detained youth differed from non-detained students in many observable ways. In particular, compared to students who were not exposed to detention, detained students were disproportionately boys, poor¹, youth of color, over-age for a grade level, and had significant learning and/or behavioral problems that qualified them for special education and related services. For many detained students, these conditions were evident since 6th or 7^h grade, i.e., two years prior to their exposure to juvenile detention. Regardless of detention, this group of students was at heightened risk for many behavioral concerns that may impact their educational attainment.

Key findings from the descriptive analysis:

We found that detained students underperformed on most markers of educational achievement compared to their non-detained peers. Also, students who had a more intense involvement with detention, characterized by either longer exposure and/or multiple detention episodes, performed at lower academic levels relative to students with less intense involvement with juvenile detention:

1. Sixteen percent (16%) of detained students graduated from high school, compared to 72% of non-detained students. Among those who cumulatively spent more than a month in juvenile detention, 8% graduated.
2. Fifty-seven percent (57%) of detained students dropped out of high school, compared to 14% of non-detained students. Sixty-two percent (62%) of students who accumulated more than a month in detention dropped out.
3. Sixteen percent (16%) of detained students earned a GED certificate, in comparison to 2% of non-detained students.
4. Postsecondary enrollment (for both two-year and four-year colleges combined) among detained students was lower (37%) than among their non-detained peers (51%). The gap in college enrollment was particularly large for 4-year colleges. Only 2.2% of detained students attending a postsecondary institution were enrolled in a 4-year college as opposed to 26% of non-detained students.

¹ In this study, eligibility for Free and Reduced Price Lunch (FRPL) is used as a proxy measure for poverty. Eligibility for FRPL is frequently used by education researchers since it is generally available at the school level, while the poverty rate is typically not.

Key findings from the multivariate analysis:

1. Although detained students generally had lower levels of educational achievement, juvenile detention, after controlling for student background, differences in service needs, and previous academic performance, was only a weak predictor of whether a student earned a high school diploma, dropped out from high school, or earned a GED.
5. After accounting for differences in student background characteristics, service needs, and previous academic performance, the impact of detention on graduation, dropout status, and GED was comparable to the effect of poverty, homelessness, and school mobility.
6. After accounting for differences in student background characteristics, service needs, and academic performance, the factors that increased a likelihood of high school graduation and decreased a likelihood of dropout were the factors related to student academic success: 1) meeting standard in writing on 10th grade assessment, 2) 9th grade credit accumulation, 3) meeting standard in reading on 10th grade assessment, and 4) 9th grade GPA.
7. After controlling for student background, service needs, and academic preparedness, detention increased the likelihood of enrollment in a two-year college, but it was not predictive of enrollment in a four-year college. College enrollment was mostly dependent on the applicant's possessing a high school diploma (for four-year colleges) or GED (for two-year colleges).
8. The school performance of detained students indicates the need for further monitoring and better access to adequate educational services and social support, especially for students with risks similar to those of detained students.

IMPLICATIONS OF THE STUDY

The major study finding is that low graduation and high dropout rates among detained students are not easily explained by a single cause. A variety of interrelated factors affect a detained student's pursuit of a high school diploma, including pre-detention experiences of poverty, homelessness, high rates of school mobility, learning and/or behavioral problems, and service needs.

Given that a goal of U.S. educational policy² is to graduate every student, the fact that only 16% of students exposed to detention in 8th or 9th grade graduated from high school and only 15% earned a high school equivalence credential (GED), poses a significant challenge. These findings highlight the need for new and more effective approaches to improving outcomes for students who are at risk of being involved with juvenile detention or who have already been involved with detention.

We should continually monitor student data to identify students who are at risk academically and adjust practices to better meet these students' needs. This on-going monitoring is the way educators can determine whether their strategies are working for all students and which students need interventions. This project provides a basis for developing a plan for routine periodic reporting on education for justice involved students so that districts, schools, educators, juvenile courts, and other stakeholders can have access to an empirically-based perspective on current systems' performance and opportunities for improvement.

This study has some limitations which have to be pointed out. First, although the majority of counties in the state were included in the analysis, King County was unintentionally excluded from this analysis due solely to circumstances related to data sharing process. The extent to which our findings will replicate in King County requires additional investigation.

Second, although a comprehensive set of factors for explaining variations in students' education was included in the predictive models, measures of other potentially important variables such as absences and school disciplinary actions, were not available for this analysis. Future research should include investigation of these factors.

² <https://www.ed.gov/essa?src=rn>

Juvenile Detention

Juvenile detention centers are a type of locked custody—the juvenile equivalent of jail. Court-involved youth may be held in a detention facility either between the time of referral (from law enforcement, for example) and disposition, as part of a disposition (such as a sentence, as to a community program) or as a response to violation of sentencing conditions (probation violations).

Some youth are detained for technical violations of probation or status offenses, behaviors that would not be a crime if committed by an adult (e.g., running away, being truant, and being beyond parental control).

INTRODUCTION

In 2016, across Washington State counties (except Adams, Asotin, Ferry, Garfield, Lincoln, Pend Oreille, and Whitman Counties), 6,531 youth aged 10 to 17 were admitted to juvenile detention for any reason. The overall statewide detention rate was 9.3 per 1,000 eligible youth.³ Detained youth can spend anywhere from a few hours to a few months in a detention facility. The average length of stay in 2016 was 9.9 days, while the median length of stay was 3.2 days¹. In 2016, 23% of detention stays were for less than 24 hours, while about 32% were for seven days or longer. The vast majority of detained youth in Washington State are placed in one of the state's 21 county-operated juvenile detention facilities. Some detained youth, depending on their geographic location, can be placed in a privately-operated Eastern Washington facility, Martin Hall, or a detention facility in a neighboring state².

The question of whether physical separation of the detained youth from family, school, and community has adverse lasting effects on education has important policy implications. Although the literature contains examples of negative relationships between legal sanctions and education outcomes⁴, the precise question of whether juvenile detention has a negative impact on education outcomes in adolescence and early adulthood is largely unanswered. Further, there is little statewide information about the education needs of students admitted to detention – youth for whom the state is legally responsible. The lack of research on this topic reflects the limited availability of data that tracks both detention and education over time. As a result, the education needs of detained students have been largely invisible to educators and juvenile justice professionals. The longitudinal population-level administrative data available to us covers a period of at least two years before detention exposure to at least five years after. This means that we can show students' characteristics, experiences, and needs before they experienced detention as well as track their education outcomes over the next five years after detention.

This report describes the previously undocumented achievement gap between detained and other students. Better understanding of the relationship between detention and education outcomes may prompt better prevention and intervention efforts for students at greater risk of poor school outcomes. Juvenile courts need this information to improve the response to youth in detention. Policymakers need this information to make informed and appropriate policy decisions on behalf of students. Individual schools, districts, and statewide school systems need this information to improve their practices and programmatic responses to students' needs.

³ Gilman, A.B., & Sanford, R. (2017) Washington State Juvenile Detention 2016 Annual Report. Olympia, WA: Washington State Center for Court Research, Administrative Office of the Courts.

⁴ [1] Hannon, L., 2003. Poverty, delinquency, and educational attainment: Cumulative disadvantage or disadvantage saturation? *Sociological Inquiry* 73, 575–594; [2] Sweeten, G., 2006. Who will graduate? Disruption of high school education by arrest and court involvement. *Justice Quarterly* 23, 462–480; [3] Kirk, D. S. and Sampson, R. J. (2013). Juvenile arrest and collateral educational damage in the transition to adulthood. *Sociology of Education*, 86(1):36–62; [4] Hjalmarsson, R. (2008). Criminal justice involvement and high school completion. *Journal of Urban Economics*, 63(2):613–30; [5] Paul Hirschfield (2009). Another Way Out: The Impact of Juvenile Arrests on High School Dropout Sociology of Education, vol. 82, 4: pp. 368-393; [6] Leone, P. and Weinberg, L. (2012). Addressing the Unmet Educational Needs of Children and Youth in the Juvenile Justice and Child Welfare Systems. Washington, DC: Center for Juvenile Justice Reform, Georgetown Public Policy Institute: http://cjjr.georgetown.edu/wp-content/uploads/2015/03/EducationalNeedsOfChildrenandYouth_May2010.pdf

RESEARCH QUESTIONS

The study has three primary research questions:

1. How do the characteristics of detained students compare to those of non-detained students in the same grades?
2. Does being admitted to juvenile detention in 8th or 9th grade has a significant (negative) impact on students' educational achievements?
3. How are different qualities of detention episodes (e.g., types of detention, number of detention episodes, and length of detention exposure) associated with education outcomes?

DATA

This study uses student-level administrative education data housed in the Education Research and Data Center's (ERDC) P20W data warehouse that were matched and linked with juvenile court data housed in the Administrative Office of the Courts (AOC). In particular, data for this study came from the following reporting systems:

- Detention data were drawn from the Juvenile and Corrections System (JCS) housed in the AOC).
- Information about student demographics, school enrollment, and academic progress was derived from the Core Student Record System (CSRS) and the Comprehensive Education Data and Research System (CEDARS) at the Office of Superintendent of Public Instruction (OSPI).
- Information about student participation in OSPI programs and other background information was derived from the Core Student Record System (CSRS) and the Comprehensive Education Data and Research System (CEDARS) at OSPI.
- Student educational attainment after high school data were compiled from two sources:
 - ❖ The State Board for Community and Technical Colleges (SBCTC) provided General Educational Development (GED) completion data and enrollment data for public two-year institutions
 - ❖ Data for students who were enrolled in Washington public baccalaureate institutions came from the Public Centralized Higher Education Enrollment System (PCHEES).

STUDY METHODOLOGY

Students enrolled in 8th or 9th grade in Washington State public schools were the target population for this study. We used two student cohorts. Cohort 1 consisted of students enrolled in 8th or 9th grade during Academic Year 2010-2011 (AY10-11). This cohort was selected to ensure we could measure school performance, school exits through graduation or dropping out, and postsecondary enrollment patterns five years after exposure to detention in AY10-11. Cohort 2 consisted of students enrolled in 8th or 9th grade in AY15-16. The second cohort was selected because relevant attendance and school discipline data had become available for that cohort.

The Education Research and Data Center (ERDC) at the Washington State Office of Financial Management provided education data, including graduation information, student characteristics, and progress indicators in primary school⁵ as well as postsecondary enrollment. Detention data were drawn from the courts' Juvenile and Corrections System (JCS). This database includes information about juveniles admitted to detention such as date of admission, type of stay (pre-adjudication, post-adjudication, or both), length of stay, facility type, and date of exit as well as unique identifiers that allow individuals to be tracked throughout their passage across different stages in the judicial system. This database was used to ascertain whether a student had been exposed to detention. Students in Cohort 1 were identified as being exposed to detention if they had at least one detention stay at any point during AY10-11. Cohort 2 students were classified as being exposed to detention if they were admitted to detention at least once during AY15-16.

We prepared two analytical datasets, one for each cohort, which included education and detention data linked at the individual level, without direct identifiers. We were not able to obtain access to all courts' detention data for this study. The students enrolled in schools within jurisdictions without available detention data could not be included in this study, since we know little about their exposure to detention (see Appendix for a list of counties excluded from the analysis).

This research used two forms of analysis: (a) descriptive statistics and (b) binary logistic regression. Descriptive statistics were used to provide information about differences in characteristics and education outcomes between detained and non-detained students. Binary logistic regression was used to estimate the impact of detention and other factors on each of the following education outcomes: 1) graduation, 2) school dropout, 3) earning a GED certificate, and 4) postsecondary enrollment (enrollment in four-year and two-year institutions are examined separately) while controlling for a comprehensive set of factors for explaining variations in students' education.

Detailed results of the study are presented in the Appendix. Throughout the report, we use bar charts to distill the tabular data presented in the Appendix into visual form. Every figure included in the report is referenced to an appropriate table in the Appendix.

⁵ Each student must have only one school of primary responsibility designated at any point in time during the academic school year. In cases where a student attends more than one school simultaneously, the district determines which school shall report primary responsibility for the student's education.

STUDY POPULATION

This study uses two cohorts, defined by grade level and academic year. Cohort 1 encompasses students in grades 8 and 9 during AY10-11 and Cohort 2 encompasses students in grades 8 and 9 during AY15-16. After removing duplicate cases, cases with errors, and cases from areas (counties) for which detention data were not available, Cohort 1 contained 120,247 students and Cohort 2 included 120,758 students.

Matching school records with court records, we identified 2,853 students (or 2.4%) who were detained at least once in AY10-11, and 1,451 students (or 1.2%) who were detained in AY15-16 at least once. A drop in the number of students admitted in detention between AY10-11 and AY15-16 is reflective of the overall statewide decline in the number of youth referred to the juvenile court between 2010 and 2016⁶.

The minimum time of detention stay was 14.4 minutes and the maximum was 218 days, with an average length at 19.47 days. Experiences with detention were very similar among students in both cohorts. Roughly one-half of detained students had a single detention episode (51% to 54.9%). For those with a known type of detention, 40.2% to 43.2% were placed in detention before adjudication (or awaiting their court date), 25.5% to 29.5% were placed in detention after adjudication (serving a sentence or sometimes waiting for their placement in another facility or community-based program), and 26.4% to 26.8% were in detention before and after adjudication (see Table B).

For the purpose of this study, students who have been admitted to detention as 8th or 9th graders are called “detained” students, while students who have not been exposed to detention as 8th or 9th graders are called “non-detained,” regardless of any prior admissions to juvenile detention.

Table A: The prevalence of detention, by cohort

	Cohort 1 (N=120,247)		Cohort 2 (N=120,758)	
	N	Percent	N	Percent
Non-detained students	118,094	97.6%	119,307	98.8%
Detained students	2,853	2.4%	1,451	1.2%

Table B: Detention experiences among detention-involved students, by cohort

	Detained students Cohort 1 (N=2,853)		Detained students Cohort 2 (N=1,451)	
	N	Percent	N	Percent
Single detention episode	1,454	51.0%	797	54.9%
Multiple detention episodes	1,399	49.0	654	45.1
Pre-adjudication detention only	1,246	40.2	628	43.2
Post-adjudication detention only	842	29.5	377	25.9
Both pre- and post-adjudication detention	765	26.8	384	26.4
Unknown detention type	100	3.5	62	4.27

⁶ Gertseva, A. (2017) Gender Gap Trends in Court Referrals, 2001-2016. Olympia, WA: Center for Court Research, Administrative Office of the Courts.

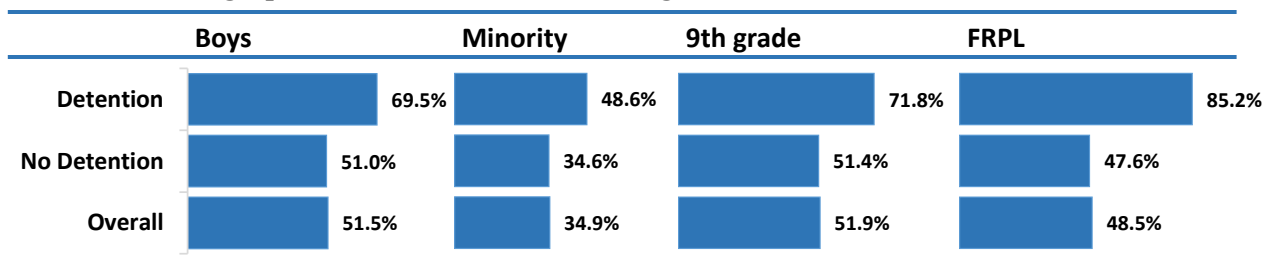
STUDY FINDINGS

FINDING 1: Detained students differed from their non-detained peers in regard to their background characteristics

1A: Demographic Characteristics

Figure 1 (see Appendix Tables 1 and 2) summarizes student demographic characteristics: gender, minority status, grade level, and eligibility for the Federal Free and Reduced Price Lunch Program (FRPL). These attributes were measured during the year of juvenile detention. Detained students were disproportionately boys, included a larger percentage of minority students, larger percentage of 9th graders than 8th graders, and were more likely to be from families with limited financial resources⁷.

Cohort 1: Demographic characteristics of 8th or 9th graders in AY10-11



Cohort 2: Demographic characteristics of 8th or 9th graders in AY15-16

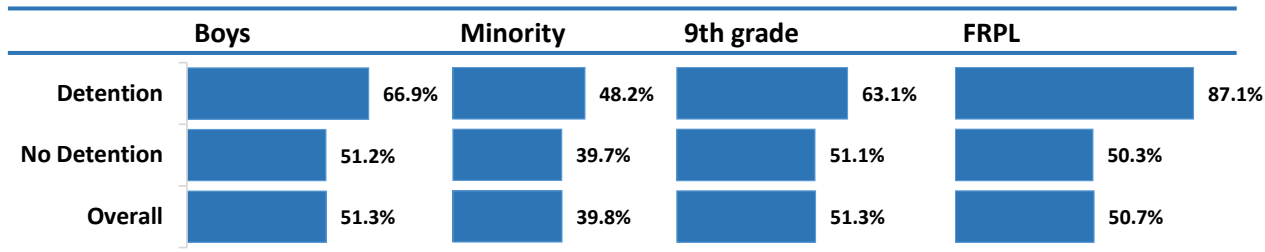


Figure 1: Background characteristics of detained and non-detained students measured during AY10-11 (Cohort 1) and during AY15-16 (Cohort 2). See Appendix Tables 1 and 2.

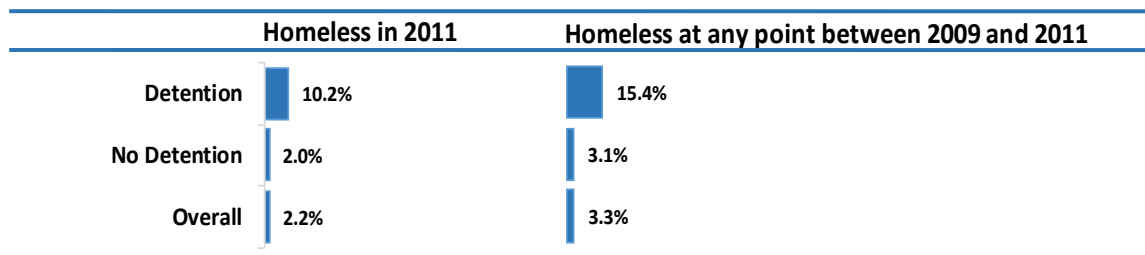
⁷ In this study, eligibility for Free and Reduced Price Lunch (FRPL) is used as a proxy measure for poverty. Eligibility for FRPL is frequently used by education researchers since it is generally available at the school level, while the poverty rate is typically not.

FINDING 2: Detained students were more likely than their non-detained peers to experience a wide variety of challenges and service needs

2A: Detention-involved students experienced high levels of homelessness

Figure 2 (see Appendix Table 1) displays the prevalence of homelessness among detained and non-detained students. Detained students, at 10.2% for Cohort 1, were more likely than their non-detained peers (at 2.2% for Cohort 1) to experience homelessness⁸ during the school year when they were admitted to detention⁹ as well as during a more extended period of time covering two years prior to, and including the year of, detention (15.4% vs. 3.1% for Cohort 1 and 24% vs. 5.3% for Cohort 2). Prevalence of homelessness was higher among students who cumulatively spent more than a month in detention (19.4% vs. 15.4 % for all detained students in Cohort 1 and 29.6% vs. 24% for all detained student in Cohort 2).

Cohort 1: Prevalence of homelessness



Cohort 2: Prevalence of homelessness

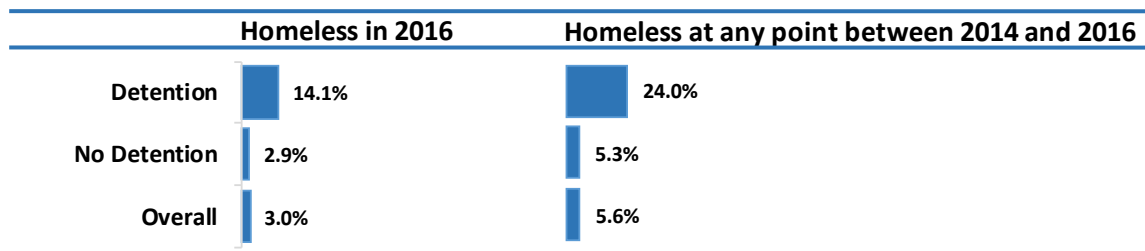


Figure 2: Prevalence of homelessness among detained and non-detained students. See Appendix Table 1.

⁸ Criteria for homelessness status are based on the McKinney–Vento Act, Section 725(2). This includes those living in shelters, double-upped, unsheltered, or in hotels/motels due to lack of alternative housing.

⁹ Not all school districts with homeless students are included into this comparison analyses due to missing detention data from a number of counties.

2B: Detention-involved students experienced high levels of school mobility

Figure 3 (see Appendix Table 3) shows the patterns of school mobility among detained and non-detained students in Cohort 1 during a year prior to detention and within a year of detention¹⁰. School mobility occurs when a student changes schools (including alternative, juvenile detention, or special education schools) for reasons other than promotion from middle to high school. Here we present the results for Cohort 1 only. The results for Cohort 2 can be found in Appendix Table 3.

Detained students were more likely than non-detained students to change schools and change them more often during AY10-11 (year of detention) as well as during the prior year. In Cohort 1, 71.7% of detained students made at least one non-promotional school change in AY10-11 (year of detention) as opposed to only 9.1% of their non-detained peers, and 22.3% of detained students experienced three or more school transitions within AY10-11 as opposed to only 0.2% of non-detained students.

Of all detained students, the highest levels of school mobility during AY10-11 (year of detention) occurred among students who cumulatively spent more than a month in detention (49.7% vs. 22.3% for all detained students in Cohort 1) (see Appendix Table 2).

Cohort 1: School mobility during AY10-11 (year of detention)

	No school moves	1 school move	2 school moves	3 or more school moves
Detention	28.3%	30.1%	19.3%	22.3%
No Detention	90.9%	7.9%	1.1%	0.2%
Overall	89.4%	8.4%	1.5%	0.7%

Cohort 1: School mobility during AY09-10 (year prior to detention)

	No school moves	1 school move	2 school moves	3 or more school moves
Detention	57.3%	24.4%	16.7%	8.3%
No Detention	92.5%	6.4%	0.5%	0.1%
Overall	91.7%	6.8%	0.7%	0.2%

Figure 3: Prevalence of single-year school mobility among detained and non-detained students in Cohort 1. See Appendix Table 3.

¹⁰This non-promotional school change can occur during the school year or in the summer between school years.

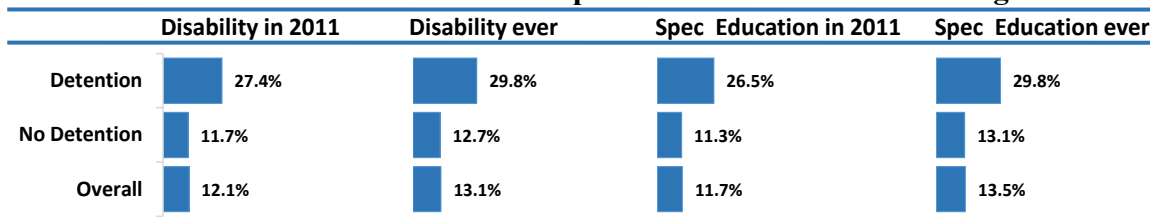
2C: Detained students were disproportionately affected by disabilities compared to their non-detained peers

Figure 4 (see Appendix Table 4) shows the prevalence of disabilities and special education services among students in the study. Detention-involved students, as a group, were twice as likely as their non-detained peers to a) have a documented disability and b) to be eligible for special education services during the year of detention as well as two years prior to and including the year of detention.

The most common disabilities among detained students were a specific learning disability, health impairments, and emotional/behavioral disability. These disabilities are often manifested in behaviors that can be interpreted as hostile, impulsive, or otherwise inappropriate by schools or judicial officers (e.g., detention officers). These could be reasons for determining a youth’s need for school disciplinary actions and/or admission to detention¹¹.

Of all detained students, the highest prevalence of disabilities was found among students who spent in detention for more than a month (35% vs. 29.8% for all detained students in Cohort 1) and among those with multiple detention stays (32% vs. 29.8% for all detained students in Cohort 1).

Cohort 1: Prevalence of disabilities and special education services during AY10-11



Cohort 2: Prevalence of disabilities and special education services during AY15-16

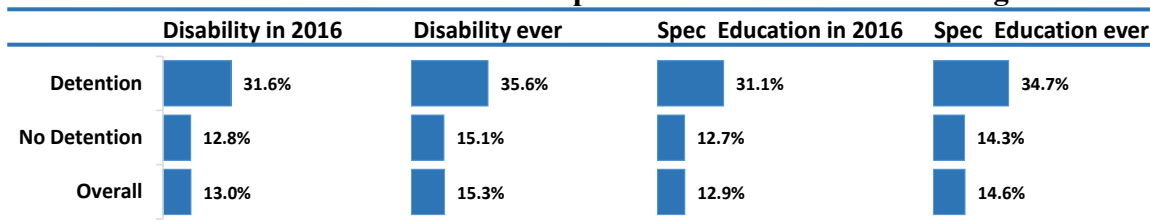


Figure 4: Percent of students with a disability and percent of students receiving special education services among detained and non-detained students. See Appendix Table 4.

¹¹ [1] Mallett, C., (2011). Seven Things Juvenile Courts Should Know About Learning Disabilities. Reno, Nev.: National Council of Juvenile and Family Court Judges; [2] Mallett, C., (2009). “The Disconnect Between Youths with Mental Health and Special Education Disabilities and Juvenile Court Outcomes.” Corrections Compendium, 33(5):1-34.

2D: Detention-involved students had higher levels of chronic absenteeism since 6th or 7th grade

Figure 5 (see Appendix Table 5) shows the percentage of Cohort 2 students¹² who missed 10 percent or more of a school year¹³ (i.e., at least 18 school days a year, or just two days every month), whether excused or unexcused, since they were enrolled in 6th or 7th grade. Chronic absenteeism differs from truancy because the latter only includes unexcused absences. Research shows that for student achievement, what matters is the number of school days a student misses, not the reason — that is why chronic absenteeism is a preferable measure¹⁴.

The results show that detained students were more likely than their non-detained peers to be chronically absent from school every year beginning with tracking in AY13-14. Absenteeism of detained students increased with the transition from middle to high school and it peaked, at 54.1%, during the year of detention, compared to 19.6% for non-detained students.

Of all detained students, chronic absenteeism in AY15-16 (year of detention) was the highest among those who spent in detention less than a day (61% vs. 54.1% for all detention-involved students) and it was the lowest among those who spent in detention for more than a month (40% vs. 54.1% for all detained students). A partial explanation could be strategies that schools in detention employ to promote attendance.

Cohort 2: Chronic absenteeism starting from AY13-14

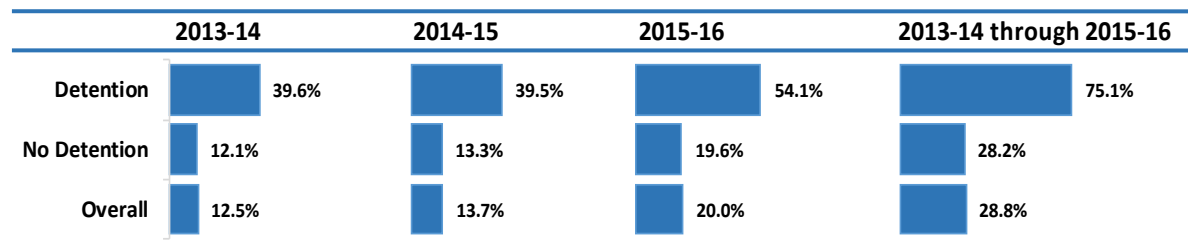


Figure 5: Chronic absenteeism among detained and non-detained students in Cohort 2 between AY13-14 and AY15-16. See Appendix Table 5.

¹² Data on school absences were not available for Cohort 1.

¹³ In Washington, each school district should have no less than 180 school days in a school year ([WAC 180-16-215](#))

¹⁴ Robert Balfanz and Vaughan Byrnes, “The Importance of Being in School: A Report on Absenteeism in the Nation’s Public Schools.” Baltimore: Johns Hopkins University Center for Social Organization of Schools, May 2012.

2E: Detained students have been disproportionately disciplined since 5th or 6th grade

Schools can respond to students’ behaviors that violate the school’s code of conduct by suspending or expelling them from classroom instruction or through other types of disciplinary actions, such as a referral to the principal’s office or detention. For the purposes of this study, we focus on suspensions and expulsions, only. Figure 6 (see Appendix Table 6) displays the percentage of detained and non-detained students assigned to at least one suspension and/or expulsion annually starting from AY12-13.

The results show that detained students were more likely than their non-detained peers to be disciplined every year beginning with tracking in AY12-13, or since they were in 5th or 6th grade. More than one half (56.5%) of detained students were suspended and/or expelled from school during AY15-16 (year of detention), as opposed to 8.6% for non-detained students.

The disparities in disciplining between two groups of students were found for each type of disciplinary actions (see Appendix Table 6). For example, in AY15-16 (year of detention), detained students were more likely than non-detained students to be expelled from school at least on one occasion (3.6% vs. 0.1%), to receive in-school suspension (15.3% vs. 2.8%), long-term suspension for more than ten days (9.4% vs. 0.6%), or short-term suspension for 10 days or less (49.4% vs. 6.6%).

Cohort 2: Prevalence of suspensions and/or expulsions starting from AY12-13

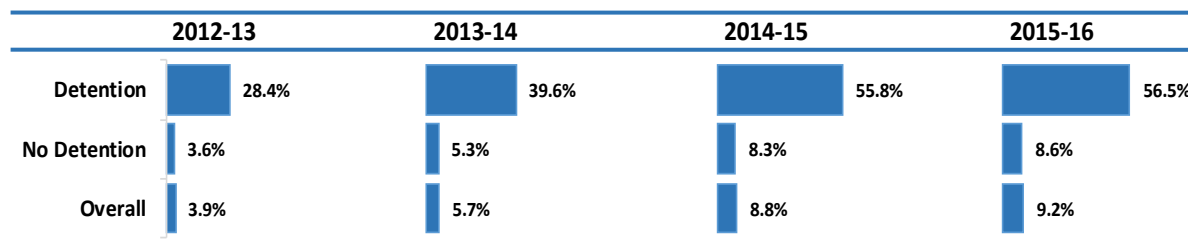


Figure 6: The percent of detained and non-detained students assigned to suspension and/or expulsion annually starting from AY12-13. See Appendix Table 6.

Education Outcome Characteristics of Students Admitted to Juvenile Detention

We also found that detained students experienced a greater likelihood of repeated involvement with the school disciplinary system than the comparison group (see Figure 7). Detained students were approximately ten times more likely than their non-detained peers to be suspended from school for up to ten consecutive school days (short-term suspension) three or more times annually starting from AY12-13 (three years prior to detention) through AY15-16 (year of detention).

Cohort 2: Three or more short-term suspensions applied since AY12-13

	2012-13	2013-14	2014-15	2015-16
Detention	8.3%	12.0%	19.0%	16.0%
No Detention	0.5%	1.0%	1.0%	1.0%
Overall	1.0%	1.0%	1.0%	1.0%

Figure 7: The percent of detained and non-detained students assigned to short-term suspension three or more times annually starting from AY12-13. See Appendix Table 6.

Figure 8 shows the percent of detained students being expelled and/or suspended during AY15-16 (year of detention), depending on the number of detention admissions they had, the type of admission, and the length of cumulative detention exposure. Students with multiple detention stays (61.8%) and detention stays shorter than a day (60.2%) had higher rates of school disciplinary involvement than students with a single detention admission (52.2%) and longer detention stays (57.5%). Finally, students with both types of detention stays (pre adjudication and post adjudication) had higher rates of school disciplinary involvement (62.5%) than students with only one type of detention stay (pre adjudication or post adjudication) (56.1% and 52%, respectively).

Cohort 2: Suspensions and/or expulsions in AY15-16, by detention experience

Number of admissions		Type of admission		Length of detention stay	
Single admission	52.2%	Preadjudicated only	56.1%	Less than a day	60.2%
Multiple admissions	61.8%	Postadjudicated only	52.0%	Day to two weeks	53.7%
Overall	56.5%	Both	62.5%	Two weeks to a month	59.3%
		Overall	56.7%	More than a month	57.5%
				Overall	56.5%

Figure 8: Percent of detained students being expelled and/or suspended, by the type of detention experience.

FINDING 3: Detained students lagged behind their non-detained peers on most markers of academic performance in high school

3A: Detained students had lower GPAs than their non-detained peers

When it comes to high school performance, the estimated cumulative Grade Point Average (GPA) is an indicator that first comes to mind. Although recent evidence, provided by the University of Chicago Consortium on School Research (CCSR)¹⁵ suggests that the 9th grade GPA is the best predictor of the 11th grade GPA, high school graduation, and college enrollment, we do not focus exclusively on 9th grade GPAs, but rather analyze the annual GPAs measured over the four years after, and including, the year of detention.

Figure 9 (see Appendix Table 7) shows the pattern of change in the mean cumulative GPAs of Cohort 1 students still in school¹⁶ starting with the year of detention (i.e., AY10-11). The results show that detained students, as a group, had consistently lower mean GPAs not only during the year of detention but also during the next four years. Although the number of students with available GPAs is decreasing from year to year due to a multitude of factors, including subsequent dropping out, transfer to a school district outside of Washington, results show that the disparities in mean GPAs between detained and non-detained students, still in school, were not a single-year phenomenon. They persisted over time.

Cohort 1: Mean GPAs starting from AY10-11

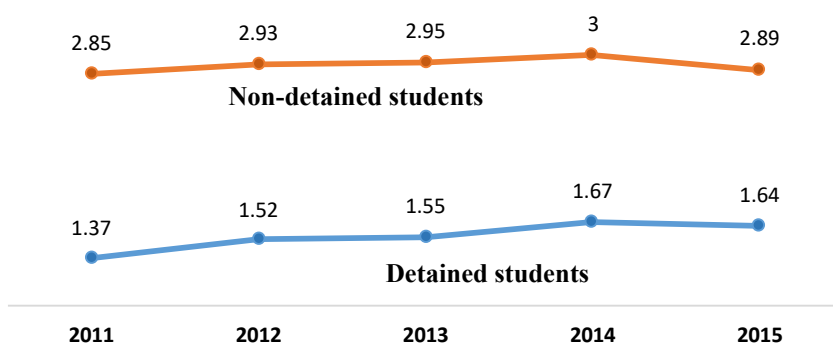


Figure 9: Mean GPAs of detained and non-detained students in Cohort 1. See Appendix Table 7.

¹⁵ <https://consortium.uchicago.edu/sites/default/files/publications/Predictive%20Power%20of%20Ninth-Grade-Sept%202017-Consortium.pdf>

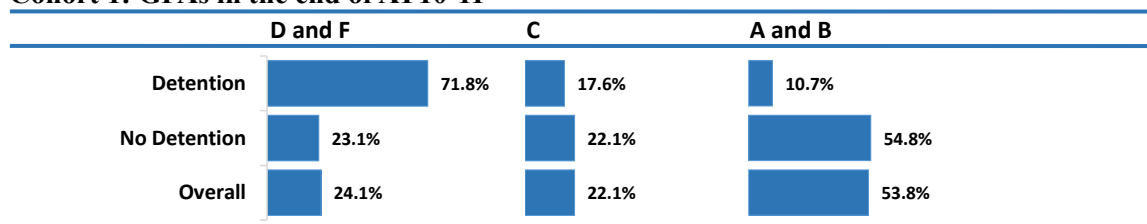
¹⁶ Overall 11,458 students have missing GPA for all the years. GPA was not available for 8th graders in 2010-11.

Education Outcome Characteristics of Students Admitted to Juvenile Detention

In addition to comparing detained and non-detained students based on their mean GPAs, we also compared them across three categories each corresponding to a letter grade from F to A. Figure 10 (see Appendix Table 8) presents the results of this analysis for the year of detention and a year following detention.

A disproportionately larger percentage of detained students had their GPAs falling into the lowest grade bracket, corresponding to grade levels F and D (F includes GPAs from 0.00 to 0.49 and D includes GPAs from 0.50 to 1.49). For example, at the end of the school year when detention was measured, 72% of detained students had their GPAs falling into the lowest grade range F to D, compared to only 23.1% of non-detained students having their GPAs in the same range. This gap in students' academic performance between the two groups of students did not decrease a year following detention. Among those still in school a year after detention, 62.8% of detained students had their GPA falling into the grade range F to D as oppose to only 16.5% of non-detained students having their GPAs in the same grade bracket.

Cohort 1: GPAs in the end of AY10-11



Cohort 1: GPAs in the end of AY11-12

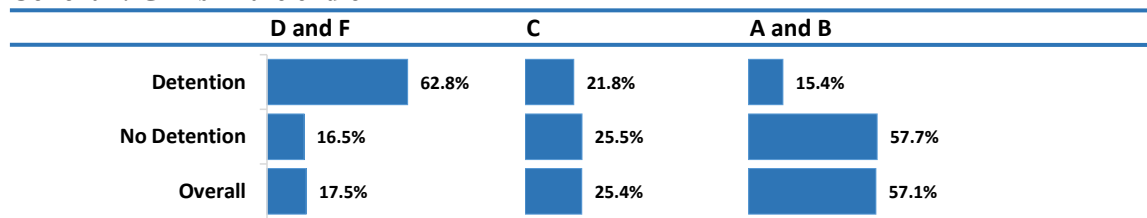


Figure 10: The percent of detained and non-detained students across three categories each representing a range of GPAs during AY10-11 and AY11-12. See Appendix Table 8.

Also, the type of the detention experience mattered. Approximately, 83% of students with multiple detention stays and 81% of students who spent more than a month in juvenile detention had GPAs of 1.49 or lower (F or D letter grade) by the end of the year of detention, compared to 72% of all detained students having the same GPAs (See Appendix Table 10A).

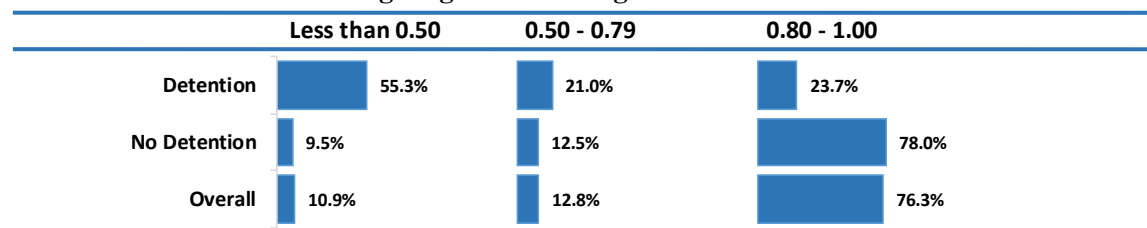
3B: Detained students disproportionately fell behind in 9th grade credit accumulation

The 9th grade course failure is a primary early warning indicator for dropping out of high school. The OSPI approach is to measure 9th grade failure by calculating the proportion of credits completed by a 9th grader against credits attempted in an academic year, or ratio of credits earned. This measure ranges between 0 and 1.0. If the credits ratio is equal to 1, that means a 9th grader completed all the attempted credits, and if it is less than 1, it means the 9th grader did not complete all the credits attempted. Figure 11 (see Appendix Table 9) displays the percentage of Cohort 1 detained and non-detained students within each of the three categories representing a range of credits ratio for each grade level separately¹⁷.

The results show that detained students disproportionately fell behind their non-detained peers in 9th grade’s credit accumulation regardless of whether they were detained as 8th graders or 9th graders. For example, more than a half (55.3%) of detained 9th graders completed less than one-half the credits attempted within the year of detention, compared to only 9.5% of non-detained 9th graders.

The 9th grade credit accumulation was a particular problem for students with prolonged exposure to detention. Approximately 61% of students with multiples detention stays and 64% of students with longer detention stays earned less than one-half of 9th grade credits, in comparison to 55.3% of all detained 9th graders in AY10-11.

Cohort 1: Credit ratios among 9th graders during AY10-11



Cohort 1: Credit ratios among 8th graders during AY11-12

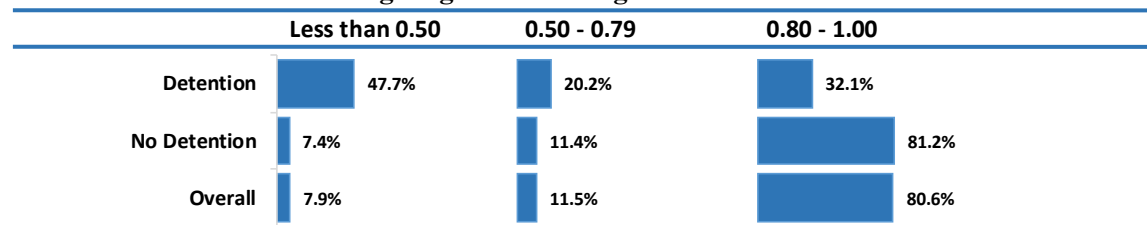


Figure 11: The percent of detained and non-detained students across three categories each representing a ratio of credits earned in AY10-11 and AY11-12. See Appendix Table 9.

¹⁷ For 9th graders, the estimated credits ratio are presented in the end of Academic Year 2010-11, when the exposure to detention was measured. For 8th graders, the estimated credits ratio was measured in the end of Academic Year 2011-12 (a year after the exposure to detention as measured), when they became 9th graders.

3C: Detained students were less likely to meet the 10th grade assessment standard in all subject areas

Figure 12 (see Appendix Table 10) presents the percentage of students passing the 10th grade assessment standard in reading, writing, science, and math among tested students in Cohort 1. Passing 10th grade tests demonstrates a basic understanding of English/language arts, science, and mathematics, and is a part of the requirements for graduation. Local, state, and national education agencies primarily rely on test scores as measures of student performance¹⁸.

Detained students were less likely than their non-detained peers to meet the 10th grade assessment standard in all subject areas, and less so in science and math. Only 36.8% of detained students scored at proficiency levels in science and even less (28.4%) reached proficiency in math, as oppose to 68% of non-detained students testing proficient in science and 56.8% testing proficient in math.

Students with multiple detention stays and students who spent more than a month in detention performed worse than all detained students in all disciplines, and they particularly lagged in passing the 10th grade assessment in science (27.8% and 26.6% vs. 36.8% for all detained students) and math (23.4% and 26.5% vs. 28.4% for all detained students) (See Appendix Table 10A).

Cohort 1: Meeting standards on the 10th grade tests

	Reading	Writing	Science	Math
Detention	65.2%	71.2%	36.8%	28.4%
No Detention	90.9%	93.8%	68.0%	56.8%
Overall	90.6%	93.5%	67.7%	56.4%

Figure 12: The percent of detained and non-detained students meeting standards on the 10th-grade tests in reading, writing, science, and math. See Appendix Table 10.

¹⁸ Allensworth, E.M., Gwynne, J.A., Moore, P., & de la Torre, M. (2014) Looking forward to high school and college: Middle grade indicators of readiness in Chicago Public Schools. Chicago, IL: University of Chicago Consortium on Chicago School Research.

FINDING 4: Detained students graduated at lower rate than did their non-detained peers

Figure 13 (see Appendix Table 10) displays the percentage of Cohort 1 students who graduated from high school. Detained students graduated at lower rate (15.8%) than their non-detained peers (72.1%). Of those detained students who graduated, 67.4% did so on time, while 20.3% had a delayed graduation (or receiving their high school diploma one to three years after their expected year of graduation). For comparison, the majority (93.1%) of non-detained students graduating from high school received their high school diploma on time, while only 4.9% had a delayed graduation.

Cohort 1: Graduation outcomes

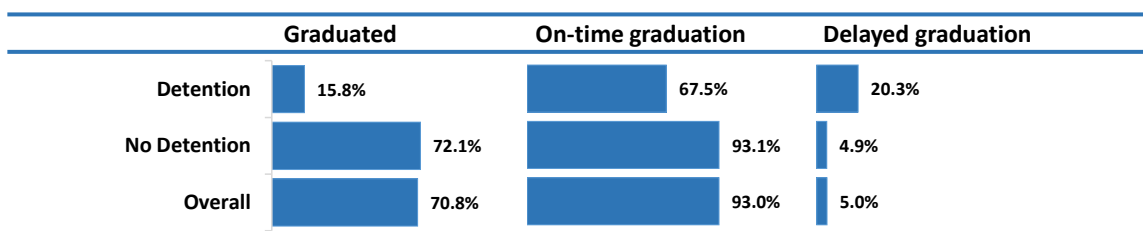


Figure 13: The percent of students in Cohort 1 who graduated from high school, graduated on-time, or had a delayed graduation. See Appendix Table 10.

Among detained students, graduation rates varied from a high of 23.6% for students staying in detention for less than a day to a low of 7.8% for students who stayed in detention for more than a month (see Appendix Table 11).

Cohort 1: Graduation outcomes, by detention experience

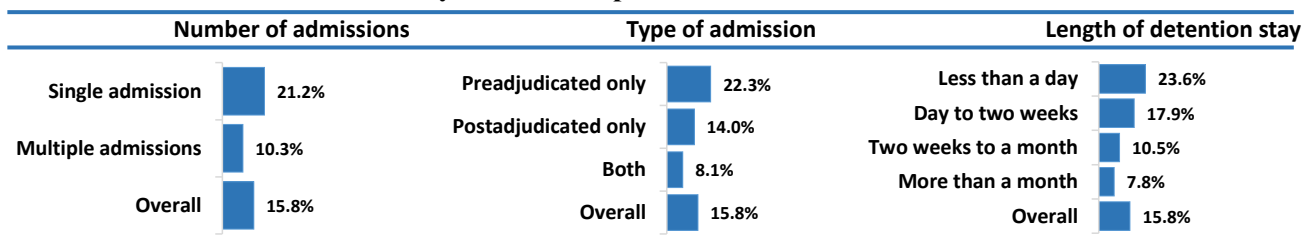


Figure 14: The percent of detained students who graduated from high school, by detention experience. See Appendix Table 11.

4A: Detention decreased the likelihood of graduation even after controlling for students' demographics and previous academic performance, but its effect was small

Table 14 in the Appendix presents the results of four binary logistic regression models sequentially built to explore how the impact of juvenile detention on graduation changes, if changes at all, as additional factors are added in the model. This approach was used to account for differences in characteristics between detained and non-detained students. Three blocks of variables were subsequently added to the model including only juvenile detention: 1) student demographic characteristics, 2) service needs and 3) academic performance. With each successive addition of the variables, the negative impact of juvenile detention on high school graduation decreased from large in Model 1 (OR=.073)¹⁶ to small in Model 4 (OR=.72).

Figure 15 presents odds ratios for each factor which was found significant in the Model 4, which included all variables used in the analysis (see Appendix Table 14). An odds ratio > 1, (blue bars) indicates that exposure to the factor was associated with higher odds of graduation. An odds ratio < 1, (brown bars) indicates that the exposure to the factors was associated with lower odds of graduation.

After controlling for students' demographics, service needs, and previous academic performance, we found that detention, all other conditions being equal, decreased students' likelihood of graduation (odds ratio =0.72) but its effect was small.¹⁹ In percentage terms, students who were exposed to detention were 28% less likely than their non-detained peers to graduate from high school.

The impact of detention was comparable to the impact of other variables that decreased the likelihood of graduation: 1) being an older student (OR=.74), 2) living in poverty (measured by eligibility for FRPL) (OR=.75), 3) changing schools (OR=.77), 4) experiencing homelessness (OR=.80), and 5) being a male (OR=.90).

The factors that increased a likelihood of high school graduation were the factors related to student academic success: 1) meeting standard in writing on 10th grade assessment (OR=2.16), 2) 9th grade credit accumulation (OR=2.02), 3) meeting standard in reading on 10th grade assessment (OR=1.70), and 4) 9th grade GPA (OR=1.55). This means that students have a much better chance of earning a high school diploma if they have a passing score on the 10th grade assessments in reading and writing, stay on track with credit accumulation in 9th grade, and maintain higher GPA in 9th grade.

¹⁹ Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0. *Source: Lipsey & Wilson. Practical Meta-Analysis. Thousand Oaks, CA: Sage Publications; 2001.*

Factors associated with graduation

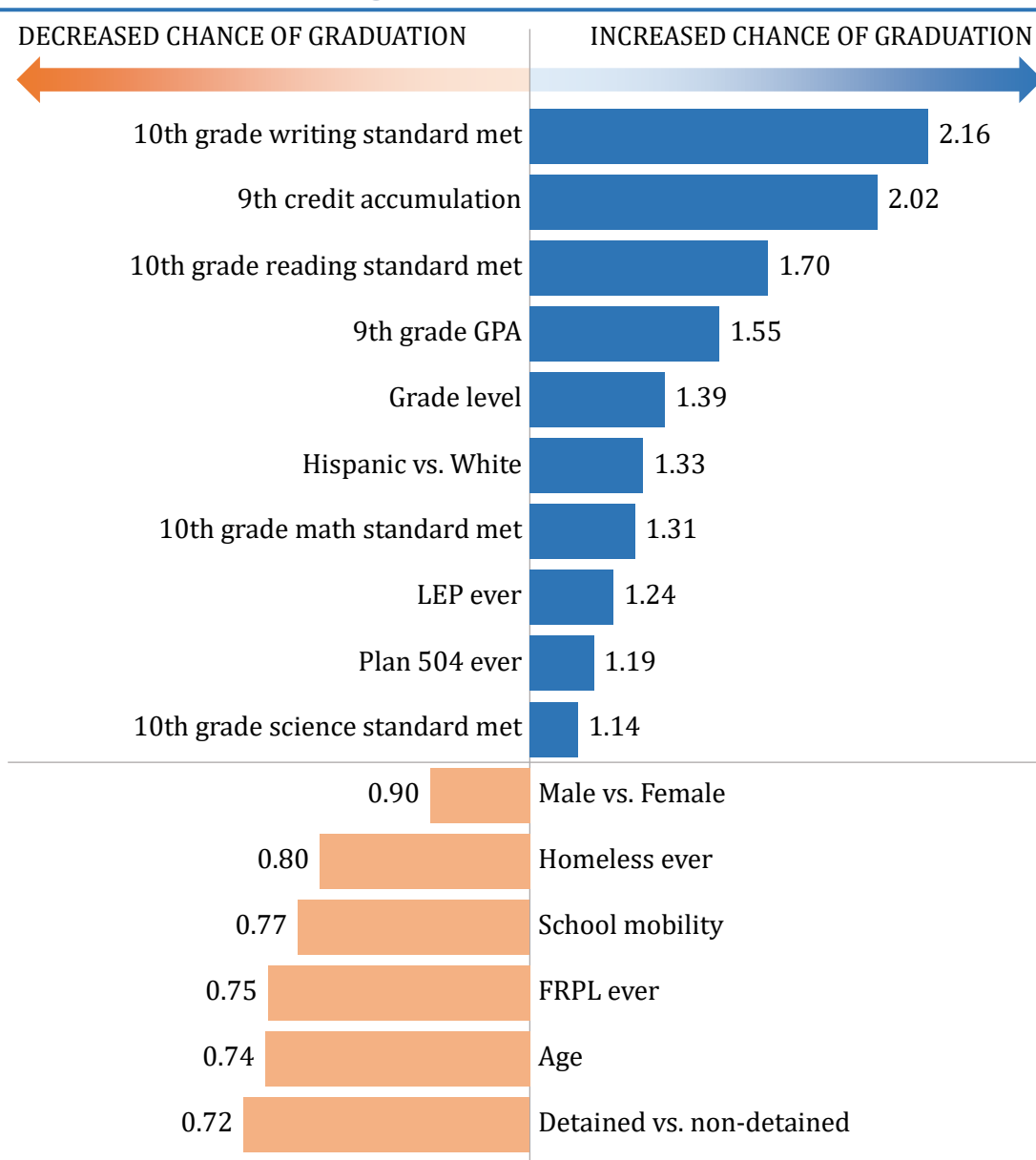


Figure 15: Odds ratio of graduation associated with detention and other significant predictors. See Appendix Table 14. An odds ratio > 1 indicates that exposure to the factor was associated with higher odds of graduation. An odds ratio < 1 indicates that the exposure to the factor was associated with lower odds of graduation. Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0 (Lipsey & Wilson, 2001).

FINDING 5: Detained students dropped out at higher rate than did their non-detained peers

Figure 16 (see Appendix Table 10) displays the percentage of Cohort 1 students who dropped out, disappeared (i.e., probable dropouts), and earned an equivalency diploma (e.g. GED). Detained students dropped out at higher rate (56.8%) than their non-detained peers (13.8%). Nearly nineteen percent (18.5%) of detention-involved students disappeared from school records (i.e. probable dropouts) compared to 8% of non-detained students. Detained students earned a GED at higher rate (15.7%) than did their non-detained peers (2.4%).

Cohort 1: Dropout rates and earning a GED certificate

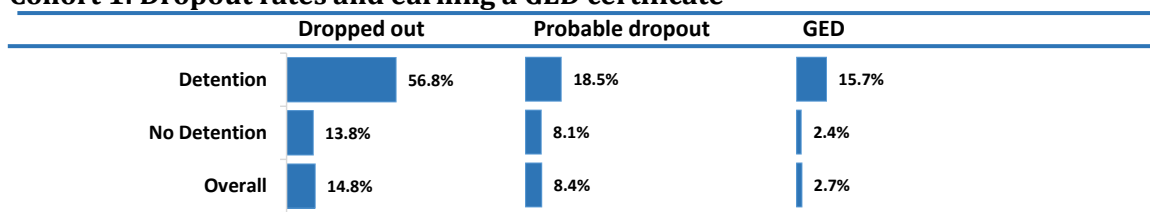
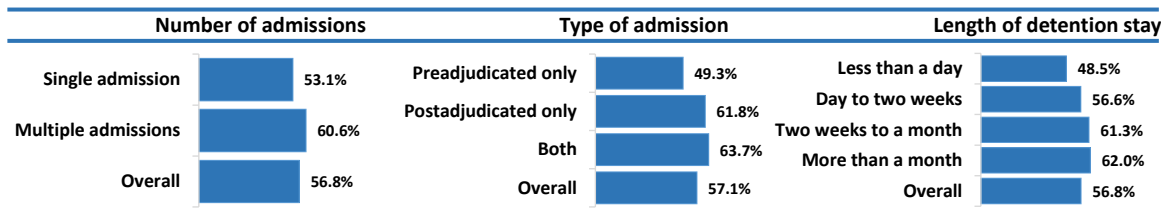


Figure 16: The percent of students in Cohort 1 who dropped out, disappeared, or earned a GED. See Appendix Table 10.

Among detained students, dropout rates varied from a high of 63.7% for students who were detained both prior and after adjudication to a low of 48.5% for students who spend in detention less than a day. The rates of earning a GED varied from a high of 23.8% for students who spent more than a month in detention to a low of 7.8% for those who spent in juvenile detention less than a day (see Figure 17).

Cohort 1: Dropout rates and detention experiences



Cohort 1: Earning a GED certificate and detention experiences

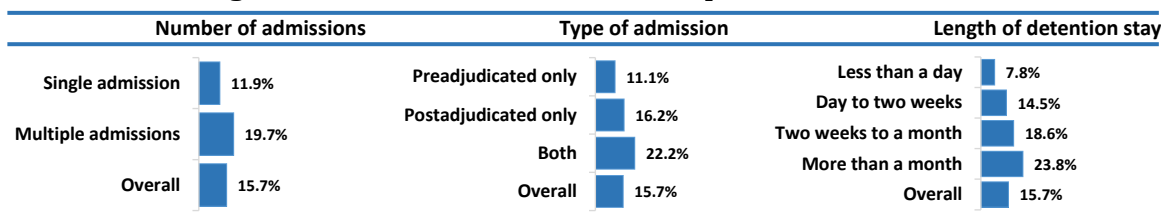


Figure 17: The percent of detained students who dropped out and earned a GED certificate, by detention experience. See Appendix Table 11.

5A: Detention increased the likelihood of high school dropout even after controlling for students' demographics and previous academic performance, but its effect was small

Table 15 (see Appendix) presents the results of four binary logistic regression models sequentially built to explore how the impact of juvenile detention on high school dropout changes as additional variables are added in the model. With each successive addition of the variables, the impact of juvenile detention on dropout decreased from large in Model 1 (OR=8.58)¹⁶ to small in Model 4 (OR=1.69).

Figure 18 displays a list of significant predictors of high school dropout in the Model 4, which included all variables (see Appendix Table 15). Detention (independent of other variables) increased students' likelihood of dropout (odds ratio =1.69), but its effect was small. The impact of detention was comparable to the impact of other variables that increased the likelihood of high school dropout: 1) living in poverty (OR=1.46), 2) being older (OR=1.39), 3) experiencing homelessness (OR=1.32), 4) being a male (OR=1.19), and 5) changing schools (OR=1.18).

The factors that significantly decreased the likelihood of dropout were related to academic success of students: 1) meeting standard in writing on 10th grade assessment (OR=0.53), 2) 9th grade GPA (OR=0.57), 3) 9th grade credit accumulation (OR=0.57), and 3) meeting standard in reading on 10th grade assessment (OR=0.61). African American, Hispanic, and Asian students were less likely to drop out than White students. Having a disability, receiving LEP services or a Plan 504 were also found to lower the chances of dropout.

5B: Detention increased the likelihood of earning a GED even after controlling for students' demographics and previous academic performance, but its effect was small

Table 16 (see Appendix) presents the results of binary logistic regression models predicting whether a student, who did not graduate high school, earned a general equivalency diploma (GED)²⁰. Figure 19 displays a list of significant predictors of earning a GED. We found that detention increased students' chances to earn a GED certificate when controlling for students' demographics and academic performance, but its effect was small (OR=1.92). The impact of detention was comparable to the impact of other variables that increased the likelihood of earning a GED: 1) being enrolled in 9th grade during the year of detention (OR=1.65), 2) being older (OR=1.61), 3) meeting standard in reading on 10th grade assessment (OR=1.6), 4) being a male (OR=1.32), and 5) changing schools (OR=1.31).

The factors that decreased the likelihood of earning a GED include: 1) having a higher 9th grade GPA, 2) be on track with 9th grade credit accumulation, and 3) being proficient in writing. Students with a disability and LEP students were less likely to earn a GED compared to students without these attributes. Hispanic and African American students were less likely to earn a GED than White students.

²⁰ In this study, only 2.4% of non-detained students earned a GED as opposed to 15.7% of detained students.

Factors associated with high school dropout

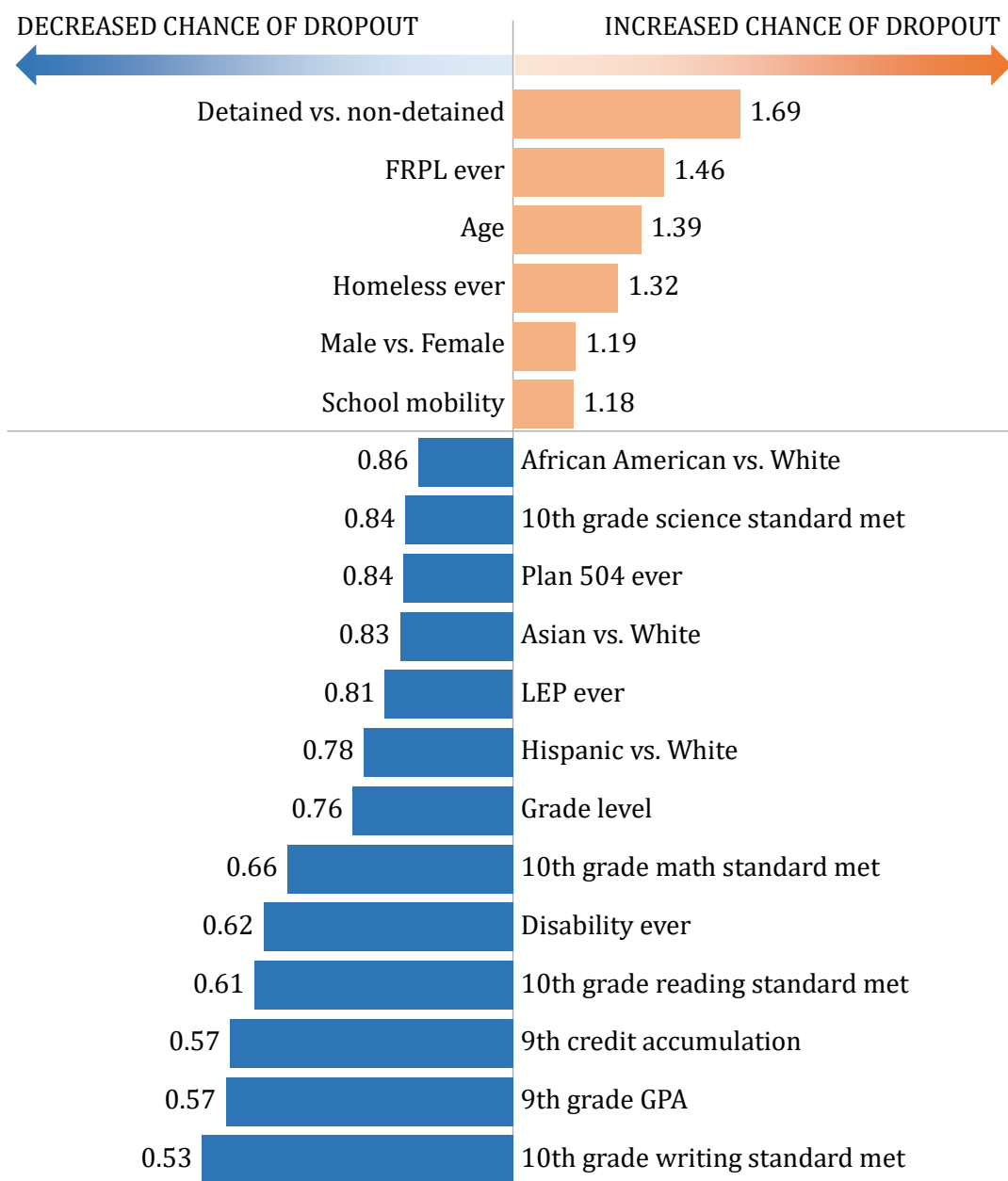


Figure 18: Odds ratio of dropout associated with significant predictor variables. See Appendix Table 15. An odds ratio > 1 indicates that exposure to the factor was associated with higher odds of dropout. An odds ratio < 1 indicates that the factor was associated with lower odds of dropout. Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0 (Lipsey & Wilson, 2001).

Factors associated with earning a GED

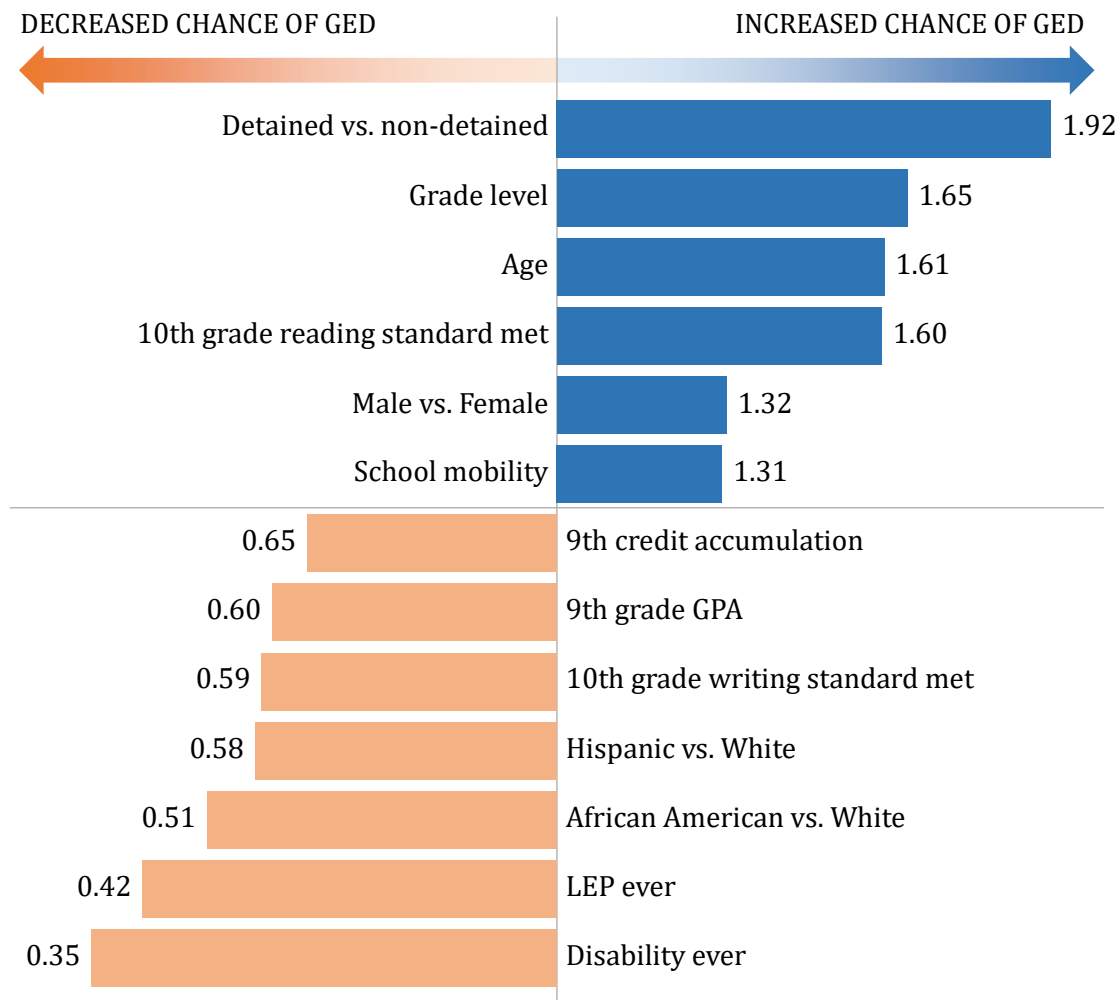


Figure 19: Odds ratio of GED associated with detention and other significant predictors. See Appendix Table 16. An odds ratio > 1 indicates that exposure to the factor was associated with higher odds of earning a GED. An odds ratio < 1 indicates that the factor was associated with lower odds of earning a GED. Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0 (Lipsey & Wilson, 2001).

FINDING 6: Detention-involved students were less likely to be enrolled in a postsecondary institution

Figure 20 (see Appendix Table 10) presents the patterns of enrollment in a postsecondary (PS) institution among Cohort 1 students in the study. College enrollment (for both two-year and four-year colleges combined) was less likely among detained students (36.6%) than their non-detained peers (50.9%). The gap in college enrollment was particularly acute for four-year colleges. Only 0.8% of detained students were enrolled in a 4-year college as oppose to 13.4% for non-detained students.

Postsecondary enrollment rates (for both two-year and four-year colleges combined) varied by type of detention experience (see Appendix Tables 11) from a high of 41.3% for students who cumulatively spent more than a month in detention to a low of 32% for those were detained after adjudication.

Cohort 1: Postsecondary enrollment

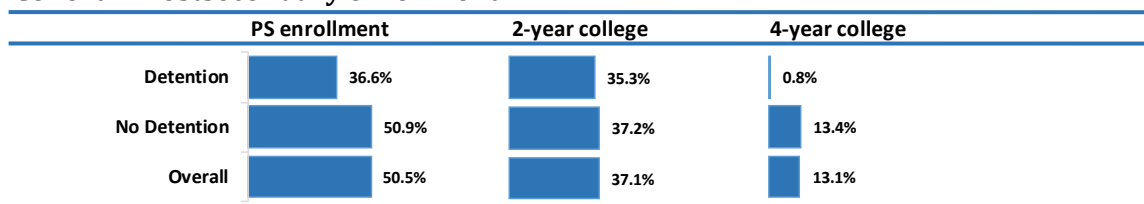


Figure 20: The percent of detained and non-detained students with postsecondary enrollment. See Appendix Table 10.

6A: Detention increased the likelihood of enrollment in a two-year college, but it was not predictive of enrollment in a four-year college after controlling for students’ demographics and academic preparedness

The results of binary logistic regression models predicting whether a student involved with juvenile detention was enrolled in a PS institution are presented in Table 17 (two-year colleges) and Table 18 (four-year colleges). Figure 21 displays a list of significant predictors of enrollment in a two-year college and Figure 22 displays a list of significant predictors of enrollment in a four-year college. After controlling for students’ demographics and academic preparedness, detention (independent of other variables) increased students’ chances to enroll in a two-year institution, but it did not predict students’ chances to enroll in a four-year institution (this is because only a handful of detained students (0.8%) were enrolled in a four-year college).

College enrollment was mostly dependent on the applicant’s possessing a high school diploma (for four-year colleges) or GED (for two-year colleges). This means that students have a much better chance of enrollment in college if they have high school diploma or a GED certificate.

Factors associated with enrollment in a two-year college

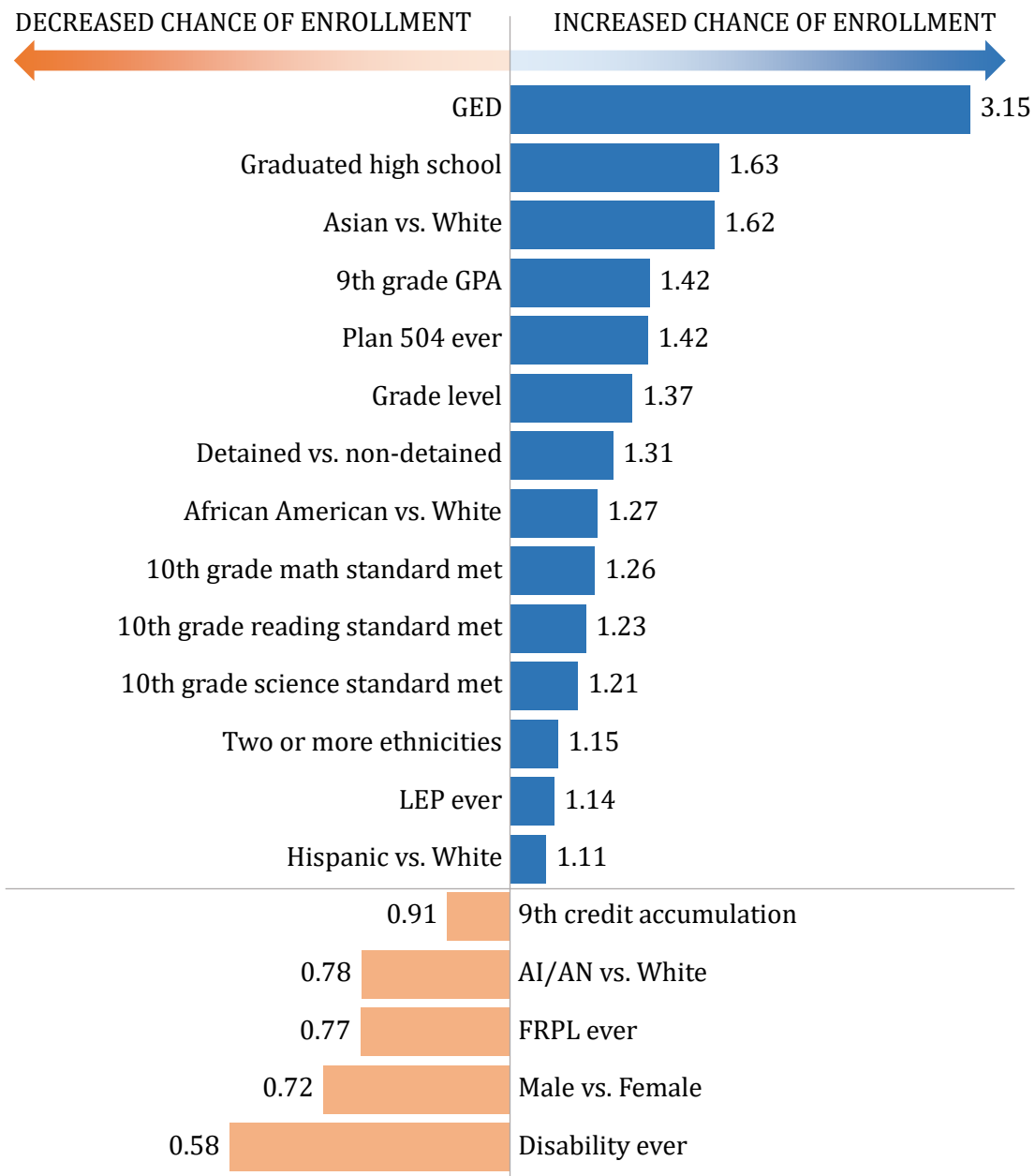


Figure 21: Odds ratio of dropout associated with significant predictor variables. See Appendix Table 17. An odds ratio > 1 indicates that exposure to the factor was associated with higher odds of enrollment in a two-year college. An odds ratio < 1 indicates that the exposure to the factor was associated with lower odds of enrollment in a two-year college. Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0.

Factors associated with enrollment in a four-year college

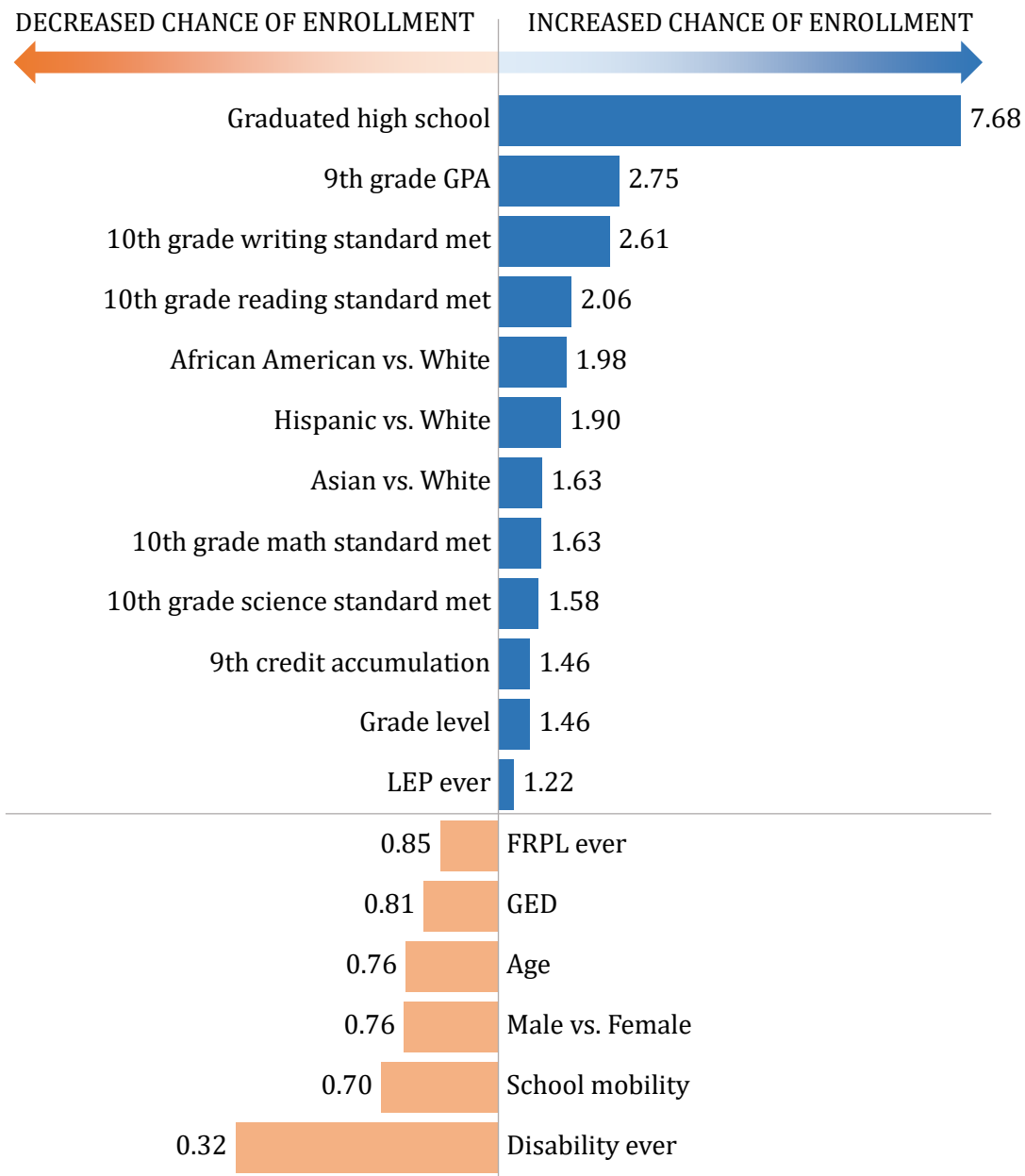


Figure 22: Odds ratio of dropout associated with significant predictor variables. This information is also presented in Table 18 in Appendix. An odds ratio > 1 indicates that exposure to the factor was associated with higher odds of enrollment in a four-year college. An odds ratio < 1 indicates that the exposure to the factor was associated with lower odds of enrollment in a four-year college. Odds ratios were interpreted as the measure of effect size using the convention 1.48 small, 2.48 medium, and 4.28 large effect, for odds ratios greater than 1.0, and 0.68 small, 0.40 medium, and 0.23 large, for odds ratios less than 1.0.

Appendix

In Academic Year 2010-2011, detention data were not available for the following counties:

Adams
Asotin
Ferry
Garfield
King
Klickitat
Mason
Pacific
Pend Oreille
Wahkiakum
Whitman

In Academic Year 2015-2016, detention data were not available for the following counties:

Adams
Asotin
Ferry
Garfield
King
Klickitat
Lincoln
Pend Oreille
Whitman

Appendix

Table 1. Personal and demographic characteristics of students, by cohort.

	Cohort 1						Cohort 2					
	Detention (N=2,853)		No Detention (N=118,094)		Total (N=120,947)		Detention (N=1451)		No Detention (N= 119,037)		Total (N=120,758)	
	N	%	N	%	N	%	N	%	N	%	N	%
Gender												
Male	1,982	69.5%	60,255	51.0%	62,237	51.5%	971	66.9%	61,038	51.2%	62,009	51.3%
Female	871	30.5%	57,839	49.0%	58,710	48.5%	480	33.1%	58,269	48.8%	58,749	48.7%
Race												
White	1,467	51.4%	77,243	65.4%	78,710	65.1%	752	51.8%	71,892	60.3%	72,644	60.2%
Black/African American	255	8.9%	4,139	3.5%	4,394	3.6%	112	7.7%	3,712	3.1%	3,824	3.2%
AI/AN ²¹	163	5.7%	2,325	2%	2,488	2.1%	63	4.3%	2,067	1.7%	2,130	1.8%
Asian	29	1.0%	5,236	4.4%	5,265	4.4%	16	1.1%	5,031	4.2%	5,047	4.2%
NH/OPI ²²	12	0.4%	900	0.8%	912	0.8%	*	*	*	*	*	*
Hispanic/Latino	758	26.6%	22,207	18.8%	22,965	19%	405	27.9%	27,770	23.2%	28,105	23.3%
Two or more races	167	5.9%	6,016	5.1%	6,183	5.1%	91	6.3%	7,745	6.5%	7,836	6.5%
Nor provided	*	*	*	*	*	*	*	*	*	*	*	*
Age												
11-12	14	0.5%	1,406	1.2%	1,420	1.2%	*	*	*	*	*	*
13-15	2479	86.9%	114,304	96.8%	116,783	96.6%	1,261	86.9%	111,663	93.6%	112,897	93.5%
16 or older	360	12.6%	2,377	2.0%	2,737	2.3%	190	13.1%	7,661	6.4%	7,851	6.5%
Homelessness status												
Homeless	290	10.2%	2,331	2.0%	2,621	2.2%	204	14.1%	3,432	2.9%	3,636	3.0%
Homeless ever	439	15.4%	3,609	3.1%	4,048	3.3%	348	24%	6,364	5.3%	6,712	5.6%
Grade Level												
8th grade	804	28.3%	57,363	48.6%	58,167	48.1%	535	36.9%	58,313	48.9%	58,848	48.7%
9 th grade	2,049	71.8%	60,731	51.4%	62,780	51.9%	916	63.1%	60,994	51.1%	61,910	51.3%
History of prior detention												
Prior detention	1,146	40.2%	1,382	1.2%	2,528	2.1%	489	33.7%	602	0.5%	1,091	0.9%
Total	2,853	2.4%	118,094	97.6%	120,947	100%	1,451	1.2%	119,037	98.8%	120,758	100%

Note: “Homelessness is measured during a year of detention; “Homeless ever” is measured two years prior to and including the year of detention exposure; “History of prior detention” is measured at any point prior to Academic Year 2010-11 for Cohort 1 and Academic Year 2015-16 for Cohort 2.

²¹ AI/AN- American Indian/Alaskan Native

²² NH/OPI-Native Hawaiian/Other Pacific Islander

Appendix

Table 2. School mobility and students characteristics of students with varying length of detention exposure, by cohort.

	Cumulative length of detention exposure									
	Less than a day		More than a day but less than 2 weeks		2 weeks to a month		More than a month		Total	
	N	%	N	%	N	%	N	%	N	%
Cohort 1	567	19.9%	1,286	45.1%	382	13.4%	618	21.7%	2,853	100%
School mobility <u>during</u> a year of detention exposure										
No move	308	54.3%	371	28.8%	65	17%	63	10.2%	807	28.3%
One move	186	32.8%	443	34.4%	110	28.8%	121	19.6%	860	30.1%
Two moves	54	9.5	290	22.6%	80	20.9%	127	20.6%	551	19.3%
Three or more moves	19	3.4%	182	14.2%	127	33.2%	307	49.7%	631	22.3%
Special Education ever	151	26.6%	354	27.5%	133	24.8%	211	34.1%	849	29.8%
Disability ever	148	26.1%	355	27.6%	132	34.6%	214	34.6%	849	29.8%
Homelessness ever	71	12.5%	178	13.8%	70	18.3%	120	19.4%	439	15.4%
FRPL ever	489	86.2%	1171	91.1%	351	91.9%	587	95%	2598	91.1%
LEP ever	44	7.8%	91	7.1%	21	5.5%	58	9.4%	214	7.5%
Cohort 2	332	23%	711	49%	182	12.5%	226	15.6%	1,451	100%
School mobility <u>during</u> a year of detention exposure										
No move	160	48.2%	205	28.8%	27	14.7%	23	10.2%	415	28.6%
One move	133	40.1%	342	48.1%	99	54.4%	100	44.2%	674	46.5%
Two moves	31	9.3%	122	17.2%	37	20.3%	52	23%	242	16.7%
Three or more moves	8	2.4%	42	5.9%	19	10.4%	51	22.6%	120	8.3%
Special Education ever	107	32.2%	248	34.9%	56	30.8%	92	40.7%	503	34.7%
Disability ever	109	32.8%	255	35.9%	57	31.3%	95	42%	516	35.6%
Plan 504	26	7.8%	51	7.2%	15	8.2%	23	10.2%	115	7.9%
Homelessness ever	76	22.9%	162	22.8%	43	23.6%	67	29.6%	348	24.0%
FRPL ever	289	87%	656	92.3%	173	95.1%	211	93.4%	1329	91.6%
LEP 2016	19	5.7%	61	8.6%	15	8.2%	16	7.1%	111	7.6%
Chronic absenteeism	198	59.6%	393	55.3%	97	53.3%	97	42.9%	785	54.1%
All expulsions/suspensions	200	60.2%	382	53.7%	108	59.3%	130	57.5%	820	56.5%

Appendix

Table 3. School mobility of detained and non-detained students, by cohort.

	Cohort 1						Cohort 2					
	Detention (N=2,853)		No Detention (N=118,094)		Total (N=120,947)		Detention (N=1,451)		No Detention (N= 119,306)		Total (N=120,757)	
	N	%	N	%	N	%	N	%	N	%	N	%
School Mobility during a year prior to detention exposure												
No move	1,545	57.3%	101,622	92.5%	103,167	91.7%	864	62.7%	103,942	92.9%	104,806	92.5%
One move	657	24.4%	7,049	6.4%	7,706	6.8%	350	25.4%	7,283	6.5%	7,633	6.7%
Two moves	263	9.8%	987	0.9%	1,250	1.1%	112	8.1%	622	0.6%	734	0.6%
Three or more moves	230	8.5%	195	0.2%	425	0.4%	51	3.7%	81	0.1%	132	0.1%
School Mobility during a year of detention exposure												
No move	807	28.3%	107,298	90.9%	108,105	89.4%	415	28.6%	111,473	93.4%	111,888	92.7%
One move	860	30.1%	9,278	7.9%	10,138	8.4%	674	46.5%	7,132	6.0%	7,806	6.5%
Two moves	551	19.3%	1,284	1.1%	1,835	1.5%	242	16.7%	622	0.5%	864	0.7%
Three or more moves	635	22.3%	234	0.2%	869	0.7%	120	8.3%	79	0.1%	199	0.2%

Appendix

Table 4. OSPI Special Programs participation rates, by cohort.

	Cohort 1						Cohort 2					
	Detention (N=2,853)		No Detention (n=118,094)		Total (N=120,947)		Detention (N=1,451)		No Detention (N= 119,306)		Total (N=120,757)	
	N	%	N	%	N	%	N	%	N	%	N	%
Disability status												
Disability	783	27.4%	13,839	11.7%	14,622	12.1%	458	31.6%	15,241	12.8%	15,699	13.0%
Disability ever	849	29.8%	14,980	12.7%	15,829	13.1%	516	35.6%	17,964	15.1%	18,480	15.3%
Special Education												
Special Education	757	26.5%	13,356	11.3%	14,113	11.7%	451	31.1%	15,136	12.7%	15,587	12.9%
Special Education ever	849	29.8%	15,447	13.1%	16,296	13.5%	503	34.7%	17,081	14.3%	17,584	14.6%
FRPL program												
FRPL	2,430	85.2%	56,258	47.6%	58,688	48.5%	1,264	87.1%	59,959	50.3%	61,223	50.7%
FRPL ever	2,598	91.1%	63,742	54%	66,340	54.9%	1,329	91.6%	67,795	56.8%	69,124	57.2%
Plan 504												
Plan 504	92	3.2%	2,780	2.4%	2,872	2.4%	83	5.7%	5,016	4.2%	5,099	4.2%
Plan 504 ever	114	4.0%	3,142	2.7%	3,256	2.7%	115	7.9%	5,883	4.9%	5,998	5.0%
LEP status												
LEP	165	5.8%	5,361	4.5%	5,526	4.6%	111	7.6%	6,737	5.6%	6,848	5.7%
LEP ever	214	7.5%	7,559	6.4%	7,773	6.4%	130	9.0%	9,724	8.2%	9,854	8.2%
Immigrant status												
	20	0.7%	2,127	1.8%	2,147	1.8%	489	33.7%	602	0.5%	1,091	0.9%

Note: Participation in OSPI programs was measured during the year of detention (Academic Year 2010-11 for Cohort 1 and Academic Year 2015-16 for Cohort 2) as well as during a more extended period of time covering two years prior to and including the Academic Year when the detention exposure occurred (or between Academic Year 2008-09 and Academic Year 2010-11 for Cohort 1 and between Academic Year 2013-14 and Academic Year 2015-16 for Cohort 2).

Appendix

Table 5. Chronic absenteeism among students in Cohort 2.

Cohort 2						
	Detention (N=1,451)		No Detention (N=119,307)		Total (N=120,758)	
	N	%	N	%	N	%
Chronic absenteeism						
Absenteeism 2012-13	464	32.0%	12,398	10.4%	12,862	10.7%
Absenteeism 2013-14	575	39.6%	14,480	12.1%	15,055	12.5%
Absenteeism 2014-15	573	39.5%	15,911	13.3%	16,484	13.7%
Absenteeism 2015-16	785	54.1%	23,410	19.6%	24,195	20%
Absenteeism 2012-13 – through 2015-16	1,089	75.1%	33,644	28.2%	34,733	28.8%

Appendix

Table 6. Disciplinary practices among students in Cohort 2.

Cohort 2						
	Detention (N=1,451)		No Detention (N=118,094)		Total (N=120,758)	
	N	%	N	%	N	%
Expulsions and suspensions during AY 2012-13						
At least one expulsion or suspension	412	28.4%	4,310	3.6%	4,722	3.9%
Expulsion	10	0.7%	101	0.1%	111	0.1%
Long-term suspension	25	1.7%	87	0.1%	112	0.1%
Short-term suspension	403	27.8%	4,233	3.5%	4,636	3.8%
Short-term suspension (3 or more times)	120	8.3%	560	0.5%	680	1.0%
Expulsions and suspensions during AY 2013-14						
At least one expulsion or suspension	574	39.6%	6,331	5.3%	6,905	5.7%
Expulsion	31	2.1%	184	0.2%	215	0.2%
In-school suspension	6	0.4%	246	0.2%	252	0.2%
Long-term suspension	58	4.0%	243	0.2%	301	0.2%
Short-term suspension	549	37.8%	5,970	0.5%	6,579	5.4%
Short-term suspension (3 or more times)	175	12%	812	1.0%	987	1.0%
Expulsions and suspensions during AY 2014-15						
At least one expulsion or suspension	810	55.8%	9,876	8.3%	10,686	8.8%
Expulsion	34	2.3%	180	0.2%	214	0.2%
In-school suspension	222	15.3%	3,024	2.5%	3,246	2.7%
Long-term suspension	126	8.7%	510	0.4%	636	0.5%
Short-term suspension	707	48.7%	7,661	6.4%	8,368	6.9%
Short-term suspension (3 or more times)	270	19%	1,178	1.0%	1,448	1.0%
Expulsions and suspensions during AY 2015-16						
At least one expulsion or suspension	820	56.5%	10,236	8.6%	11,056	9.2%
Emergency expulsion	23	1.6%	116	0.1%	139	0.1%
Expulsion	52	3.6%	141	0.1%	193	0.2%
In-school suspension	222	15.3%	3,314	2.8%	3,536	2.9%
Long-term suspension	136	9.4%	678	0.6%	814	0.7%
Short-term suspension	717	49.4%	7,870	6.6%	8,587	7.1%
Short-term suspension (3 or more times)	228	16%	1,132	1.0%	1,360	1.0%

Note: “Emergency expulsion” (immediate removal of a student); “expulsion” (removal of a student from school for 11 or more consecutive days, up to a maximum of two calendar years); “in-school suspension” (a temporary removal of a student from his/her regular classroom); “long-term suspension” (removal of a student from school for more than 10 consecutive school days); and” short-term suspension” (removal of a student from school for 10 or fewer consecutive school days).

Appendix

Table 7. Mean cumulative GPAs of students in Cohort 1.

	Cohort 1					
	Detention (N=2,853)		No Detention (N=118,094)		Total (N=120,947)	
	N	GPA	N	GPA	N	GPA
Cumulative GPA 2010-11	1,451	.9927	69,503	2.4138	105,051	2.4060
Cumulative GPA 2011-12	1,697	1.2574	104,261	2.5713	149,554	2.5819
Cumulative GPA 2012-13	1,382	1.3747	99,368	2.6150	142,402	2.6235
Cumulative GPA 2013-14	1,221	1.5715	97,797	2.6609	138,652	2.6865
Cumulative GPA 2014-15	646	1.6184	54,175	2.5937	76,017	2.6246

Note: 11,458 students have missing GPA for all the years. The number of students with available GPAs is changing from year to year due to a multitude of factors, including age restrictions (GPA was not available for 8th graders in 2010-11), subsequent dropping out, transfer to a school district outside of Washington, school mobility, confinement to a state correctional facility, or death.

Appendix

Table 8. GPAs among detained and non-detained students in Cohort 1, by year.

Cohort 1						
	Detention (N=2,853)		No Detention (n=118,094)		Total (N=120,947)	
	N	%	N	%	N	%
GPA during AY2010-2011 (N=70,954)						
F (from 0.00 to 0.49)	616	42.5%	7,640	11.0%	8,256	11.6%
D (from 0.50 to 1.49)	425	29.3%	8,416	12.1%	8,841	12.5%
C (from 1.50 to 2.49)	255	17.6%	15,394	22.1%	15,649	22.1%
B (from 2.50 to 3.49)	126	8.7%	22,096	31.8%	22,222	31.3%
A (from 3.50 to 4.00)	29	2.0%	15,957	23.0%	15,986	22.5%
GPA during AY 2011-2012 (N=105,958)						
F (from 0.00 to 0.49)	531	31.3%	4,511	4.1%	5,042	4.8%
D (from 0.50 to 1.49)	535	31.5%	12,941	12.4%	13,476	12.7%
C (from 1.50 to 2.49)	370	21.8%	26,576	25.5%	26,946	25.4%
B (from 2.50 to 3.49)	215	12.7%	36,948	35.4%	37,163	35.1%
A (from 3.50 to 4.00)	46	2.7%	23,285	22.3%	23,331	22.0%
GPA during AY 2012-2013 (N=100,750)						
F (from 0.00 to 0.49)	346	25%	2,814	2.8%	3,160	3.1%
D (from 0.50 to 1.49)	435	31.5%	11,070	11.1%	11,505	11.4%
C (from 1.50 to 2.49)	388	28.1%	26,960	27.1%	27,348	27.1%
B (from 2.50 to 3.49)	170	12.3%	37,584	37.8%	37,754	37.5%
A (from 3.50 to 4.00)	43	3.1%	20,090	21.1%	20,983	20.8%
GPA during AY 2013-2014 (N=99,018)						
F (from 0.00 to 0.49)	213	17.4%	2,109	2.2%	2,322	2.3%
D (from 0.50 to 1.49)	366	30.0%	9,118	9.3%	9,484	9.6%
C (from 1.50 to 2.49)	413	33.8%	27,167	27.8%	27,580	27.9%
B (from 2.50 to 3.49)	192	15.7%	39,362	40.2%	39,554	39.9%
A (from 3.50 to 4.00)	37	3.0%	20,041	20.5%	20,078	20.3%
GPA during AY 2014-2015 (N=54,821)						
F (from 0.00 to 0.49)	92	14.2%	1,338	2.5%	1,430	2.6%
D (from 0.50 to 1.49)	206	31.9%	5,667	10.5%	5,873	10.7%
C (from 1.50 to 2.49)	228	35.3%	16,075	29.7%	16,303	29.7%
B (from 2.50 to 3.49)	111	17.2%	20,833	38.5%	20,944	38.2%
A (from 3.50 to 4.00)	9	1.4%	10,262	18.9%	10,271	18.7%

Appendix

Table 9. Credits ratio for students in Cohort 1, by year and grade level.

Cohort 1						
	Detention (N=2,853)		No Detention (n=118,094)		Total (N=120,947)	
	N	%	N	%	N	%
Credits Ratio of 9th graders during AY2010-11 (N=58,912)						
Less than 50	984	55.3%	5,452	9.5%	6,409	10.9%
50-79	373	21.0%	7,158	12.5%	7,531	12.8%
80-100	421	23.7%	44,646	78.0%	45,067	76.3%
Credits Ratio of 9th graders during AY2011-12 (N=55,832)						
Less than 50	840	52.0%	4,494	8.2%	5,334	9.4%
50-79	413	25.6%	8,067	14.7%	8,480	15.0%
80-100	362	22.4%	42,278	77.1%	42,640	75.54%
Credits Ratio of 8th graders during AY 2011-2012 (N=52,088)						
Less than 50	297	47.7%	3,807	7.4%	4,104	7.9%
50-79	126	20.2%	5,868	11.4%	5,994	11.5%
80-100	200	32.1%	41,854	81.2%	42,054	80.6%
Credits Ratio of 8th graders during AY 2012-2013 (N=50,720)						
Less than 50	256	43.1%	3,425	6.8%	3,681	7.2%
50-79	164	27.6%	6,879	13.6%	7,043	13.7%
80-100	174	29.3%	40,359	79.7%	40,533	79.1%

Appendix

Table 10. Academic performance and school exists of students in Cohort 1.

Cohort 1						
	Detention (N=2,853)		No Detention (N=118,094)		Total (N=120,947)	
	N	%	N	%	N	%
Meeting standards on 10th grade assessment tests						
Reading (n=105,770)	920	65.2%	94,876	90.9%	95,796	90.6%
Writing (n=104,853)	948	71.2%	97,117	93.8%	98,065	93.5%
Science (n=88,539)	304	36.8%	59,671	68.0%	59,975	67.7%
Math (n=64,083)	251	28.4%	35,915	56.8%	36,166	56.4%
School Exists						
Graduated from high school	452	15.8%	85,141	72.1%	85,593	70.8%
Graduation timing						
On time graduation	303	67.5%	79,085	93.1%	79,388	93.0%
Delayed graduation	91	20.3%	4,144	4.9%	4,235	5.0%
Years of delay						
1-year delay	73	80.2%	3,472	83.8%	3,545	83.7%
2-year delay	15	16.5%	605	14.6%	620	14.6%
3-year delay	*	*	*	*	*	*
GED	448	15.7%	2,848	2.4%	3,296	2.7%
Dropout	1,620	56.8%	16,283	13.8%	17,903	14.8%
Probably dropout	529	18.5%	9,586	8.1%	10,115	8.4%
Timing of dropout						
Dropout AY2010-11	125	4.4%	1,275	1.1%	1,400	1.2%
Dropout AY2011-12	243	8.5%	1,284	1.1%	1,527	1.3%
Dropout AY2012-13	348	12.2%	2,090	1.8%	2,438	2.0%
Dropout AY2013-14	424	14.9%	3,872	3.3%	4,296	3.6%
Dropout AY2014-15	308	10.8%	4,742	4.0%	5,050	4.2%
Dropout AY2015-16	172	6.0%	3,020	2.6%	3,192	2.6%
Postsecondary Enrollment						
WA Public 2-year colleges	1,041	35.3%	43,892	37.2%	44,906	37.1%
WA Public 4-year colleges	23	0.8%	15,978	13.4%	15,901	13.1%

Appendix

Table 10A. Selected education outcomes of detained students in Cohort 1, by type of detention experience.

	Low GPA (F and D)		Reading Standard met		Writing Standard met		Science Standard Met		Math Standard Met	
	N	%	N	%	N	%	N	%	N	%
Prior history of detention										
Yes	457	78%	277	59.2%	292	66.4%	67	29%	57	22%
No	584	67.5%	643	68.1%	656	73.6%	237	39.8%	194	31.1%
Total	1,041	71.7%	920	65.2%	948	71.2	304	36.8%	251	28.4%
Number of admissions										
Single admission	580	68%	547	68.8%	560	73.8%	219	42%	169	31.8%
Multiple admission	461	77.1%	373	60.5%	388	67.8%	85	27.8%	82	23.4%
Total	1,041	71/7%	920	65.2%	948	71.2%	304	36.8%	251	28.4%
Detention type										
Pre-adjudication	437	67%	463	71.7%	465	74.6%	183	43.4%	137	31.7%
Post-adjudication	316	72%	244	59.1%	258	68.6%	75	30.7%	57	22.7%
Both	255	82%	190	59.4%	204	68.5%	40	29%	245	28.5%
Total	1,008	71.9%	897	65%	927	71.5%	298	37.1%	433	15.7%
Length of stay										
Less than a day	272	69.2%	228	71.5%	232	75.8%	87	43.7%	79	37.4%
More than a day but < than 2 weeks	455	69.7%	436	67.5%	454	73.5%	158	37.4%	108	25.5%
Two weeks to a month	120	72.7%	106	61.6%	106	69.3%	30	31.3%	25	24.8%
More than a month	194	80.8%	150	54.5%	156	61.4%	29	26.6%	39	26.5%
Total	1,041	71.7%	920	65.2%	948	71.2%	304	36.8%	251	28.4%

Note: The type of detention was not known for everyone.

GPA is measured in the end of detention year

GPA was not known for everyone.

Number of tested students varied by subject.

Appendix

Table 11. Selected education outcomes of detained students in Cohort 1, by type of detention experience.

	Drop out		Graduation		PS enrollment		Probable dropout		GED	
	N	%	N	%	N	%	N	%	N	%
Prior history of detention										
Yes	710	62%	97	8.5%	481	42%	235	20.5%	231	20.2%
No	910	53.3%	355	20.8%	563	33%	294	17.2%	217	12.7%
Total	1,620	56.8%	452	15.8%	1,044	36.6%	529	18.5%	448	15.7%
Number of admissions										
Single admission	722	53.1%	308	21.2%	497	34.2%	253	17.4%	173	11.9%
Multiple admission	848	60.6%	144	10.3%	547	39.1%	276	19.7%	275	19.7%
Total	1,620	56.8%	452	15.8%	1,044	36.6%	529	18.5%	448	15.7%
Detention type										
Pre-adjudication	565	49.3%	256	22.3%	432	37.6%	225	19.6%	127	11.1%
Post-adjudication	520	61.8%	118	14%	270	32.1%	140	16.6%	136	16.2%
Both	487	63.7%	62	8.1%	313	40.9%	137	17.9%	170	22.2%
Total	1,572	57.1%	436	15.8%	1,014	36.8%	502	18.2%	433	15.7%
Length of stay										
Less than a day	275	48.5%	134	23.6%	195	34.4%	104	18.3%	44	7.8%
More than a day but < than 2 weeks	728	56.6%	230	17.9%	452	35.1%	216	16.8%	186	14.5%
Two weeks to a month	234	61.3%	40	10.5%	142	37.2%	76	19.9%	71	18.6%
More than a month	383	62.0%	48	7.8%	255	41.3%	133	21.5%	147	23.8%
Total	1,620	56.8%	452	15.8%	1,044	36.6%	529	21.5%	448	15.7%

Note: The type of detention was not known for everyone.
 GPA is measured in the end of detention year
 GPA was not known for everyone.

Appendix

Table 12. Graduation and delayed graduation among detained students in Cohort 1, by type of detention experience.

	Graduation		Delayed graduation		Delayed graduation					
	N	%	N	%	1-year delay		2-year delay		3-year delay	
	N	%	N	%	N	%	N	%	N	%
Prior history of detention										
Yes	97	8.5%	23	24.2%	20	87.0%	*	*	*	*
No	355	20.8%	68	19.2%	53	77.9%	*	*	*	*
Total	452	15.8%	91	20.3%	73	80.2%	*	*	*	*
Number of admissions										
Single admission	308	21.2%	52	16.9%	42	80.8%	*	*	*	*
Multiple admission	144	10.3%	39	27.5%	31	79.5%	*	*	*	*
Total	452	15.8%	91	20.3%	73	80.2%	*	*	*	*
Detention type										
Pre-adjudication	256	22.3%	44	17.3%	33	75%	*	*	*	*
Post-adjudication	118	14%	22	18.6%	18	81.8%	*	*	*	*
Both	62	8.1%	20	33.3%	17	85%	*	*	*	*
Total	436	15.8%	86	19.9%	68	79.1%	*	*	*	*
Length of stay										
Less than a day	134	23.6%	26	19.4%	20	76.9%	*	*	*	*
More than a day but < than 2 weeks	230	17.9%	39	17.0%	32	82.1%	*	*	*	*
Two weeks to a month	40	10.5%	*	*	*	*	*	*	*	*
More than a month	48	7.8%	17	37.0%	14	82.4%	*	*	*	*
Total	452	15.8%	91	20.3%	73	80.2%	*	*	*	*

Note: The type of detention was not known for everyone.

Appendix

Table 13: Experiences with detention among detained 8th or 9th graders, by cohort.

	Cohort 1 (N=2,853)		Cohort 2 (N=1,451)	
	N	%	N	%
Number of admissions				
Single admission	1,454	51.0%	797	54.9%
Multiple admission	1,399	49.0%	654	45.1%
Detention type				
Pre-sentenced	1,146	40.2%	628	45.2%
Post-sentenced	842	29.2%	377	27.1%
Both	765	26.8%	384	27.6%
Length of stay				
Less than a day	567	19.9%	332	22.9%
More than a day but less than two weeks	1286	45.1%	711	49%
Two weeks to a month	382	13.4%	182	12.5%
More than a month	618	21.7%	226	15.6%

Note: For 100 students the data on the type of detention admission are missing, these students are excluded from the analyses of the types.

Table 14: Results of Binary Logistic Regression, Dependent Variable: Graduated high school

	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(b)	β	SE	Exp(β)	β	SE	Exp(β)
Detained vs. non-detained	-2.619***	.052	.073	-2.343***	.053	.096	-1.416***	.057	.243	-.327**	.122	.721
Age				-.424***	.008	.654	-.737***	.013	.478	-.298***	.026	.742
Male vs. Female				-.259***	.013	.772	-.231***	.014	.794	-.103***	.026	.903
American Indian				-.872***	.043	.418	-.553***	.045	.575	-.007	.079	.993
Asian				.405***	.037	1.499	.401***	.039	1.493	.089	.072	1.093
African American				-.676***	.033	.509	-.434***	.035	.648	-.026	.061	.974
Hispanic				-.359***	.017	.698	.008	.019	1.008	.287***	.035	1.332
Hawaiian/Pacific Islander				-.700***	.069	.497	-.407***	.073	.666	-.127	.131	.880
Two or more ethnicities				-.187***	.030	.830	-.101***	.031	.904	-.017	.056	.983
Grade level							.812***	.020	2.253	.332***	.037	1.394
Homeless ever							-.654***	.036	.520	-.229**	.066	.795
Plan 504 ever							.146***	.040	1.157	.171*	.072	1.187
Disability ever							-.283***	.019	.754	.050	.034	1.051
LEP ever							-.204***	.028	.815	.219***	.049	1.244
FRPL ever							-.734***	.015	.480	-.294***	.029	.745
School mobility							-.733***	.018	.481	-.256***	.033	.774
9 th grade GPA										.441***	.018	1.554
9 th credit accumulation										.701***	.027	2.016
10 th grade reading standard met										.528***	.039	1.696
10 th grade writing standard met										.772***	.043	2.164
10 th grade science standard met										.131***	.029	1.140
10 th grade math standard met										.268***	.029	1.307
Constant	.949***	.006	2.584	7.028***	.115	1128.2	4.886***	.129	132.44	-1.780***	.261	.169

Note: B = B Coefficient; SE=Standard Error; Exp(B)= odds ratio; *p < .05; **p<.01;***p<.001.

Description: Table 14 and the rest of the tables in this document show the regression results from 4 different binary logistic regressions which were built in a sequential manner in which every subsequent model included an increased number of independent variables. For each variable, the table shows the coefficient (estimate β), the estimated standard error for the coefficient (SE), and exponentiated coefficient estimate (Exp(B)). A p-value of less than 0.05 indicates that the variable has a statistically significant effect on the dependent variable. Estimate β tells the amount of increase (or decrease, if the sign of the coefficient is negative) in the predicted log odds of graduation=1 that would be predicted by a 1 unit increase (or decrease) in the predictor, holding all other predictors constant. Because these coefficients are in log-odds units, they are difficult to interpret, so they are often converted into odds ratios which are calculated by exponentiation of β coefficient. The odds ratio of a coefficient indicates how the risk of the outcome falling in the comparison group compared to the risk of the outcome falling in the reference group changes with the variable in question. An odds ratio > 1 indicates that the risk of the outcome falling in the comparison group relative to the risk of the outcome falling in the referent group increases as the variable increases. In other words, the comparison outcome is more likely. An odds ratio < 1 indicates that the risk of the outcome falling in the comparison group relative to the risk of the outcome falling in the referent group decreases as the variable increases. In other words, if the odds ratio < 1, the outcome is more likely to be in the reference group.

Table 15: Results of Binary Logistic Regression, Dependent Variable: Dropped out

	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(b)	β	SE	Exp(β)	β	SE	Exp(β)
Detained vs. non-detained	2.149***	.039	8.575	1.809***	.041	6.106	.890***	.047	2.435	.522***	.127	1.686
Age				.534***	.010	1.705	.716***	.013	2.046	.327***	.030	1.387
Male vs. Female				.300***	.017	1.350	.294***	.017	1.342	.173***	.032	1.189
American Indian				.934***	.047	2.544	.598***	.049	1.818	.108	.089	1.114
Asian				-.627***	.055	.534	-.639***	.056	.528	-.187*	.095	.830
African American				.316***	.041	1.371	.025	.043	1.025	-.155*	.076	.857
Hispanic				.437***	.020	1.548	.043	.023	1.044	-.255***	.043	.775
Hawaiian/Pacific Islander				.457***	.087	1.580	.100	.089	1.105	-.066	.160	.936
Two or more ethnicities				.171***	.038	1.187	.061	.039	1.063	-.018	.070	.982
Grade level							-.606***	.023	.545	-.277***	.045	.758
Homeless ever							.465***	.037	1.593	.276***	.076	1.318
Plan 504 ever							-.115**	.047	.891	-.180*	.086	.835
Disability ever							.080**	.023	1.083	-.472***	.044	.624
LEP ever							.144***	.033	1.155	-.215***	.059	.807
FRPL ever							.996***	.021	2.709	.376***	.037	1.456
School mobility							.571***	.017	1.770	.168***	.037	1.183
9 th grade GPA										-.568***	.023	.567
9 th credit accumulation										-.557***	.030	.573
10th grade reading standard met										-.495***	.046	.610
10th grade writing standard met										-.633***	.049	.531
10th grade science standard met										-.178***	.036	.837
10th grade math standard met										-.415***	.036	.660
Constant	-1.765***	.008	.171	-9.416	.132	.000	-7.390***	.156	.001	.091	.313	1.095

Note: B = B Coefficient; SE=Standard Error; Exp(B)= odds ratio; *p < .05; **p<.01;***p<.001.

Table 16: Results of Binary Logistic Regression, Dependent Variable: GED

	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(b)	β	SE	Exp(β)	β	SE	Exp(β)
Detained vs. non-detained	2.020***	.055	7.538	1.619***	.058	5.049	.696***	.074	2.006	.652**	.237	1.919
Age				.680***	.015	1.973	.638***	.019	1.893	.476***	.059	1.609
Male vs. Female				.209***	.037	1.232	.293***	.038	1.340	.275**	.088	1.316
American Indian				.218**	.102	1.244	.031	.103	1.031	-.039	.244	.962
Asian				-1.004***	.144	.367	-.857***	.144	.424	-.464	.298	.629
African American				-.254**	.093	.775	-.365***	.094	.694	-.669**	.248	.512
Hispanic				-.413***	.050	.661	-.392***	.053	.675	-.546***	.125	.579
Hawaiian/Pacific Islander				-.928**	.307	.395	-1.046**	.309	.351	-1.723	1.007	.179
Two or more ethnicities				.010	.082	1.010	-.096	.083	.909	-.013	.178	.987
Grade level							.216***	.050	1.241	.502***	.116	1.652
Homeless ever							.185**	.075	1.203	.255	.195	1.291
Plan 504 ever							.169**	.090	1.184	.145	.196	1.156
Disability ever							-.988***	.066	.372	-1.048***	.152	.351
LEP ever							-1.390***	.129	.249	-.863**	.252	.422
FRPL ever							.726***	.044	2.067	.126	.095	1.135
School mobility							.582***	.029	1.790	.267**	.081	1.307
9 th grade GPA										-.505***	.061***	.603
9 th credit accumulation										-.428***	.079***	.652
10th grade reading standard met										.472**	.150**	1.604
10th grade writing standard met										-.532***	.138***	.588
10th grade science standard met										.164	.096	1.179
10th grade math standard met										-.139	.096	.870
Constant	-3.700***	.019	.025	-13.182	.218	.000	-14.928	.375	.000	-12.610***	.889***	.000

Note: B = B Coefficient; SE=Standard Error; Exp(B)= odds ratio; *p < .05; **p<.01;***p<.001.

Table 17: Results of Binary Logistic Regression, Dependent Variable: PS enrollment in a two-year college

	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(b)	β	SE	Exp(β)	β	SE	Exp(β)
Detained vs. non-detained	-.300***	.040	.741	-.187***	.040	.829	.140**	.045	1.151	.271**	.119	1.312
Age				.031***	.008	1.032	-.080***	.011	.923	-.040	.023	.960
Male vs. Female				-.391***	.013	.677	-.337***	.013	.714	-.331***	.021	.718
American Indian				-.628***	.046	.533	-.442***	.047	.643	-.255**	.074	.775
Asian				.449***	.033	1.567	.462***	.033	1.587	.482***	.055	1.619
African American				-.217***	.034	.805	-.055	.035	.947	.235***	.053	1.265
Hispanic				-.280***	.017	.756	-.020	.019	.980	.104***	.029	1.110
Hawaiian/Pacific Islander				-.598***	.076	.550	-.441***	.077	.643	-.093	.118	.911
Two or more ethnicities				.018	.029	1.018	.063*	.029	1.065	.137**	.045	1.147
Grade level							.346***	.018	1.414	.316***	.031	1.371
Homeless ever							-.132***	.036	.876	-.014	.063	.986
Plan 504 ever							.298***	.039	1.347	.350***	.059	1.418
Disability ever							-.727***	.020	.483	-.552***	.030	.576
LEP ever							-.284***	.029	.753	.127**	.042	1.135
FRPL ever							-.460***	.014	.631	-.256***	.022	.774
School mobility							-.079***	.016	.924	-.026	.030	.974
9 th grade GPA										.353***	.015	1.423
9 th credit accumulation										-.099***	.026	.905
10th grade reading standard met										.207***	.040	1.230
10th grade writing standard met										.070	.046	1.072
10th grade science standard met										.188***	.023	1.206
10th grade math standard met										.228***	.023	1.257
Graduated high school										.490***	.029	1.632
GED										1.146***	.088	3.145
Constant	-.279	.006	.756	-.451	.107	.637	-1.598***	.119	.202	-4.007***	.223	.018

Note: B = B Coefficient; SE=Standard Error; Exp(B)= odds ratio; *p < .05; **p<.01;***p<.001.

Table 18: Results of Binary Logistic Regression, Dependent Variable: PS enrollment in a 4-year college

	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(b)	β	SE	Exp(β)	β	SE	Exp(β)
Detained vs. non-detained	-3.069***	.210	.046	-2.814***	.210	.060	-1.784***	.214	.168	.166	.330	1.181
Age				-.264***	.013	.768	-.523***	.023	.593	-.273***	.048	.761
Male vs. Female				-.367***	.018	.693	-.291***	.019	.748	-.279***	.036	.756
American Indian				-1.070***	.087	.343	-.667***	.089	.513	.007	.142	1.007
Asian				.806***	.039	2.240	.820***	.042	2.270	.491***	.090	1.633
African American				-.431***	.054	.650	-.143**	.056	.867	.684***	.092	1.982
Hispanic				-.271***	.024	.763	.216***	.028	1.241	.641***	.049	1.899
Hawaiian/Pacific Islander				-.814***	.124	.443	-.487***	.127	.614	-.027	.215	.973
Two or more ethnicities				-.090**	.042	.914	.000	.044	1.000	.082	.082	1.085
Grade level							.600***	.031	1.822	.377***	.060	1.457
Homeless ever							-.683***	.084	.505	-.087	.129	.917
Plan 504 ever							-.016	.070	.984	.029	.120	1.030
Disability ever							-1.780***	.050	.169	-1.132***	.073	.322
LEP ever							-.529***	.049	.589	.202**	.076	1.224
FRPL ever							-.785***	.021	.456	-.162***	.039	.850
School mobility							-.935***	.043	.393	-.361***	.073	.697
9 th grade GPA										1.010***	.027	2.745
9 th credit accumulation										.377***	.087	1.458
10th grade reading standard met										.722***	.126	2.059
10th grade writing standard met										.959***	.179	2.608
10th grade science standard met										.460***	.044	1.584
10th grade math standard met										.485***	.044	1.625
Graduated high school										2.039***	.103	7.684
GED										-.214***	.520	.807
Constant	-1.296	.009	.274	2.541	.174	12.690	1.495***	.194	4.327	-9.926***	.505	.000

Note: B = B Coefficient; SE=Standard Error; Exp(B)= odds ratio; *p < .05.