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COLORADO EVALUATION
AND ACTION LAB

The Colorado Dropout Prevention Framework

A Retrospective Analysis of Annual
and Cohort Student Outcomes

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Abstract

The Colorado Department of Education recently received state funding to implement a Student Re-Engagement Grant Program (SRGP). The goal of this project is to inform the administration of the SRGP by looking back at data from a previously administered grant program, called Colorado Graduation Pathways (CGP). The CGP program was a federally funded grant with similar objectives to the SRGP (e.g., decreasing the dropout rate; increasing the high school graduation rate).

Student-level data from one year of this program were used in combination with state administrative data to describe the relationships between targeted interventions and educational outcomes for served students, such as staying in school and graduating from high school. This was not a causal study – that might suggest that outcomes were a result of specific interventions. Instead, the descriptive exploratory nature of the analyses is best used to generate ideas and guide conversations about strategic grant-making. The findings from the study suggest considering:

- Engaging grantees in conversations about equity and access.
- Expanding investments to create continuity through school transitions for all grade levels.
- Targeting interventions and supports to students who change schools during 12th grade so that they are more likely to graduate.
- Sustaining or increasing investments in Check & Connect to help keep students in school.
- Accelerating investments in Title I and highly mobile students.
- Requiring grantees to report program data at the student level.

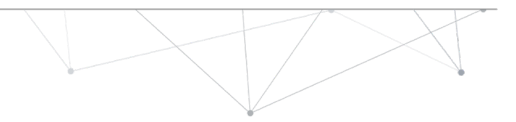
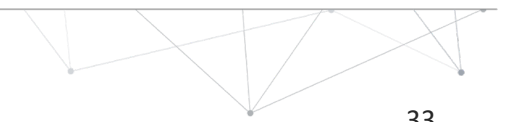


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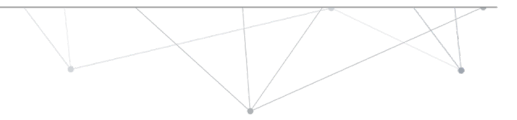


Data Sources

Administrative data from the Colorado Department of Education was utilized in this study. The data included student detail and demographic records for the 2014-15 to 2017-18 school years, as well as service utilization data collected for the Colorado Graduation Pathways (CGP) grant process for the 2014-15 school year.

Suggested Citation

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Introduction

The Colorado Department of Education (CDE) recently received state funding to implement a Student Re-Engagement Grant Program (SRGP). The goal of the grant program is to assist local education providers in providing educational services and supports to maintain student engagement and facilitate student re-engagement at the secondary level. In order to tailor SRGP and maximize the likelihood of positive student outcomes, a retrospective analysis of data from the Colorado Graduation Pathways (CGP) was used to identify relationships between aspects of the Colorado Dropout Prevention Framework (CDPF) and student outcomes.

Colorado Graduation Pathways

Prior to the launch of SRGP, a federal grant program called Colorado Graduation Pathways (CGP) was implemented by CDE, with a goal of developing dropout prevention models that were both sustainable and replicable. With an additional focus on improvement of interim indicators related to graduation (e.g. attendance, behavior, and course completion). CGP-funded schools selected methods and tactics from CDPF; some were used universally in the school while others were targeted to serve specific students.

Colorado Dropout Prevention Framework

CDPF is a framework intended to ensure that all students have educational opportunities and effective academic guidance to attain their educational goals. This is accomplished by focusing on three essential elements: 1) Identification, 2) Intervention & Support, and 3) Institutional Change, supported by the following methods and tactics:

- Data Analysis
- Early Warning Systems
- Tracking Out-of-School Youth
- Assess and Enhance School Climate
- Policy and Practices Review
- Community Engagement
- Family Partnering
- Transition Programs
- Multiple Pathways to Graduation
- Re-engagement of Out-of-School Youth
- Enhanced Counseling and Mentoring
- Credit Recovery Options

This study is a first step toward understanding the relationship between the use of CDPF methods and tactics and students' progress in school. The focus of this study is primarily on the targeted interventions that were delivered to students as part of a CDPF method and tactic. In the current study, information was available regarding student participation in five interventions (see Figure 1). Findings from the proposed analyses are intended to be validated in later years using current and future SRGP data, and ultimately inform development of the next SRGP request for proposals.

Figure 1

Method and Tactic	Targeted Intervention
Early Warning Systems	Attendance Intervention
Enhanced Counseling and Mentoring	Check & Connect
Credit Recovery Options	Credit Recovery
Multiple Pathways to Graduation	Dropout Recovery
Enhanced Counseling and Mentoring	Graduation Coaching



Description of the Study

The study is descriptive and exploratory in nature. CGP program data were first used in combination with school-wide demographics to determine if some groups of students received CGP interventions at disproportional rates. Then, the CGP intervention data were compared to data on how students exited the academic year. School outcomes were categorized by CDE to group end-of-year outcomes into positive, neutral, or negative outcomes. End-of-year positive outcomes include graduation, obtaining a GED, or continuing with school. Neutral outcomes include transfers, illness/injury, or death. Negative outcomes include aging out of services, transferring to a detention facility, expulsion, extended absence, or dropping out. Together, this information can be used to inform future investments in dropout prevention and student re-engagement services in Colorado.

PART ONE: Describes the context for understanding the relationship between interventions and outcomes by focusing on CGP dosage services, disproportionality in targeted intervention participation, and school mobility.

PART TWO: Describes annual – or end-of-year outcomes – for students who received a targeted CGP intervention in Grades 9, 10, 11, and 12 during the 2014-15 school year.

PART THREE: Describes outcomes for the Class of 2018 cohort. The analyses pertain to students who received a CGP-targeted intervention as ninth graders during the 2014-15 school year.

Methods

Sample

There were two samples for used in this study. The annual sample includes students in grades nine through twelve who were served by CGP in the 2014-15 school year. The cohort sample is the students in the Class of 2018 who were served by CGP during the 2014-15 school year as ninth graders. Data from the 2014-15 school year were used because that is the year in which CGP-funded schools were required to report to CDE the specific interventions delivered to individual students.

Annual Analysis

The sampling frame was defined as students who were reported by CGP interventions as having received services under the grant in 2014-15 and whose reported State Assigned Student Identifier (SASID) also matched records in CDE's end-of-year data collection (Figure 2). A total of 6,366 unique students were included in the served students sample and 36,586 unique students who attended a CGP school were retained for proportional comparison.



Figure 2

Category	Type	CGP Served Students	Percentage of Sample
Student Grade	9 th Grade	1,180	19%
	10 th Grade	1,097	17%
	11 th Grade	1,674	26%
	12 th Grade	2,415	38%
Gender	Female	2,886	45%
	Male	3,480	55%
Race/Ethnicity	African American	806	13%
	Asian American	180	3%
	Caucasian	1,680	26%
	Hawaiian/Pacific Islander	18	0%
	Hispanic	3,409	54%
	Native American	118	2%
	Two or More	155	2%
Unique Student Populations	ESL/ELL	2,156	34%
	Free or Reduced Lunch (FRL)	3,888	61%
	Highly Mobile	530	8%
	SPED Status	556	9%
	Title I	714	11%
Total Number of Students		6,366	100%

Cohort Analysis

A subset of the annual analysis sample was used for the cohort analysis. The sample was selected using students who were reported to be in the ninth grade in the 2014-15 school year and did not have a ninth grade or higher record the previous year (2013-14 school year). A total of 1,079 unique students were included in the served student cohort sample (Figure 3). The same method was used to create a comparison group of students who attended a CGP school with a total of 9,907 unique students.

Figure 3

Category	Type	CGP Served Students	Percentage of Sample
Gender	Female	497	46%
	Male	582	54%
Race/Ethnicity	African American	170	16%
	Asian American	17	2%
	Caucasian	256	24%
	Hispanic	582	54%
	Native American	23	2%
	Two or More	30	3%
Unique Student Populations	ESL/ELL	372	34%
	Free or Reduced Lunch (FRL)	754	70%



Category	Type	CGP Served Students	Percentage of Sample
	Highly Mobile	74	7%
	SPED Status	122	11%
	Title I	30	3%
Total Number of Students		1,079	100%

Note. Due to relatively small sample size, the Hawaiian/Pacific Islander category will not be reported in subsequent sections of this report. Unique Student Populations may include duplicate students as an individual student may fit into multiple categories.

Data Cleaning

Analysis of administrative data sets often involves making some decisions while cleaning the data. In this study, data from student demographic files were collapsed so that only one record per student was retained. Where there were multiple and/or conflicting records, the records were combined so that any field with a positive indicator was retained over a negative (e.g. homelessness, various race categories, etc.), such that a student with a record indicating “Yes” for Asian American and another record indicating “Yes” for Caucasian would have a final record with “Yes” for both fields. CDE federal race reporting standards were then reapplied to the consolidated data to update that field; 2,815 records were combined.

Unique student populations were calculated as follows:

- English as a Second Language/ English Language Learner (ESL/ELL): A “Yes” indicator in the ELL field or a value greater than 1 in the ESL field
- Free or Reduced Lunch (FRL): A value of “F” or “R” in the FRL field
- Highly Mobile: A positive indicator in the Homeless or Refugee fields, or a value of “B”, “C”, or “D” in the Migrant field, or the student was on a list of foster care students
- Special Education (SPED) Status: a positive indicator in the SPED field
- Title I: a positive indicator in the Title I field.

A similar consolidation process was used for students who had multiple CGP service records with 210 records combined. When comparing student demographic data to the CGP grant collected data, only records where demographic and CGP data could be linked were kept as the CGP-served population – 465 records were excluded. Of the 1,079 students in the ninth-grade cohort, 80% had a 2017-18 school detail record, all were retained, and the last detail record for the student (regardless of year) was used for the final outcome analysis.

Analytic method

The majority of the analyses were descriptive statistics. Comparisons were assessed via chi-square tests of association. All comparisons highlighted in the narrative were significant at $p < .05$ level, unless noted. All statistical comparisons are available upon request.



Recommendations for Student Re-Engagement Grant Program Grant-Making

Recommendations for SRGP grant-making are presented in this section along with the key supporting findings. The detailed results associated with each research question are presented later in this report.

Engage grantees in conversations about equity and access.

Male students were overrepresented in CGP interventions.

African American students were overrepresented in CGP interventions, and Hispanic students were underrepresented.

ESL/ELL students were underrepresented in CGP interventions, and Title I students were overrepresented.

Analysis of the CGP program data suggest that some student groups received disproportional access to services, meaning that the proportion of students in a group receiving the targeted intervention was different than the proportion of that student group in the CGP school population. Disproportional representation in CGP intervention services may have been intentional and data-driven. There could also be systematic gaps in how students were identified for targeted interventions. The current study is only designed to describe the disproportionality and pose recommendations for where to engage in meaningful conversations with grantees. Engaging former and future grantees in conversations about their identification process through an equity lens may elucidate opportunities to ensure equitable access to services.

Expand investments to create continuity through school transitions for all grade levels.

Eighty-nine percent of students who enrolled in a CGP intervention service at the start of the academic year and did not transfer out had a positive outcome at the end of the school year.

Whereas, 73% of students who moved schools had a positive outcome that same school year.

Following students for four years after initially entering ninth grade highlights the relationship between school moves and fewer positive outcomes. Students who transferred out of a CGP school graduated at lower rates than students who transferred into a CGP school (50% and 67%, respectively).



Regardless of intervention type or grade level, students who remained enrolled in the same CGP school throughout the 2014-15 school year had more positive outcomes than those who changed schools.

A closer look at the data on school moves suggests CGP schools may have developed successful onboarding practices that could be replicated and expanded. More attention is needed on strategies to support students as they exit, particularly to schools who are not receiving grant funds to implement CDPF.

Students who transferred into a CGP school had 81% positive outcomes, students who transferred between schools had 71% positive outcomes, more than two transfers had 65% positive outcomes, and students who transferred out of a CGP school had 55% positive outcomes that same school year.

Positive outcomes, as defined by CDE, refer to at the end of the year:

- Remaining in school
- Obtaining a high school credential (e.g., GED)
- Graduating from high school

Or at any point during the year:

- Returning to school after a prolonged absence

Target interventions and supports to students who change schools during 12th grade so that they are more likely to graduate.

Fifty-five percent of all 12th graders who received CGP services graduated. If the student remained at the same CGP school, that number rose to 60% and dropped to 35% for 12th grade students who transferred schools.

When 12th graders change schools, even into another CGP school, they are less likely to graduate that year than their CGP-served peers who remained in the same high school. Students who did change schools were more likely to graduate that year if they participated in attendance interventions or credit recovery programming.

Given low graduation rates for highly mobile students statewide and within CGP schools, SRGP funds might also be wisely invested in *policy and practice reviews* that build the capacity of schools to implement the educational stability protections for students who experience homelessness or foster care.

Sustain or increase investments in Check & Connect to help keep students in school.

Nearly 100% of students who received Check & Connect services remained in school, compared to 60% for all other students who received CGP services.

Only a small number of students received this service and they were disproportionately male and Caucasian.



Check & Connect is an evidence-based intervention¹ and these exploratory analyses suggest that delivery of this intervention by CGP schools is associated with staying in school. Although only 228 students between ninth and 11th grade received Check & Connect services, 227 of those students had a positive outcome at the end of the school year. An area for further exploration in grant planning and making is learning more about the selection of students for this program. Under the CGP grant, the students served with Check & Connect were disproportionately male and Caucasian². Conversations with Colorado schools that use Check & Connect might inform the populations for whom this intervention may work best or could be intentionally expanded to serve.

Accelerate investments in Title I and highly mobile students

Only 46% of Title I students remained in school.

Only 20% of Title I 12th graders who received services graduated in 2014-15.

Only 44% of highly mobile 12th graders who received services graduated in 2014-15.

Forty-six percent of Title I students had lower rates of staying in school than their peers, compared to 63% of all CGP students. Title I students and highly mobile students also had a much lower graduation rate than their peers receiving CGP services.

Title I students received attendance and dropout recovery interventions at a higher rate than others, accounting for 49% of all dropout recovery services. This group did not receive Check & Connect services and had disproportionately low rates of credit recovery and graduation coaching services. Highly mobile students also had higher rates of receiving attendance and dropout recovery interventions and lower rates of Check & Connect.

Require grantees to report program data at the student level

A primary limitation of this study was knowing only what intervention students participated in during one school year. Many of these students continued in CGP schools for multiple school years, thus the CGP dosage information is incomplete and findings can only be used with caution.

When the CGP program was implemented, CDE was in the process of building the infrastructure for grantees to report program information by SASID. That capacity has been built, thus requiring student level reporting is now more feasible.

¹ Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, 71(4), 465–482.

² Although Figures 12 and 15 illustrate gender and race separately, the disproportionality also applies to the combination of male and Caucasian.



PART ONE: CONTEXT – DOSAGE, DISPROPORTIONALITY, AND SCHOOL MOBILITY

Research Question 1: What and how many methods, tactics, and targeted interventions did students in CGP schools receive? What were the most typical combinations?

Research Question 2: What disproportionality exists in service delivery?

Research Question 3: On an annual basis, what were the school mobility patterns for students served by CGP interventions?

Research Question 4: For the cohort of students served by CGP interventions in ninth grade, what were the school mobility patterns throughout their high school experience?

Each research question was examined for all students receiving CGP services and by unique student groups (i.e., demographic characteristics and Instructional Service Program Types). In part two of this report, some of the above questions will be expanded to a cohort approach and incorporate four years of data since initially entering a CGP school in ninth grade.

The student level data reported were a list of students served and the interventions received. No details about level of participation in a given intervention or length of engagement in the intervention were reported. These data reported by CGP schools were correlated with records from CDE's End-of-Year data collection to answer the four research questions below.

Results

Research Question 1: What and how many methods, tactics, and targeted interventions did students in CGP schools receive? What were the most typical combinations?

CGP dosage is a combination of the methods and tactics that were a focus of the schools in a given year and the targeted interventions a given student received. Many of the methods and tactics can be considered 'universal services' because they are used to identify students and facilitate institutional change. Others are categories of interventions and supports that house the menu of targeted interventions that individual students received.

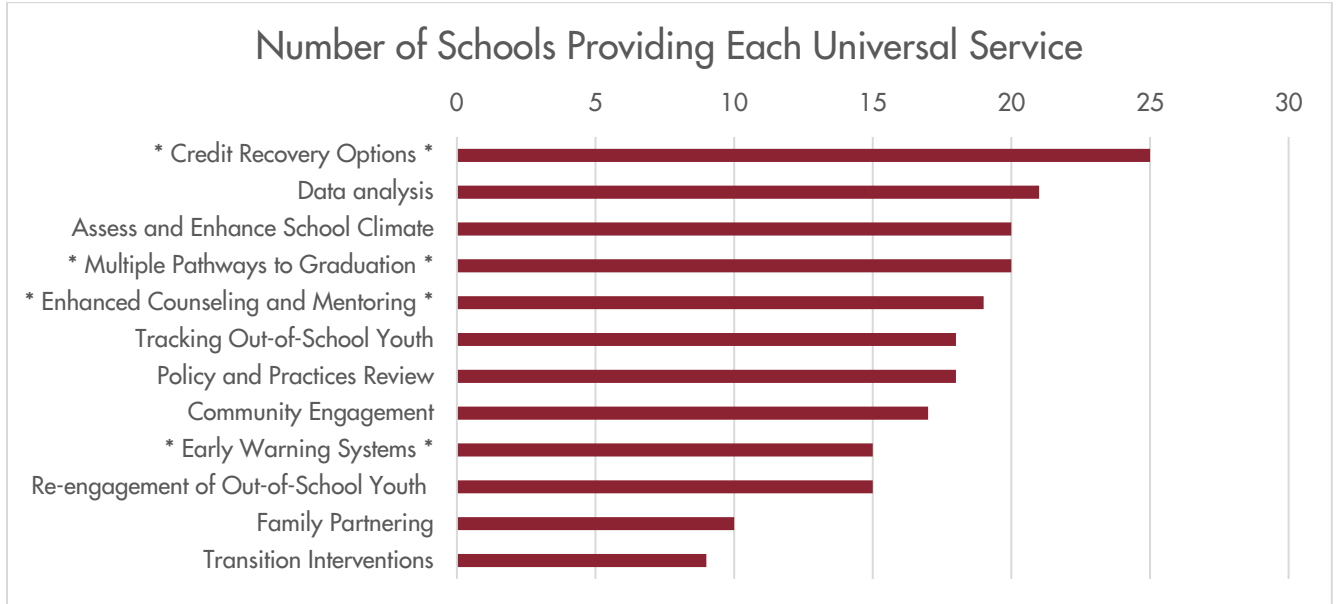
Dosage: methods and tactics (school level)

CGP schools reported implementing on average 6.8 methods and tactics concurrently. Nearly two-thirds of students in the study, 63%, attended a school where six or more methods and tactics were a focus during the 2014-15 academic year. The most commonly reported methods and tactics were Credit Recovery Options, Data Analysis, Tracking Out-of-School, Assess and Enhance School Climate, and Multiple Pathways to Graduation (see Figure 4). Transition interventions were by far the least frequently used



method and tactic. Data were not provided by the CGP schools to CDE indicating if a given method or tactic was truly universally implemented or touched subsets of the school population.

Figure 4



Note. The methods and tactics that were reported at the student level and have targeted interventions associated with them are denoted with an asterisk.

Dosage: targeted interventions (annual sample)

The average number of services received by students was 1.49, with 63% of students receiving at least one intervention. More than half of CGP students received either attendance or credit recovery interventions (Figure 5). Check & Connect was the least frequently implemented intervention, with only 4% of students receiving this intervention (Figure 6).

Targeted interventions were not evenly dispersed across grade levels. As noted in the description of the sample (see p. 8), 38% of the students who received one or more interventions were in 12th grade, 26% were 11th graders, 17% tenth graders, and 19% ninth graders. Due to 12th grade students' overrepresentation in the overall programming, they account for the majority of slots in most targeted interventions and received three or more interventions during the same academic year at a higher rate than all other grades combined (Figure 5).

A closer look at the interventions delivered by grade level might inform future guidance on balancing interventions across grade levels (Figures 7 and 8). Credit recovery was the most frequently delivered targeted intervention to first-time ninth graders.



Figure 5

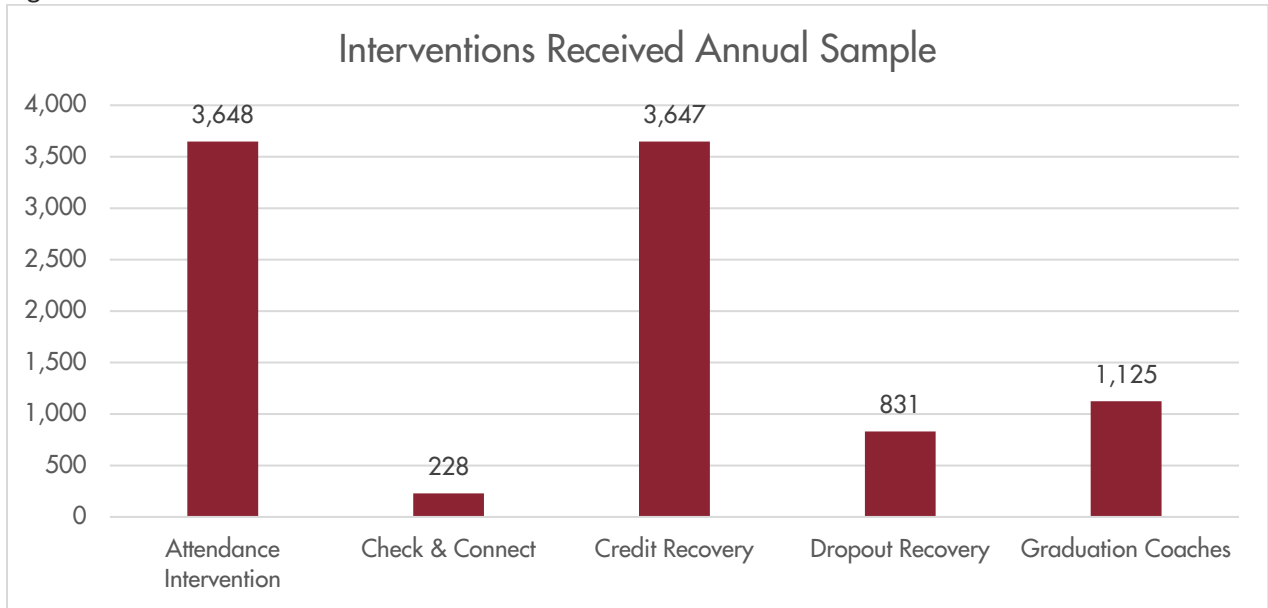


Figure 6

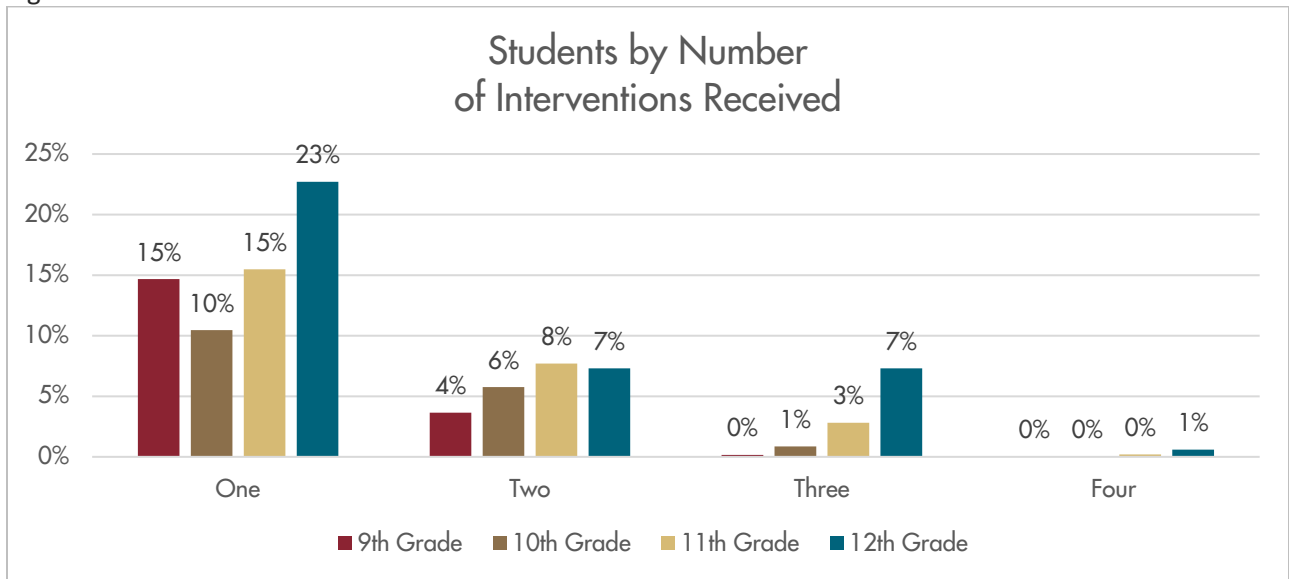
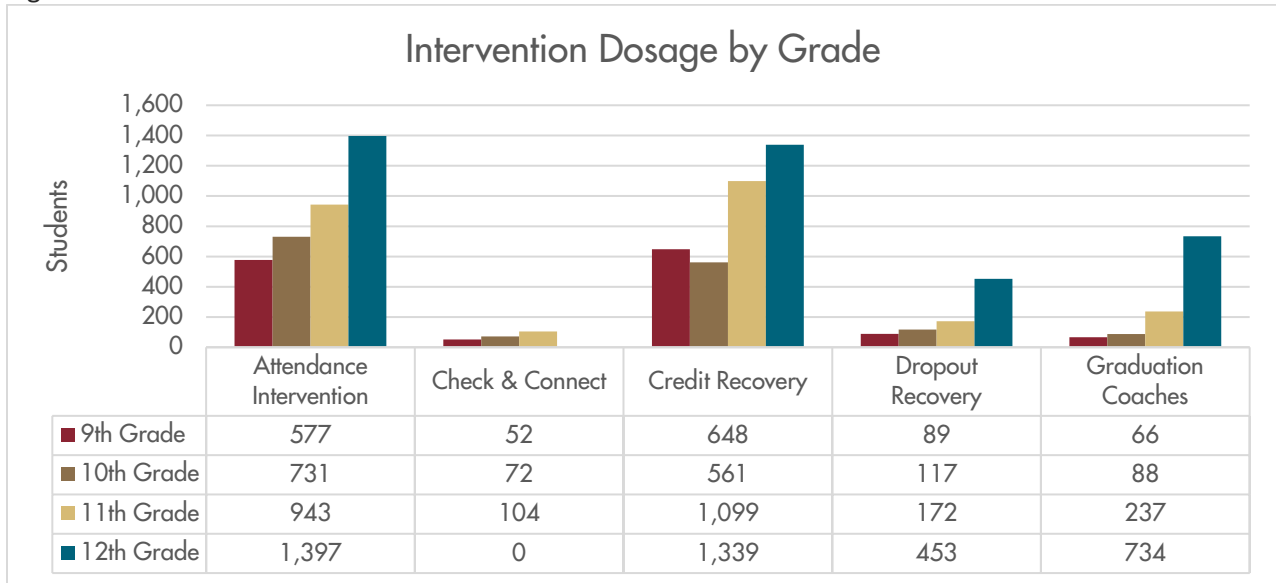




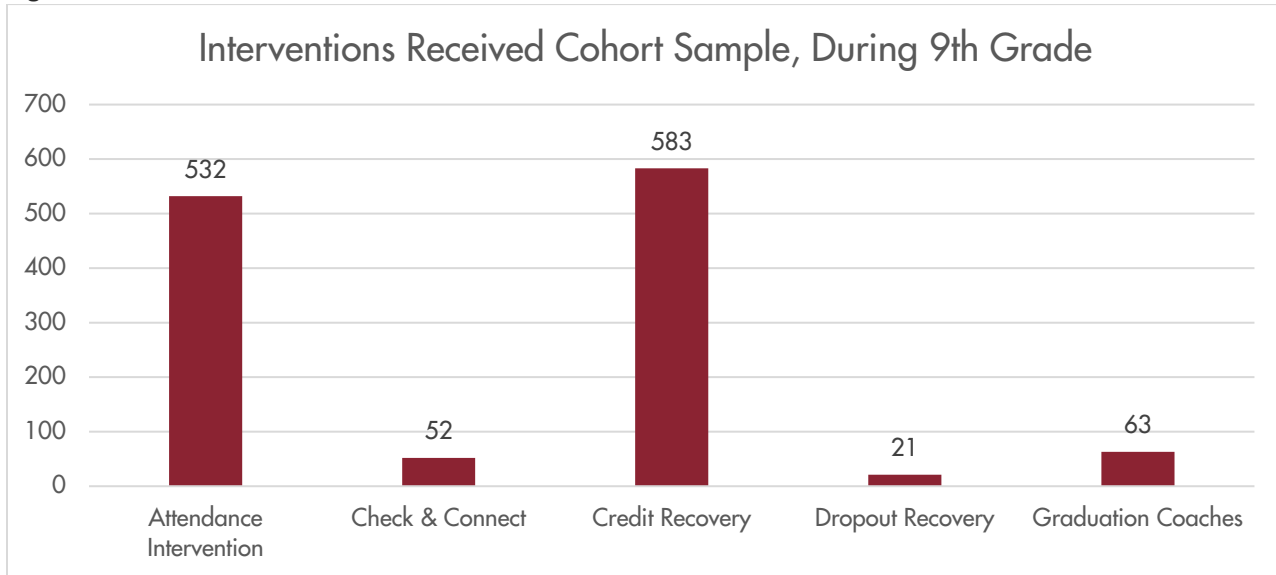
Figure 7



Dosage: targeted interventions (cohort sample)

For the ninth-grade cohort, the average number of interventions was 1.16, with 85% of students receiving one intervention and 15% receiving more than one.

Figure 8



Note. Information is not available on the interventions students in the cohort sample received after the school year when they initially entered ninth grade.



Combinations of methods, tactics, and targeted interventions

A crosswalk of methods and tactics reported at the school level with targeted interventions reported at the student level for the annual sample, which includes all high school grade levels (Figure 9), and the cohort sample, which includes only first-time ninth graders (Figure 10), illustrates patterns in service combinations.

The attendance interventions were most common in schools where multiple pathways to graduation and credit recovery services were available. All schools offering Check & Connect indicated that they also used data analysis, school climate, and credit recovery services. The credit recovery interventions were most common at schools where school climate services, community involvement, pathways, and credit recovery services were available. Dropout recovery interventions were most common at schools that indicated re-engagement and credit recovery. Graduation coaching interventions were typically found in combination with multiple methods.

Check & Connect was conceptualized as part of the Enhanced Counseling and Mentoring method and tactic (see Figure 1 on p 7). Figures 9 and 10, however, suggest that schools might conceptualize this targeted intervention differently, perhaps as Data Analysis.

Figure 9

	Attendance Intervention	Check & Connect	Credit Recovery	Dropout Recovery	Graduation Coaching
Annual Analysis					
Data analysis	39%	100%	55%	72%	66%
Early Warning Systems	38%	25%	49%	67%	46%
Tracking Out-of-School Youth	46%	0%	51%	71%	83%
Assess and Enhance School Climate	60%	100%	79%	74%	94%
Policy and Practices Review	56%	25%	61%	75%	94%
Community Engagement	35%	25%	23%	67%	60%
Family Partnering	44%	25%	69%	31%	84%
Transition Interventions	25%	25%	34%	31%	37%
Multiple Pathways to Graduation	89%	25%	75%	70%	94%
Re-engagement of Out-of-School Youth	34%	25%	52%	97%	43%
Enhanced Counseling and Mentoring	57%	25%	46%	74%	99%
Credit Recovery Options	87%	100%	86%	98%	63%

Figure 10

	Attendance Intervention	Check & Connect	Credit Recovery	Dropout Recovery	Graduation Coaching
9 th Grade Cohort					
Data analysis	23%	100%	78%	67%	100%
Early Warning Systems	23%	0%	72%	57%	25%
Tracking Out-of-School Youth	20%	0%	65%	67%	81%
Assess and Enhance School Climate	29%	100%	81%	67%	29%
Policy and Practices Review	19%	0%	67%	71%	22%
Community Engagement	14%	0%	8%	62%	22%



9 th Grade Cohort	Attendance Intervention	Check & Connect	Credit Recovery	Dropout Recovery	Graduation Coaching
Family Partnering	23%	0%	69%	29%	5%
Transition Interventions	19%	0%	62%	19%	78%
Multiple Pathways to Graduation	88%	0%	85%	62%	25%
Re-engagement of Out-of-School Youth	14%	0%	67%	100%	81%
Enhanced Counseling and Mentoring	29%	0%	18%	71%	100%
Credit Recovery Options	94%	100%	97%	100%	100%

Note. Two schools did not report on methods and tactics, which may explain some findings, such as 86% of the students who received credit recovery services attended a school that offered Credit Recovery Options services.

Research Question 2: What disproportionality exists in service delivery?

Examining disproportionality through a descriptive lens can guide conversations about equity and access. In particular, this information might be used in combination with data on dropout rates and graduation rates.

When disproportionately high participation in target services mirrors the need to accelerate progress based on historical data, that is a good indicator of programs being targeted at known need.

Conversely, lack of disproportional participation in services when there is a known need to accelerate progress might prompt exploring opportunities to expand investments in the future.

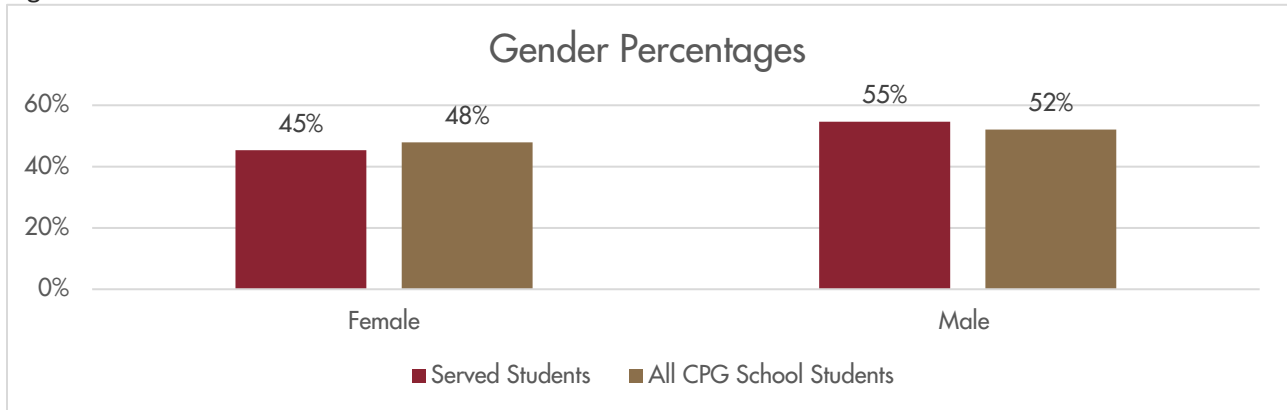
Gender

Female students were underrepresented and male students were overrepresented in the general service population. This disproportionality in service delivery aligns with the statewide data that indicate that males consistently dropout at a higher rate than females, which suggests a need to deliver targeted interventions to proportionally more males³.

³ Colorado Department of Education (2016). *2014-15 State Policy Report: Dropout Prevention and Student Engagement*. Retrieved from the Colorado Department of Education website: <https://www.cde.state.co.us/dropout-prevention/2015dropoutpreventionpolicyreport>

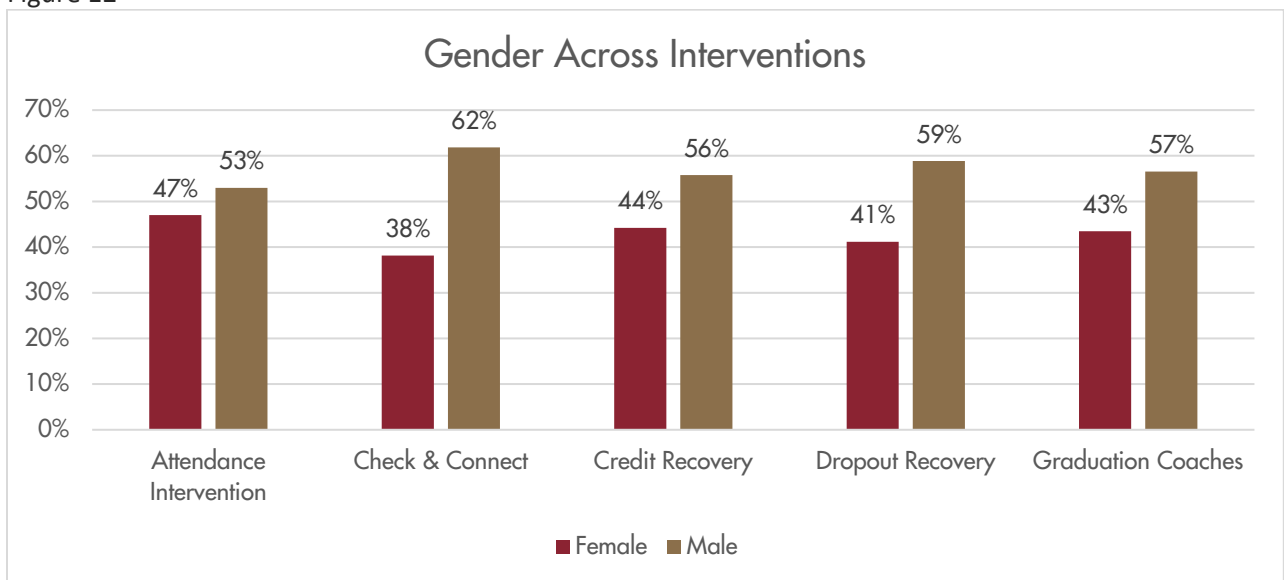


Figure 11



The emphasis on providing targeted male students was not evenly distributed across interventions; Check & Connect and dropout recovery interventions were provided most often to males. Female students only accounted for 38% and 41% of Check & Connect and dropout recovery interventions, respectively.

Figure 12

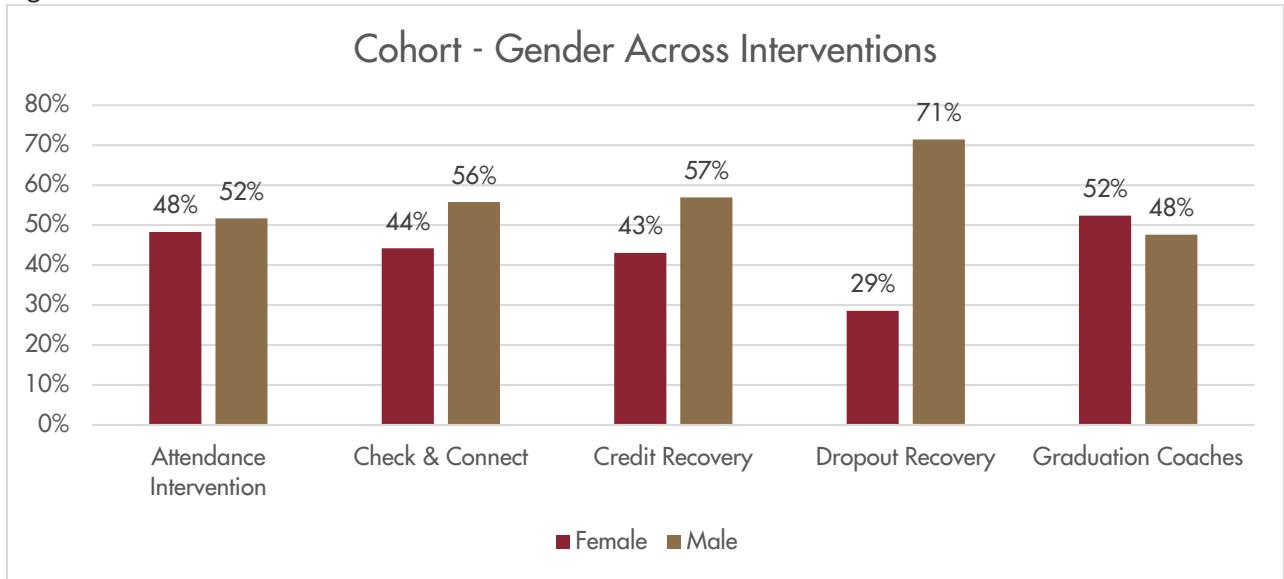


Note. Graduation coaching was the only intervention where the differences in participation by gender were not statistically significant.

Although most of the gender differences in the ninth-grade cohort were not statistically significant, Figure 13 is included because patterns diverged from the annual sample. Credit recovery was the only intervention where the higher proportion of males was statistically significant. The lack of statistical significance here is likely due to small sample sizes within some of the interventions (e.g. dropout recovery with only 21 students).



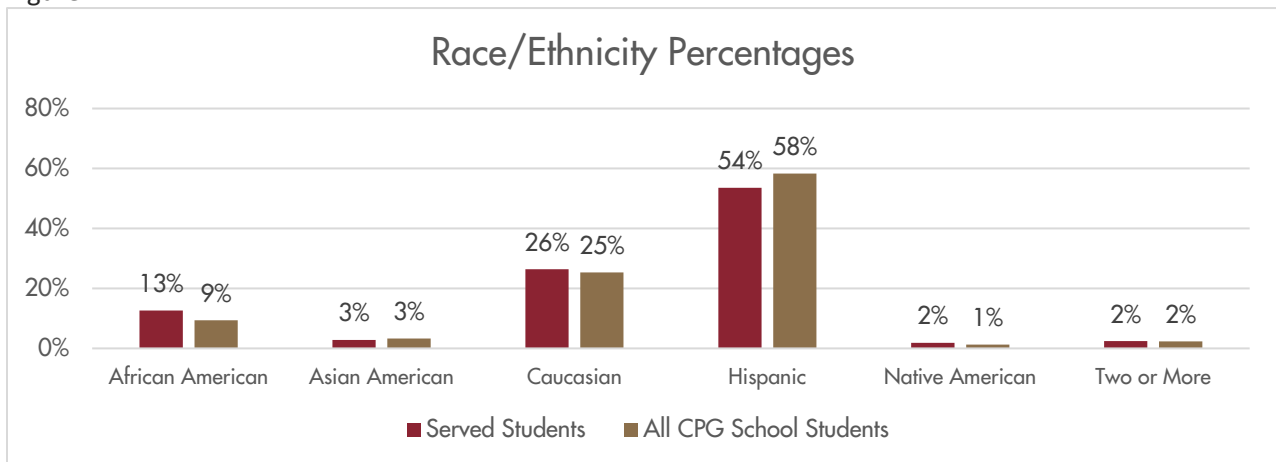
Figure 13



Race/Ethnicity

African American students and Native American Students* were overrepresented, while Hispanic students were underrepresented in overall service delivery. The statewide data on dropout rates determine that Hispanic students are also a group who would benefit from more targeted interventions as their dropout rates are consistently above the state average⁴.

Figure 14



Note. *The Native American findings of overrepresentation was not statistically significant, but that is likely a reflection of sample size. Practically the emphasis on providing services to Native American students is clear in the data.

⁴ Colorado Department of Education (2016). *2014-15 State Policy Report: Dropout Prevention and Student Engagement*. Retrieved from the Colorado Department of Education website: <https://www.cde.state.co.us/dropout-prevention/2015dropoutpreventionpolicyreport>

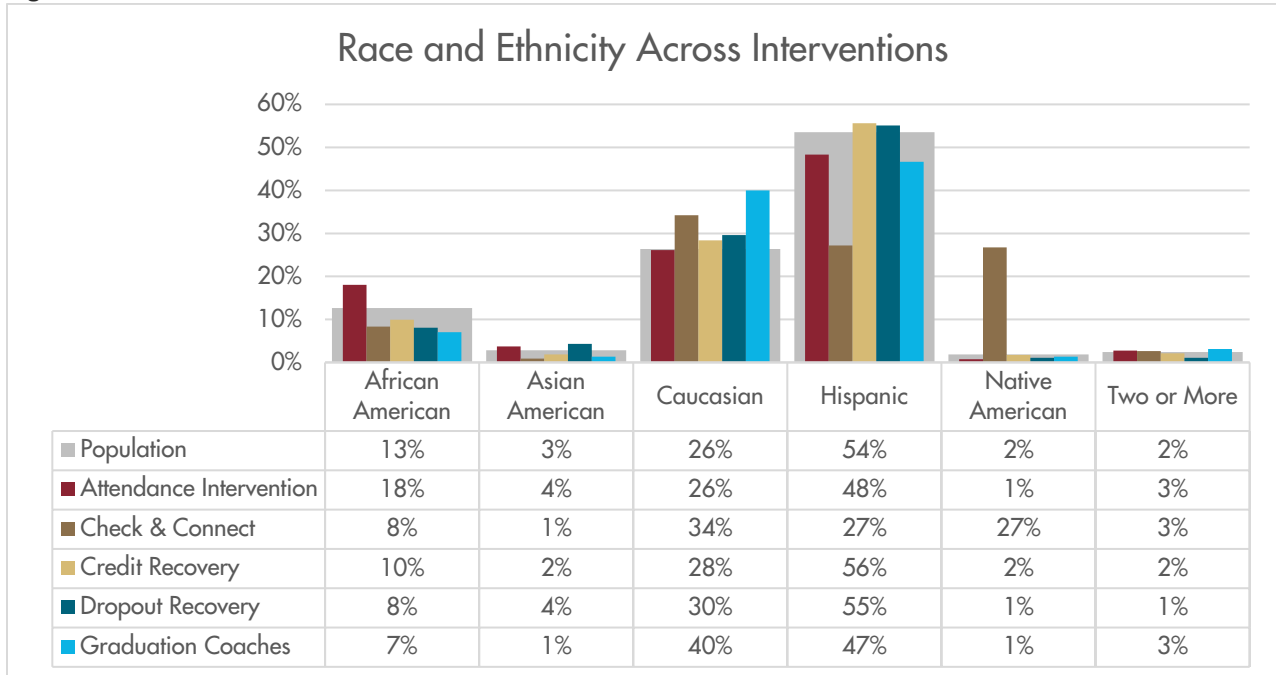


A closer look at how the disproportionality in service delivery is dispersed across interventions can guide conversations that may inform future program planning and investments. African American students were overrepresented in attendance interventions and underrepresented in all other interventions. Caucasian students were overrepresented in Check & Connect and graduation coaching. The overrepresentation of Caucasian students in Check & Connect is particularly noteworthy because it is the approach with the strongest evidence base and this group of students tends to have low dropout rates. Hispanic students were underrepresented in attendance interventions, Check & Connect, and graduation coaching, with a slight overrepresentation in both credit and dropout recovery services. Native Americans accounted for 27% of the total students receiving Check & Connect (61 of 228 total) and were slightly underrepresented in all other interventions except credit recovery.

Throughout the report, a large gray bar is used as an anchor for chart comparisons.

This bar represents the overall group population, which gives context for various breakout comparisons.

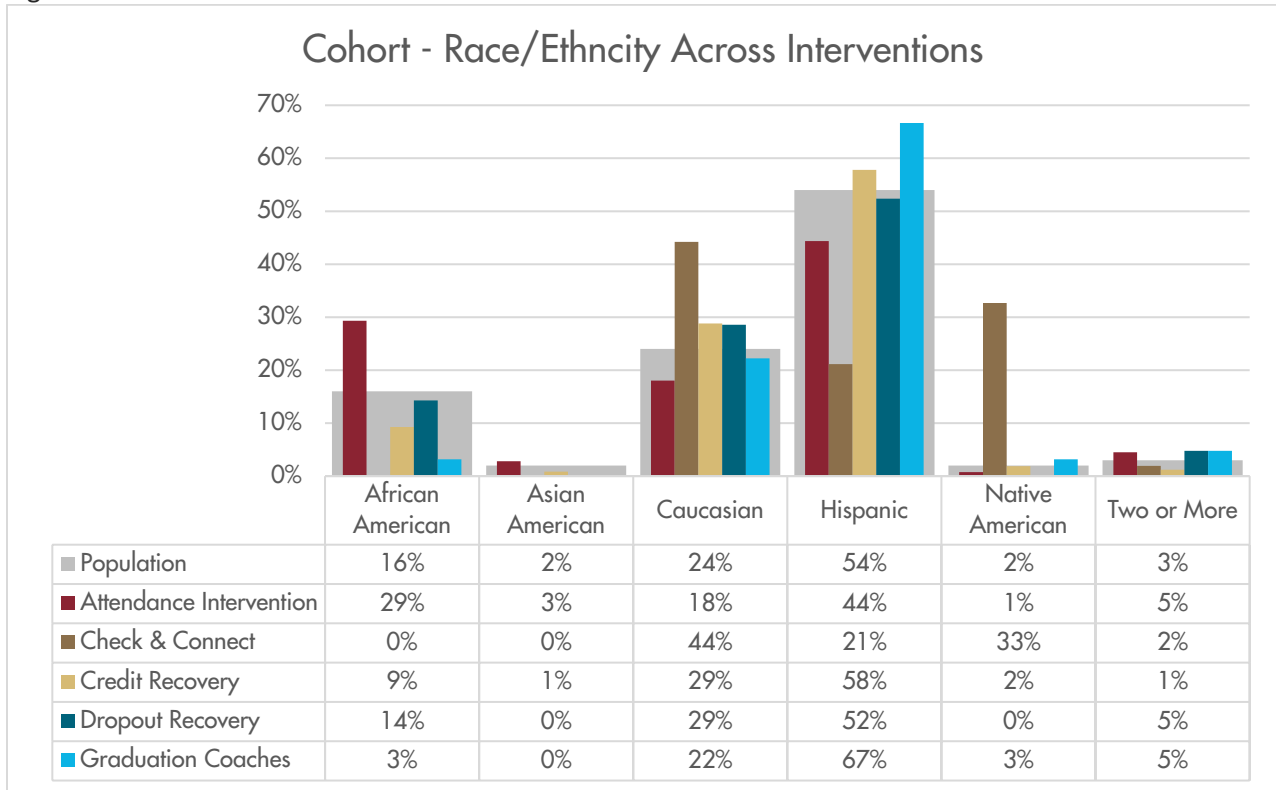
Figure 15



Race and ethnicity showed differing patterns for the ninth-grade cohort compared to the overall annual sample. Race and ethnicity differences across the interventions were significant for attendance interventions, Check & Connect, and credit recovery interventions.



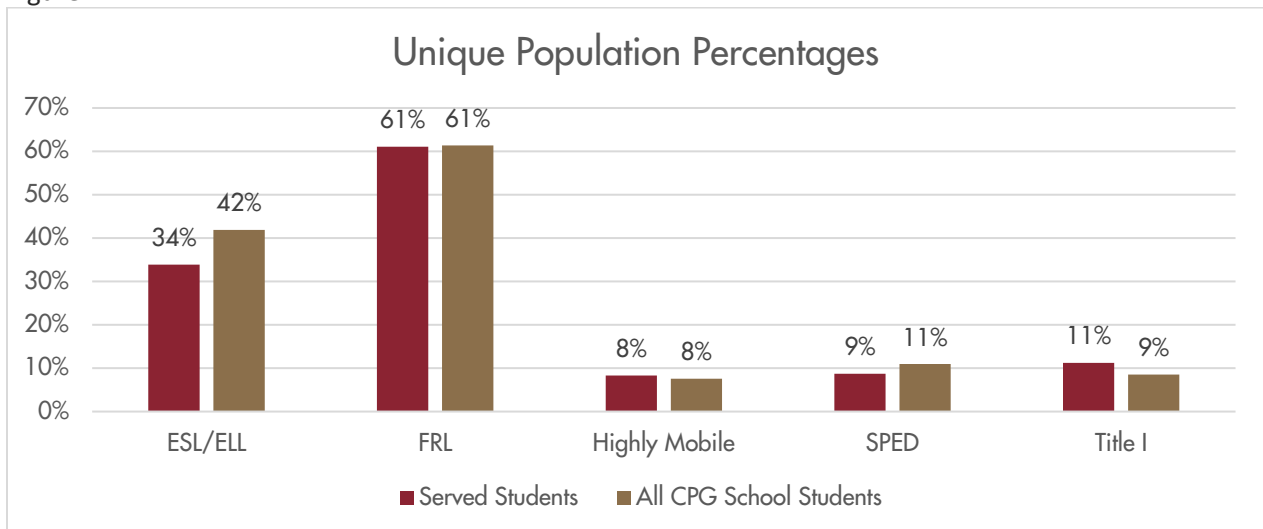
Figure 16



Unique Student Populations

Across the various unique student populations, ESL/ELL students and special education students were underrepresented. Title I students were overrepresented. The overrepresentation of Title I students aligns with historical need to improve the dropout rates for these unique population of students (Colorado Department of Education, 2016). More emphasis on providing services to highly mobile students is needed because their dropout rates tend to the highest statewide (Colorado Department of Education, 2016).

Figure 17

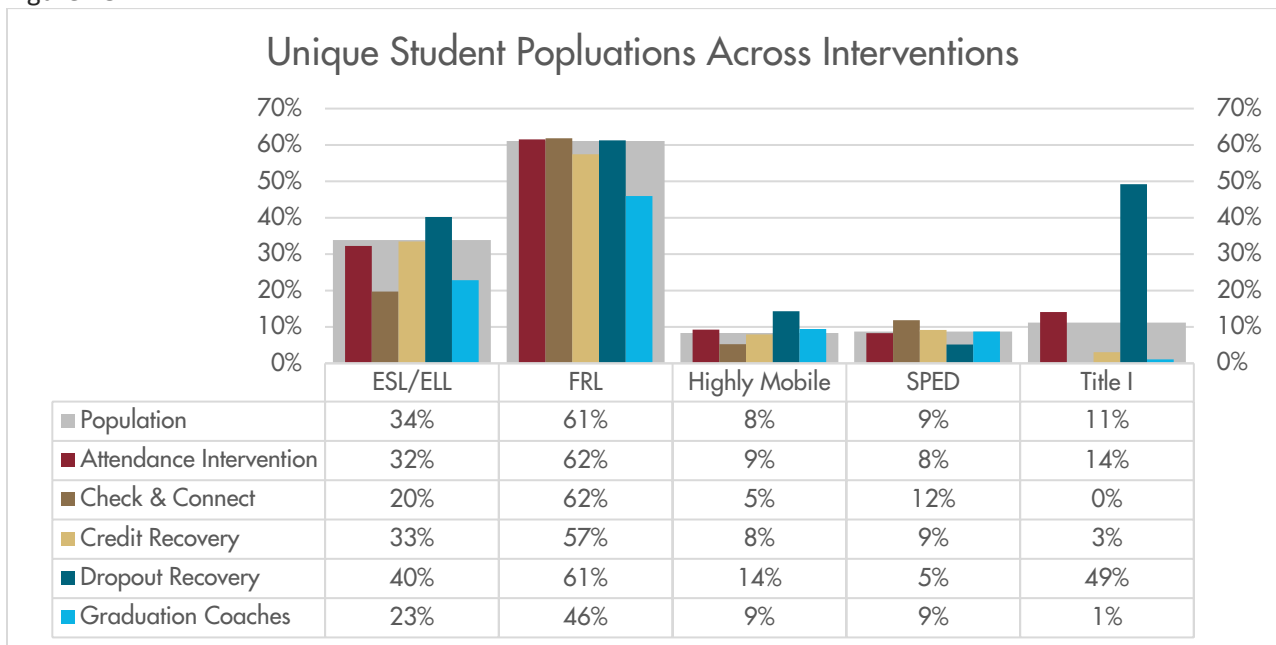




The disproportionality in delivery of targeted interventions suggests a tendency to focus on reactive rather than preventative services for ESL/ELL, highly mobile, and Title I student populations. ESL/ELL students were overrepresented in dropout recovery and were underrepresented in all other interventions except for credit recovery. Students who qualified for an FRL were underrepresented in credit recovery and graduation coaching. Highly mobile students were underrepresented in Check & Connect (approaching significance; chi-square 2.905, $p=.088$) and overrepresented in dropout recovery services. Title I students did not receive Check & Connect services and were underrepresented in credit recovery and graduation coaching. This group was overrepresented in both the attendance interventions and dropout recovery, accounting for almost 50% of students in dropout recovery.

Whereas, for students eligible for special education services, data suggests a more concerted focus on dropout prevention. Special education students were overrepresented in Check & Connect (approaching significance; chi-square 2.866, $p=.09$) and underrepresented in dropout recovery services.

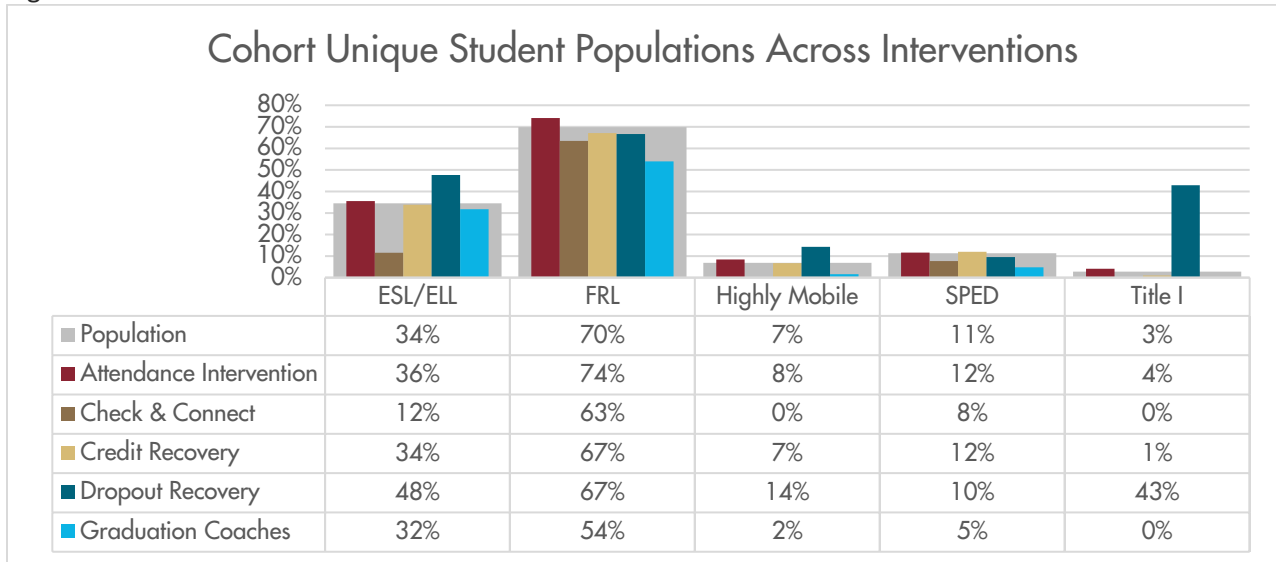
Figure 18



For the ninth-grade cohort, the distribution of unique student populations across and within the interventions was similar to the annual sample.



Figure 19



Research Question 3: On an annual basis, what were the school mobility patterns for students served by the CGP interventions?

The majority of CGP-served students remained in the same school throughout the 2014-15 school year, with only 4% moving two times or more.

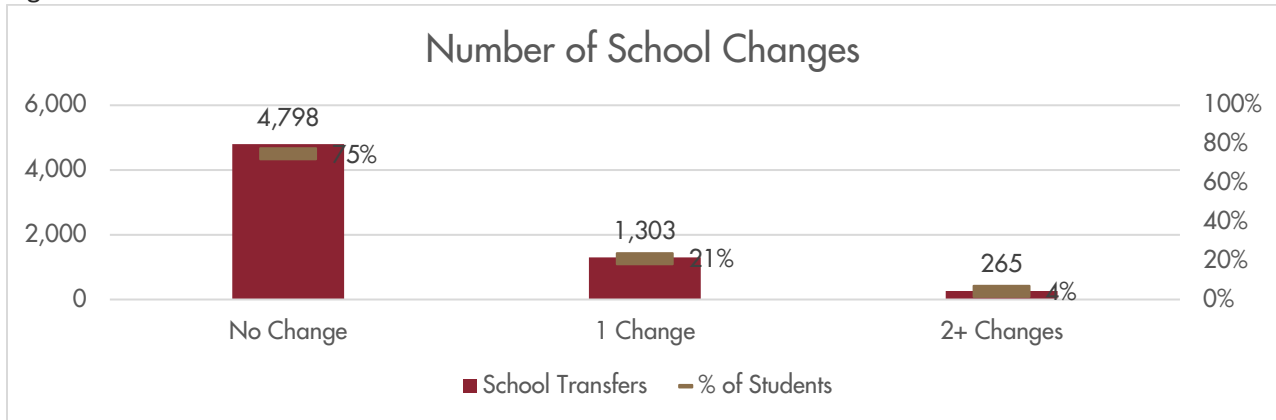
Of the students who changed schools once, 34% moved between CGP schools, 15% transferred into a CGP from a non-CGP school, and 53% transferred out of CGP school to a non-CGP school.

School movement was assessed as enrollment during the 2014-15 academic year:

- One CGP school
- Transferred between two CGP schools
- Transferred from a non-CGP school to a CGP school
- Transferred from a CGP school to a non-CGP school
- Attended more than two schools



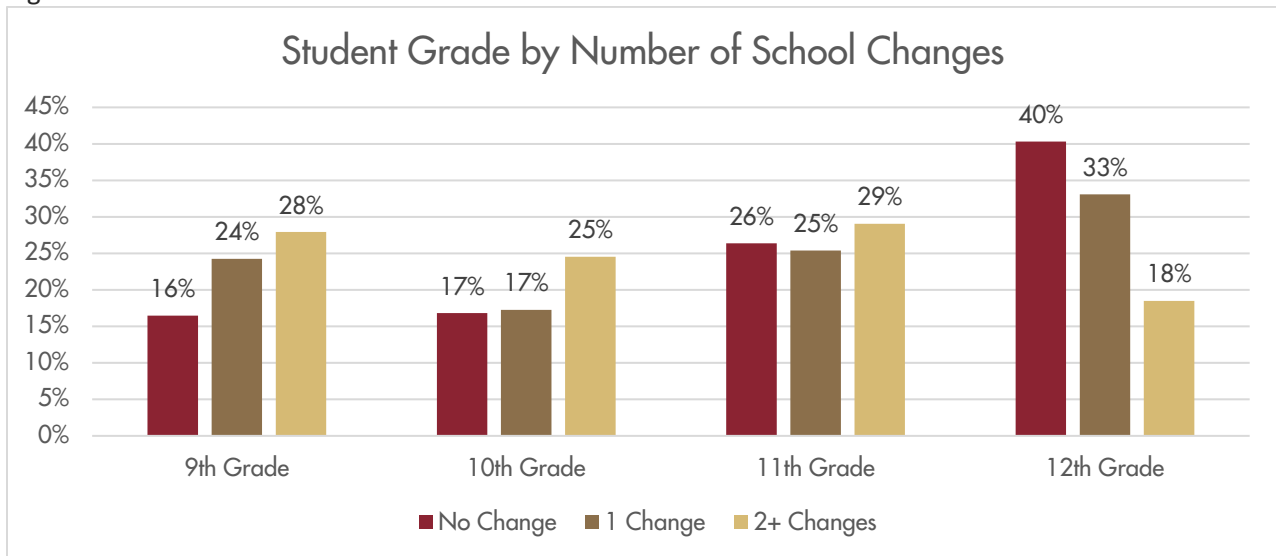
Figure 20



Student Grade

Ninth and 10th grade students. Ninth grade students had the highest rate of any transfer while 10th graders had the lowest proportion of students who transferred out of a CGP school and into a non-CGP school. Twelfth graders had the largest proportion of students who remained in one CGP school.

Figure 21



Gender

In school movements, compared to sample percentages, a higher proportion of female students transferred between CGP schools or attended more than two schools. The differences were not statistically significant when looking at the number of school changes.



Figure 22

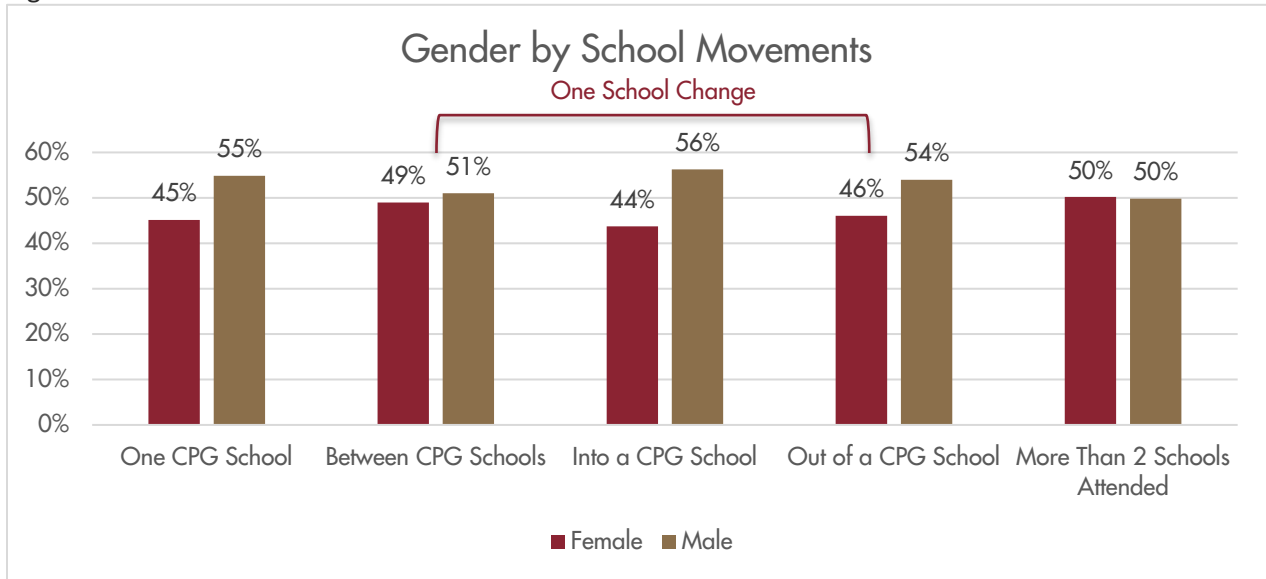
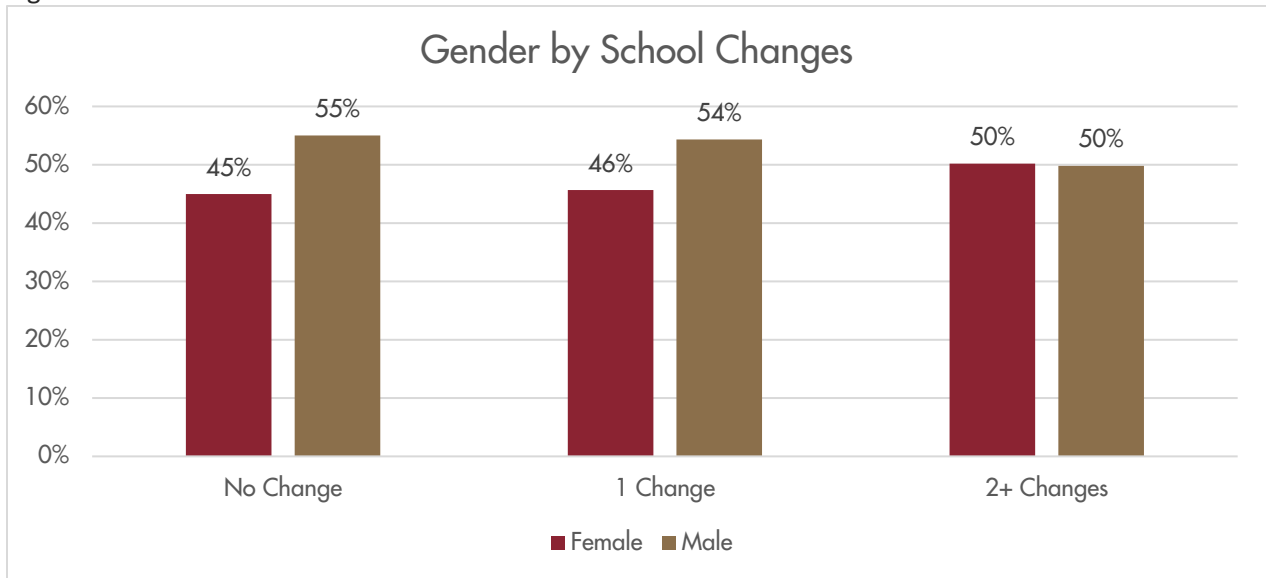


Figure 23





Race/Ethnicity

During the 2014-15 school year, African American students were most likely to remain in the same CGP school. Caucasian students were most likely to transfer into a CGP school. Hispanic students had the highest rates of transfer between CGP schools as well as out of a CGP school and multiple school changes.

Throughout the report, a large gray bar is used as an anchor for chart comparisons.

This bar represents the overall group population, which gives context for various breakout comparisons.

Figure 24

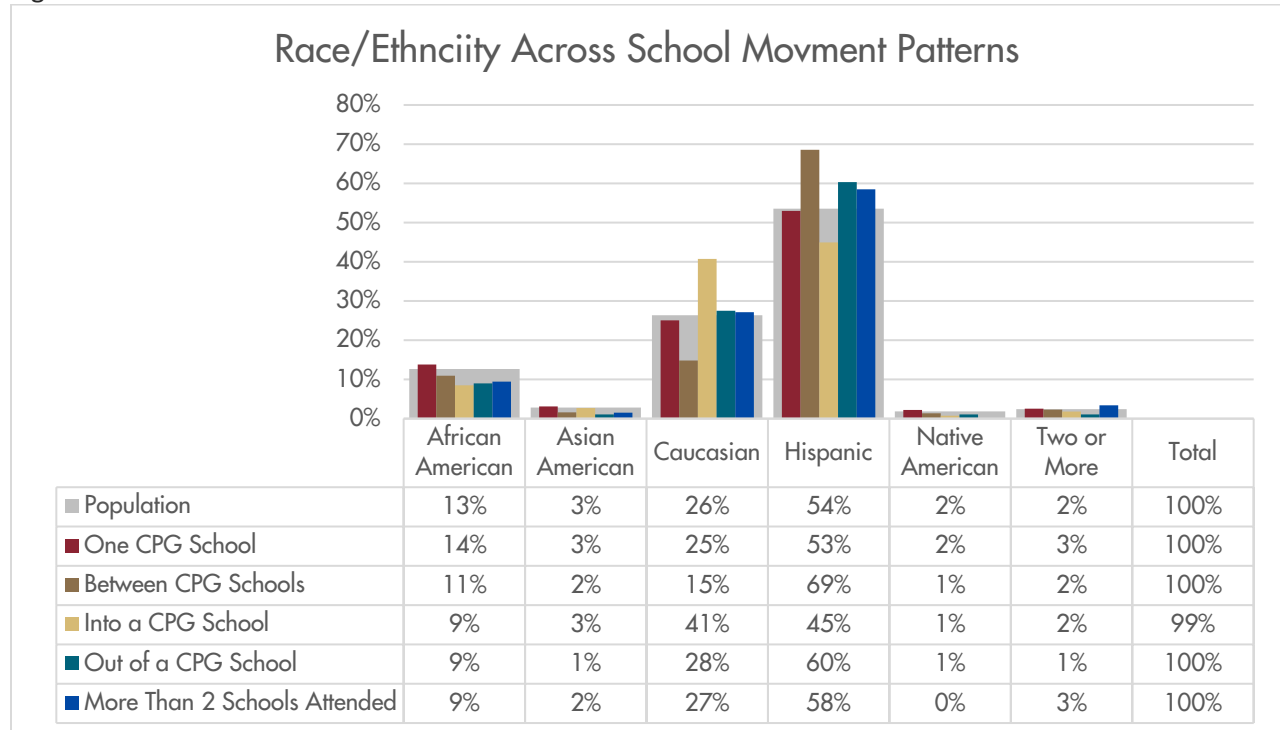
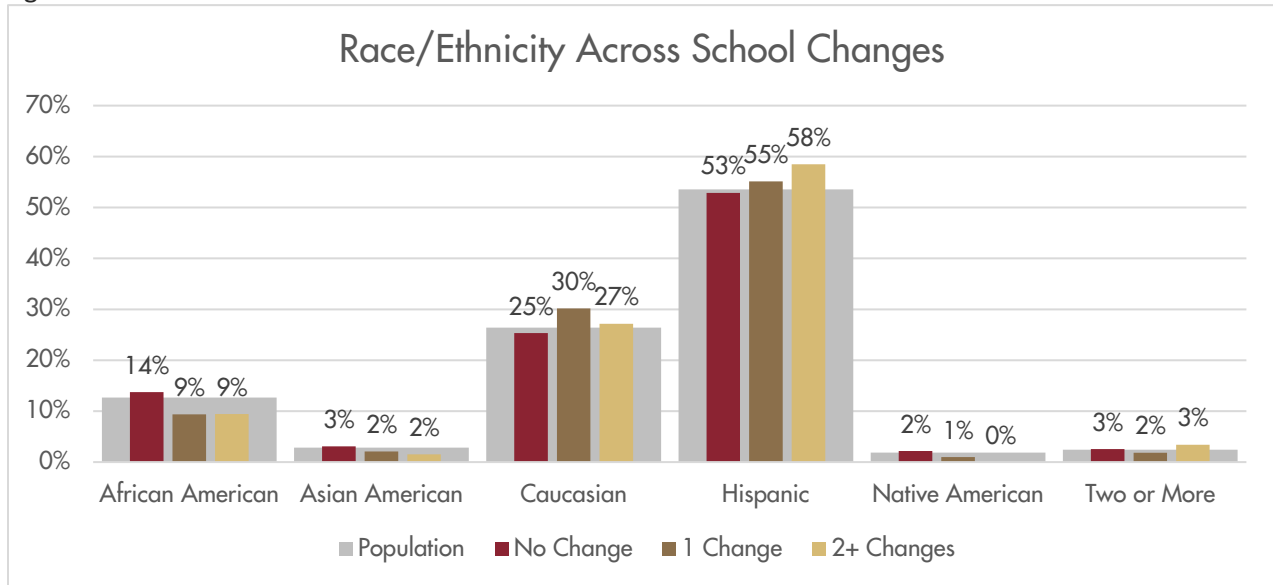




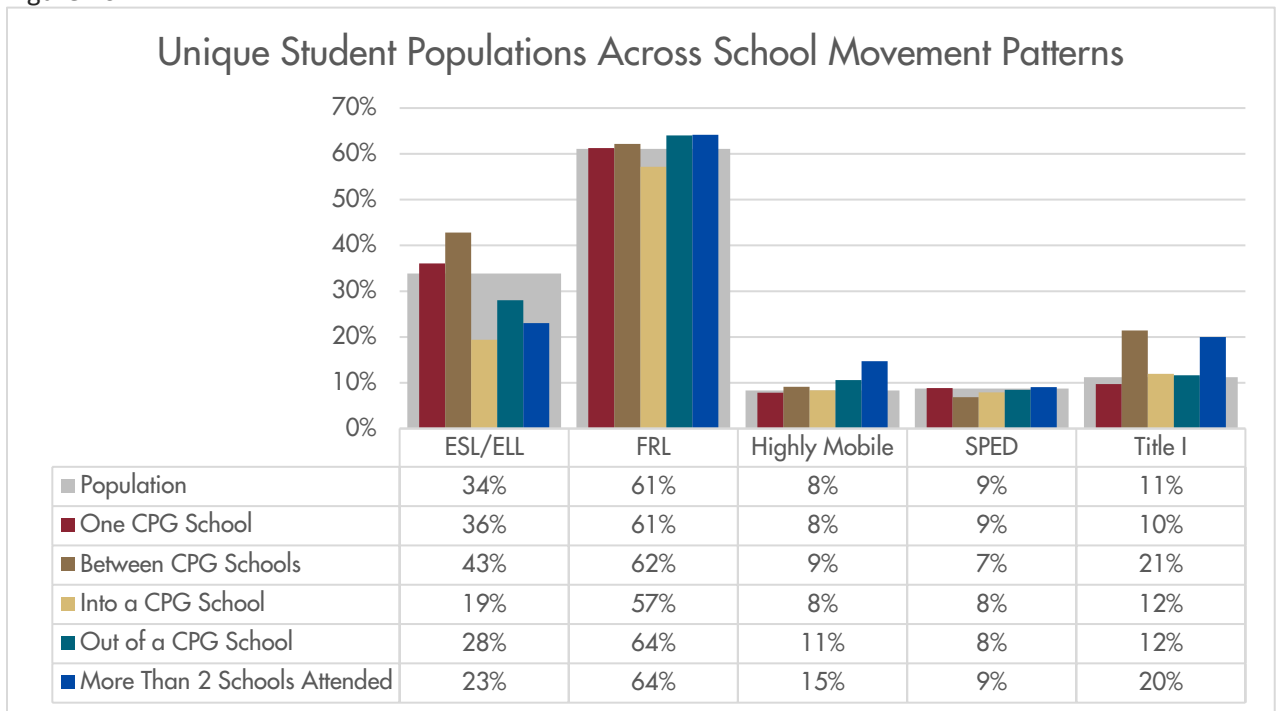
Figure 25



Unique Student Populations

Title I and highly mobile students had the highest rate of multiple school movements. ESL/ELL and Title I students who experienced one school change had disproportionately high rates of transfers between CGP schools.

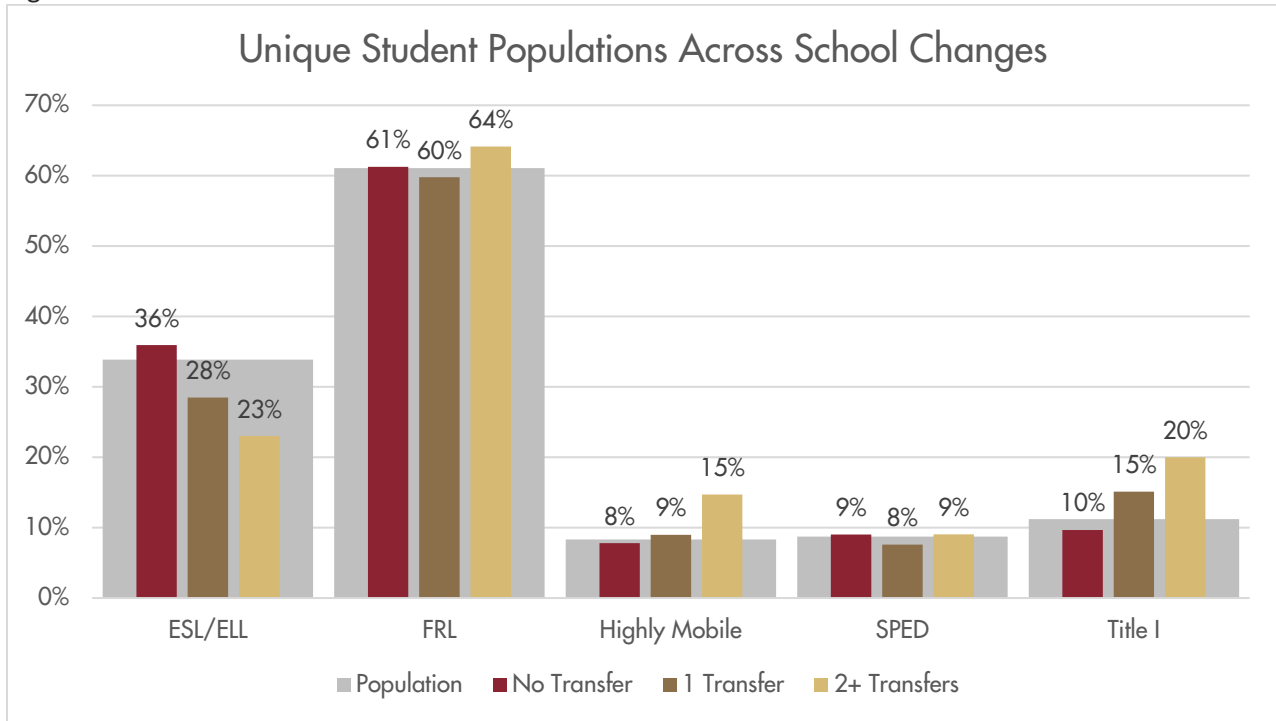
Figure 26



Note. Some students may be represented in multiple unique populations (e.g., a student could be both highly mobile and eligible for special education services).



Figure 27



Research Question 4: For the cohort of students served by CGP interventions in ninth grade, what were the school mobility patterns throughout their high school experience?

The majority of CGP-served students remained in the same school throughout the 2014-15 to 2017-18 school years (44%) or had one school move (26%). Compared to the annual sample, a larger proportion attended more than two schools (31%). Fifty-eight percent remained in a CGP school. Less than 1% of students did not show a CGP school in the school detail records and are not displayed. The range of school changes was 0-14, with an average of 1.25 changes.

School movement was assessed as enrollment during the 2014-15 to 2017-18 academic years:

- One CGP school
- Moved from a non-CGP school to a CGP school
- Moved from a CGP school to a non-CGP school
- More than two schools attended



Figure 28

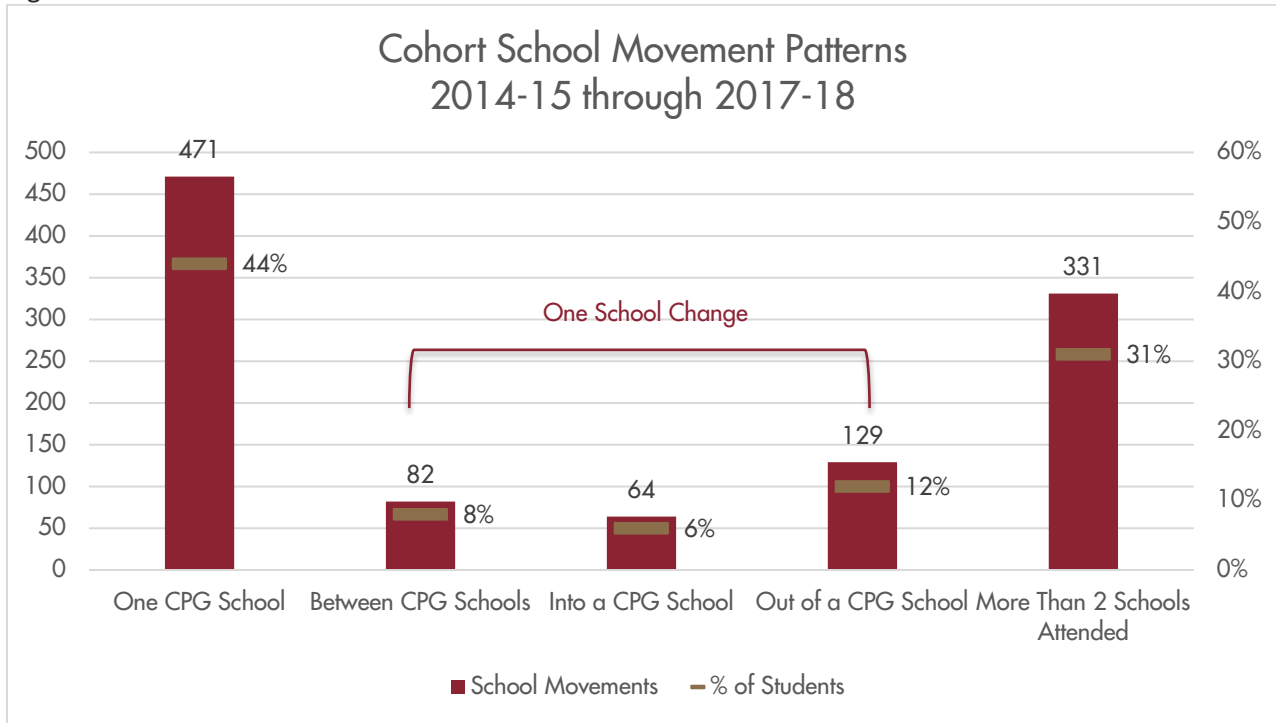
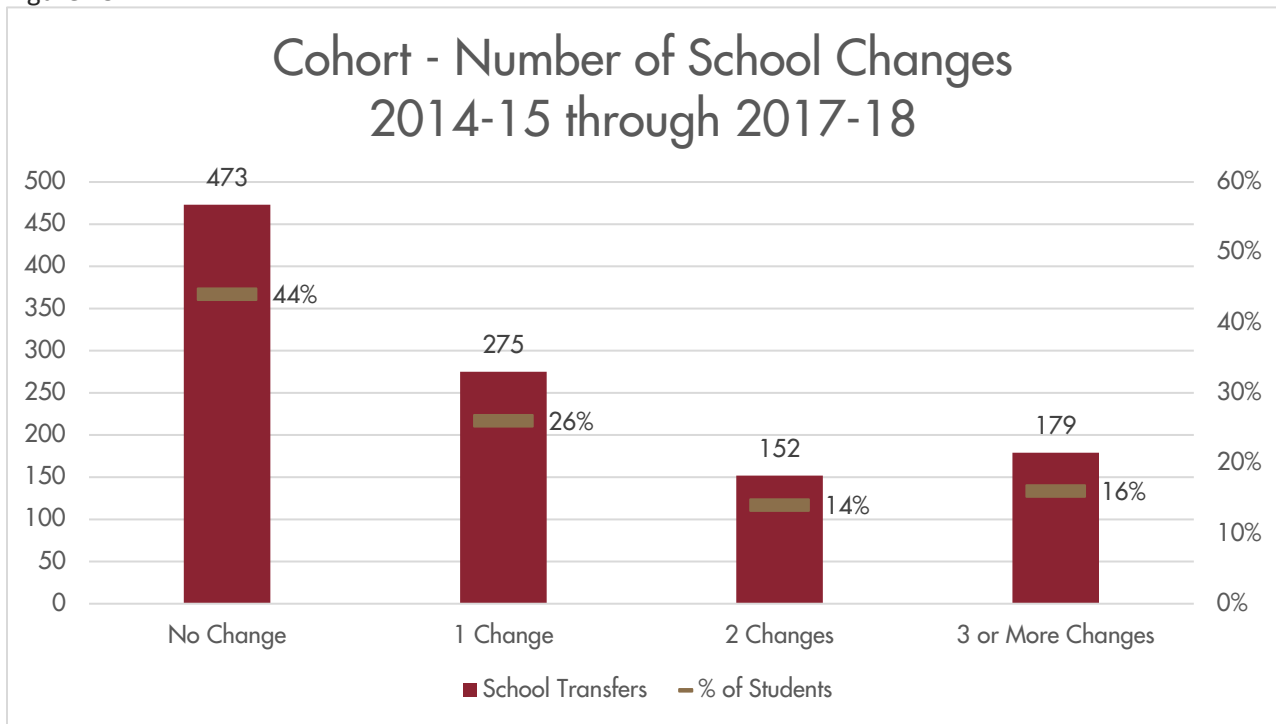


Figure 29





Gender

Gender differences were not statistically significant for either school movement patterns or school changes.

Figure 30

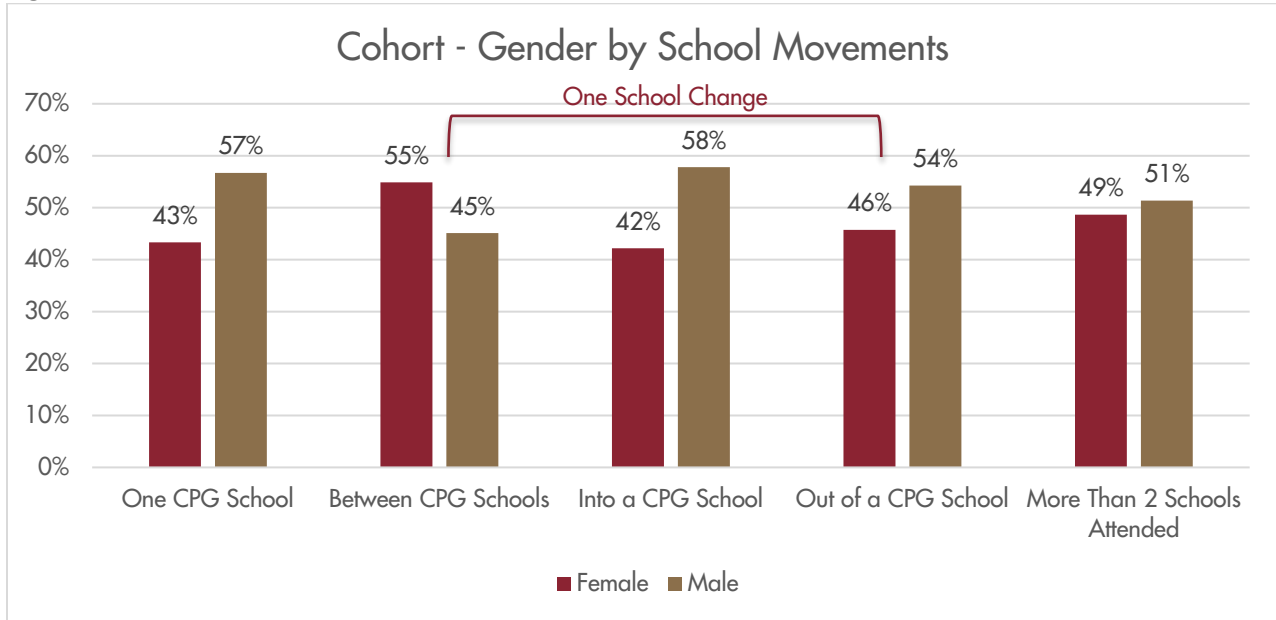
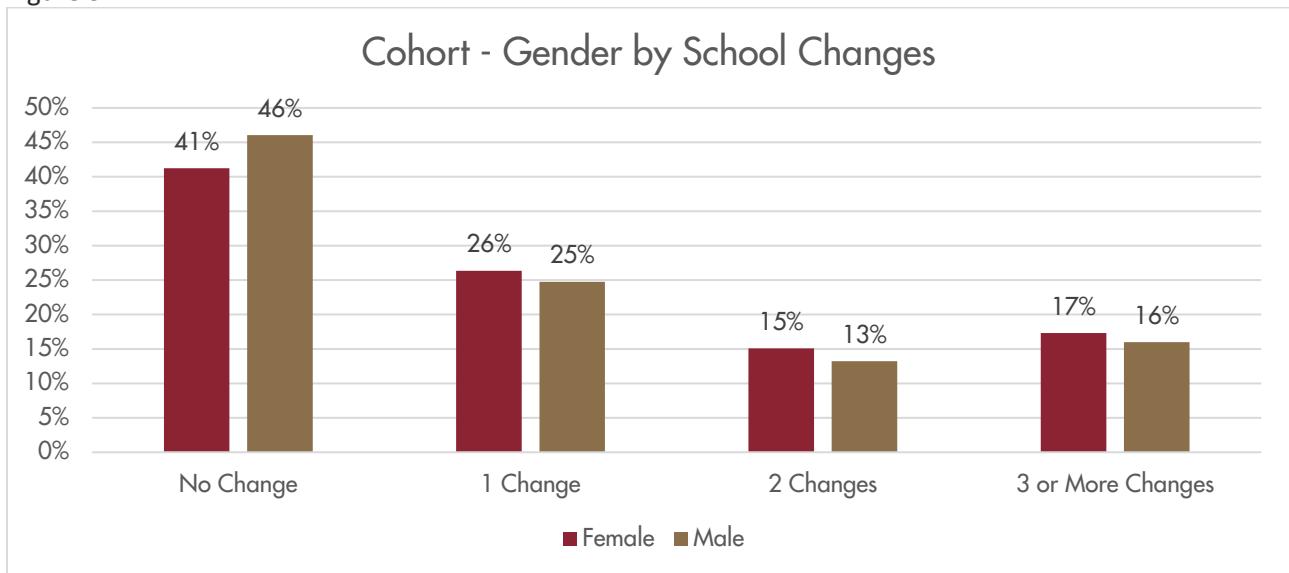


Figure 31





Race/Ethnicity

During the 2014-15 to 2017-18 school years, African American students were overrepresented in moving between CGP schools. Caucasians were overrepresented in remaining in the same CGP school and in moving into a CGP school; they were underrepresented in moving between CGP schools. Hispanic students were overrepresented in moving between CGP schools, moving out of CGP schools, and had the highest rate of multiple transfers.

Throughout the report, a large gray bar is used as an anchor for chart comparisons.

This bar represents the overall group population, which gives context for various breakout comparisons.

Figure 32

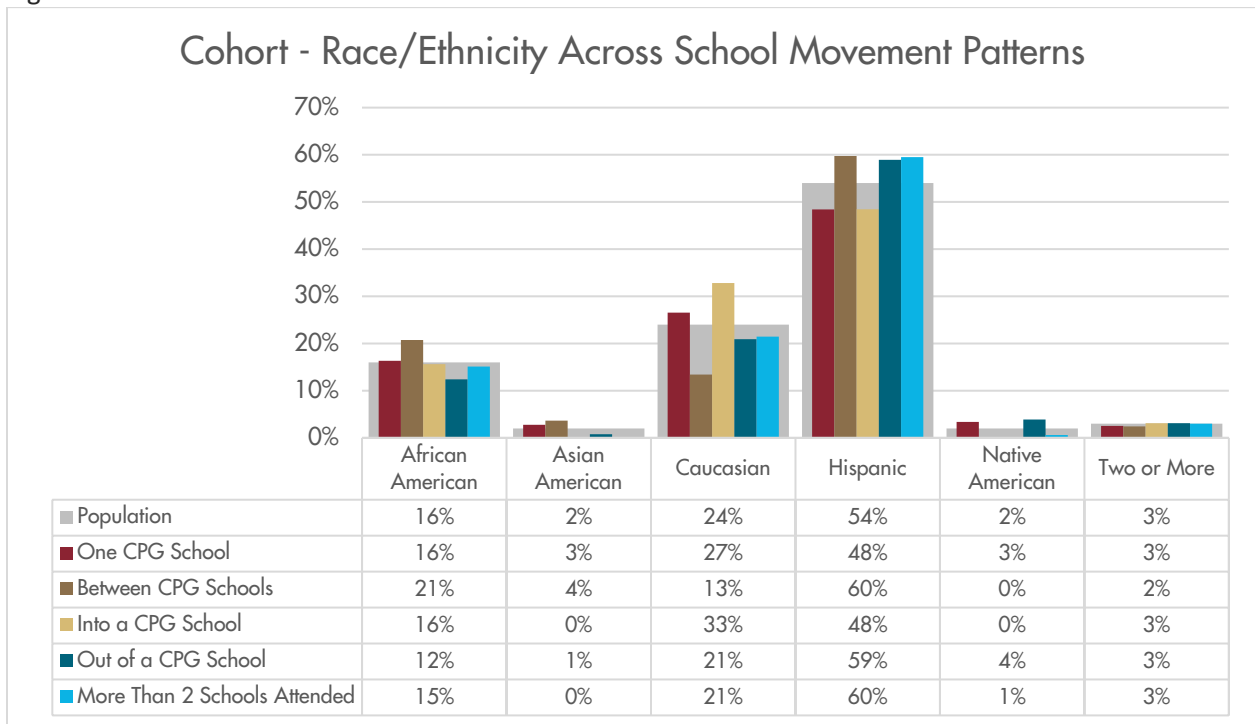
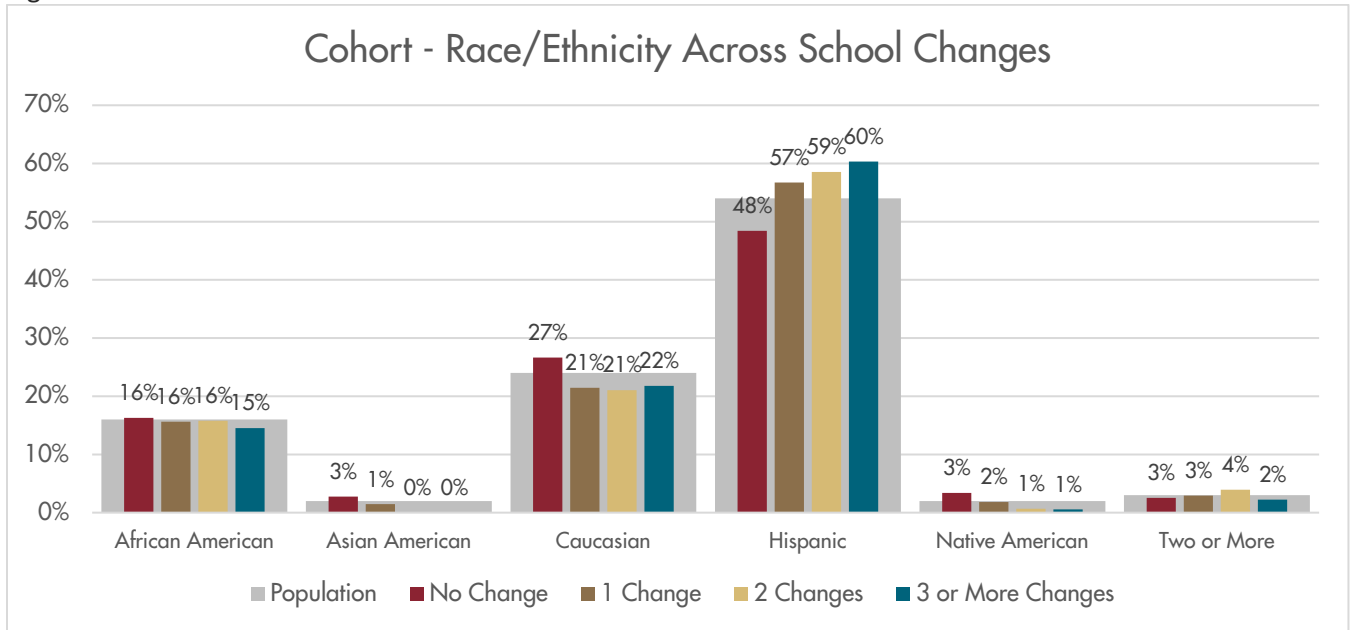




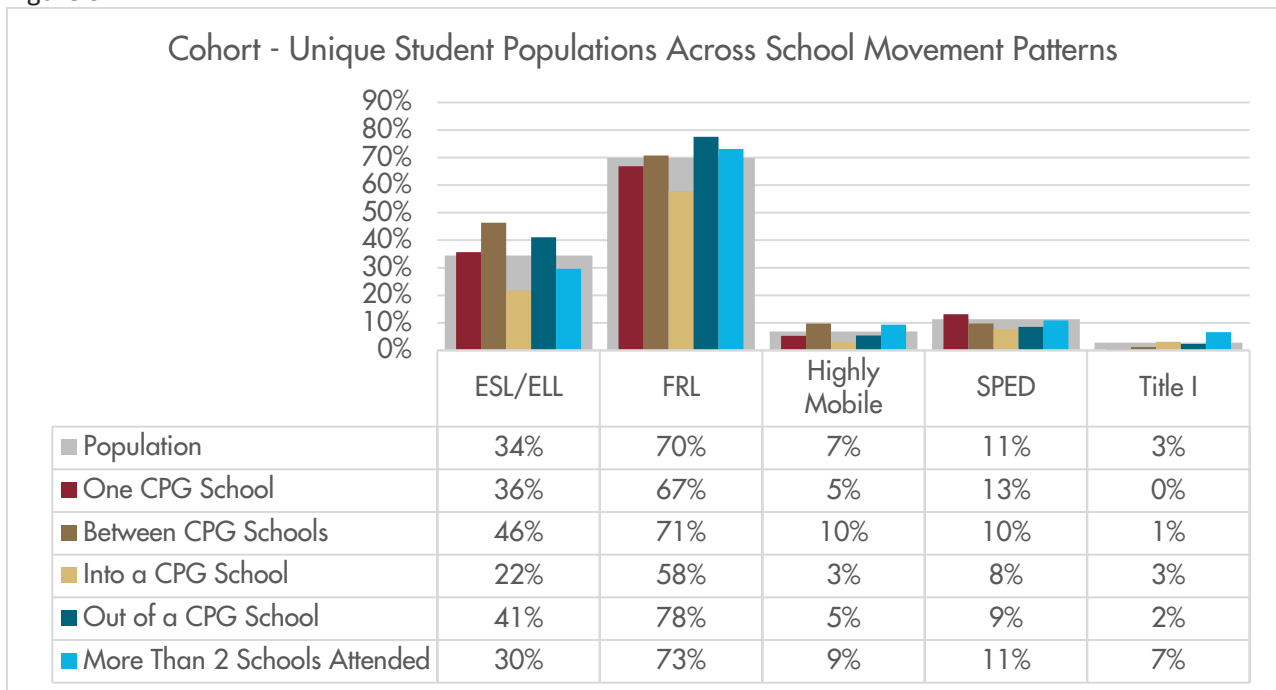
Figure 33



Unique Student Populations

ESL/ELL students had the highest rate of transfer between CGP schools. ESL/ELL and FRL students had the lowest rate of transfer into a CGP school as well as out of a CGP school. Title I students had the highest rate of school transfers.

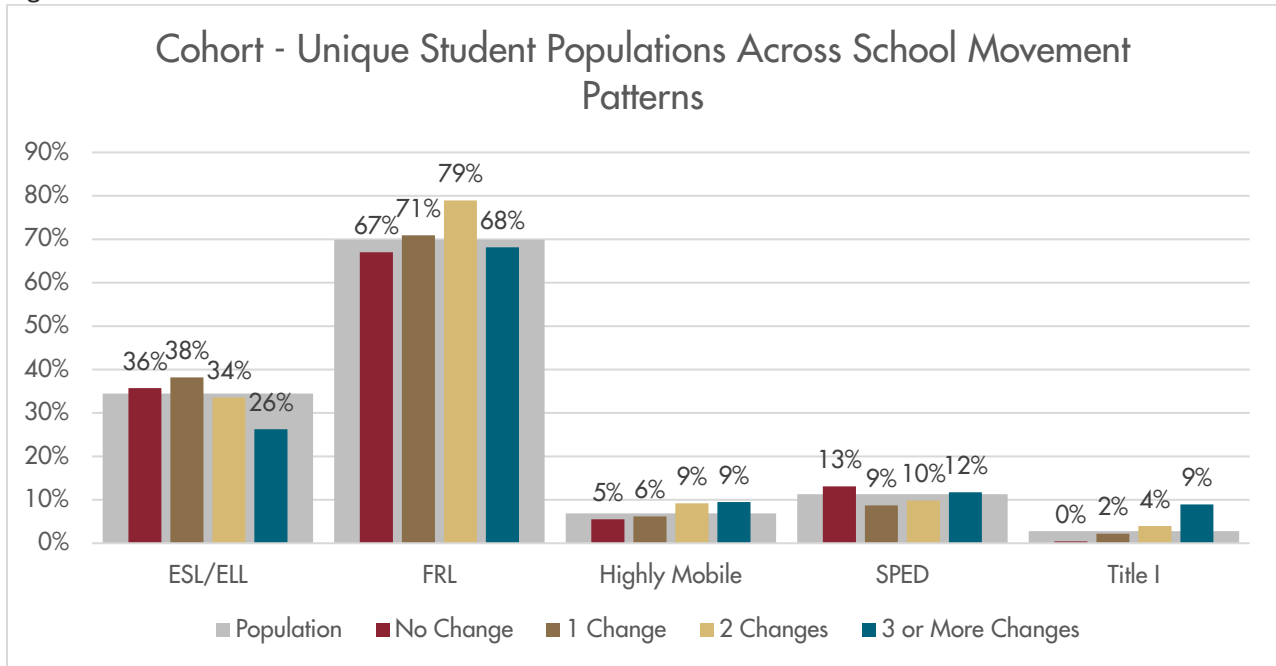
Figure 34

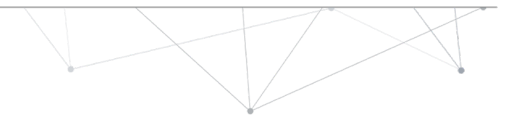


Note. Some students may be represented in multiple unique populations (e.g., a student could be both highly mobile and eligible for special education services).



Figure 35





PART TWO: ANNUAL OUTCOMES

Research Question 5: What are the patterns among targeted interventions, school mobility, and student outcomes at the end of the school year?

Although students may have been exposed to or served behind the scenes by a variety of methods and tactics, only the targeted interventions were reported at the student level. Thus, in this section, only the targeted interventions are separated from the methods and tactics analyses.

Comparisons are also drawn in this section between school mobility and student outcomes because targeted interventions were implemented by CGP schools. Connecting school mobility patterns to student provides important context and can inform future investments in dropout prevention and student re-engagement.

School outcomes were categorized by CDE to group end-of-year outcomes into positive, neutral, or negative outcomes. End-of-year positive outcomes include graduation, obtaining a GED, or continuing with school. Additionally, if at any time during the school year a student returned from school after an extended absence, this is coded as a positive outcome. Neutral educational outcomes include transfers, illness/injury, or death. Negative outcomes include aging out of services, transferring to a detention facility, expulsion, extended absence, or dropping out.

Throughout this report, differences stated in the narrative (e.g., “higher rate”; “overrepresented”) were statistically significant at $<.05$ level. Whereas language implying rank order (e.g., “highest percentage”) is descriptive and does not apply a statistically significant difference.

The specific test-statistics for each comparison are available upon request.

Throughout the report, a large gray bar is used as an anchor for chart comparisons.

This bar represents the overall group population, which gives context for various breakout comparisons.

The outcomes across all of the interventions was overwhelmingly positive with 85% of students ending the 2014-15 school year with a positive outcome (Figure 36). Twelfth graders accounted for 59% of the negative outcomes, which is much higher than their percentage in the population served (38%) [see Figure 37].



Figure 36

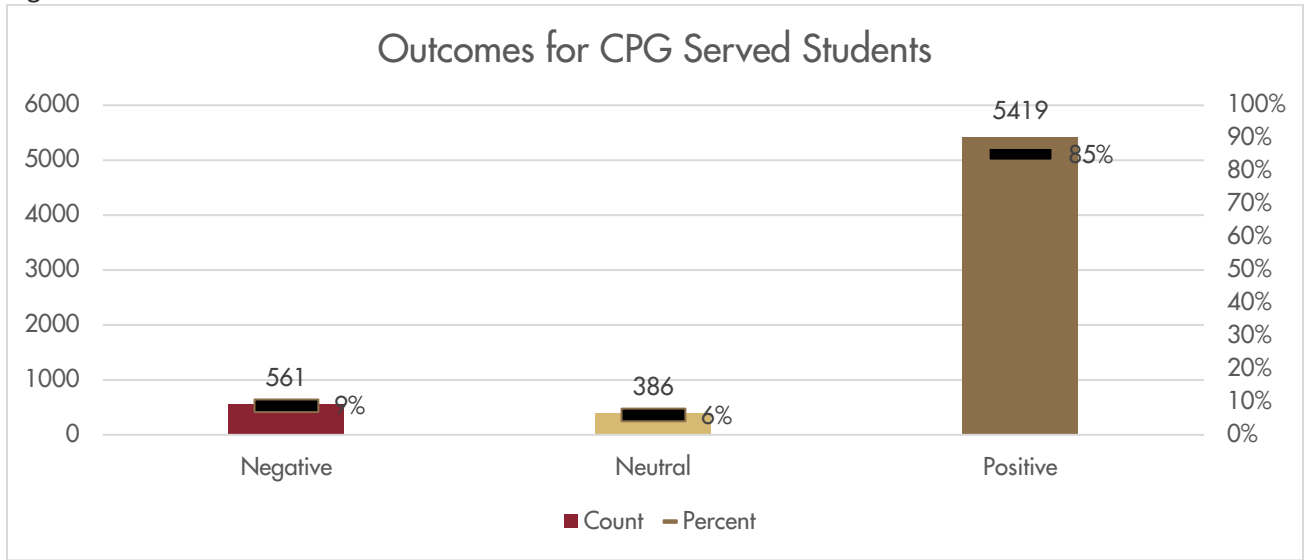
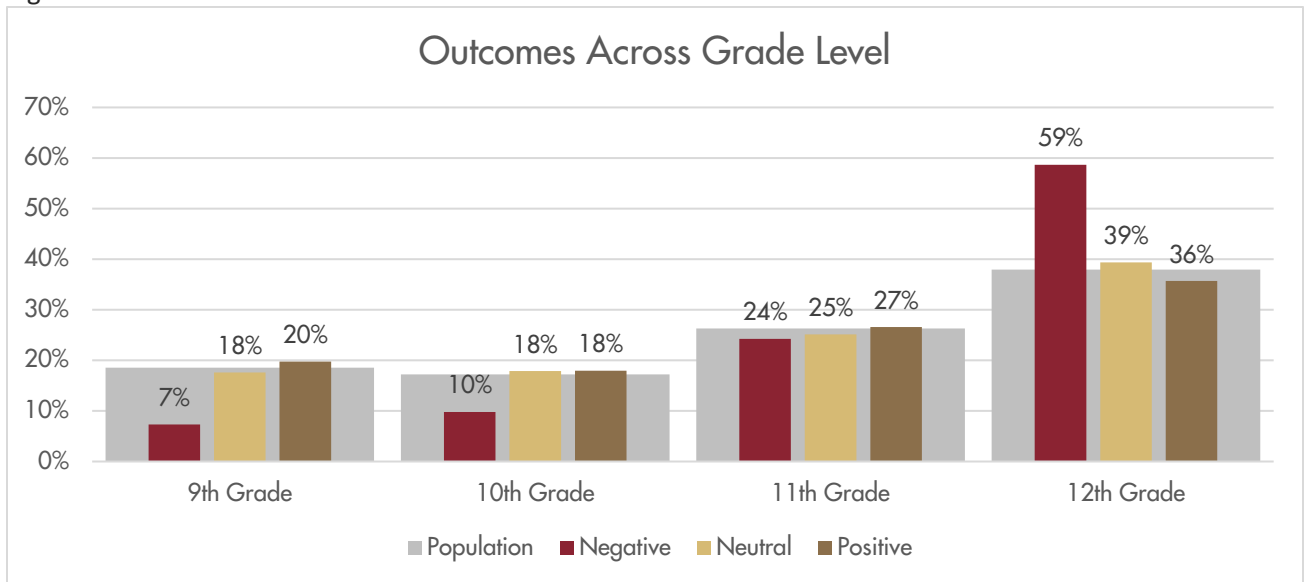


Figure 37



Outcomes by Student Characteristics

Outcomes across gender were not significant. African American students had a higher rate of positive outcomes, while Hispanic and Caucasian students had higher rates of both neutral and negative outcomes. Title I, ESL/ELL (approaching significance; chi-square 4.916, p=.086), and highly mobile students were overrepresented in both negative and neutral outcomes.



Figure 38

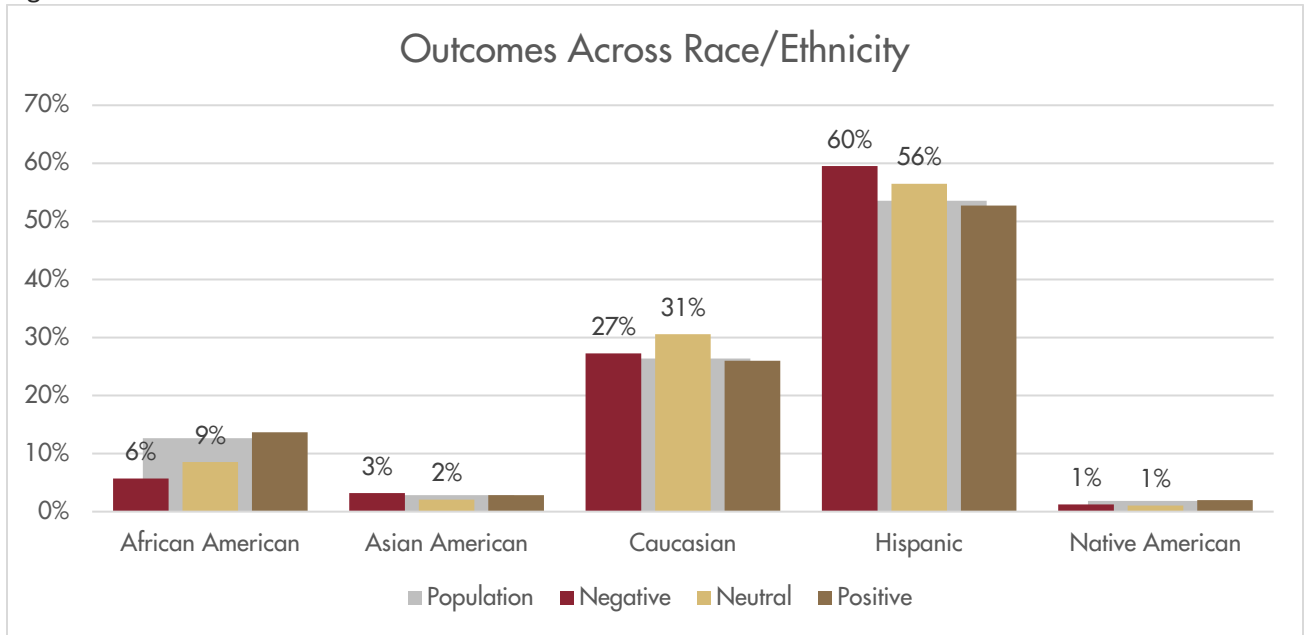
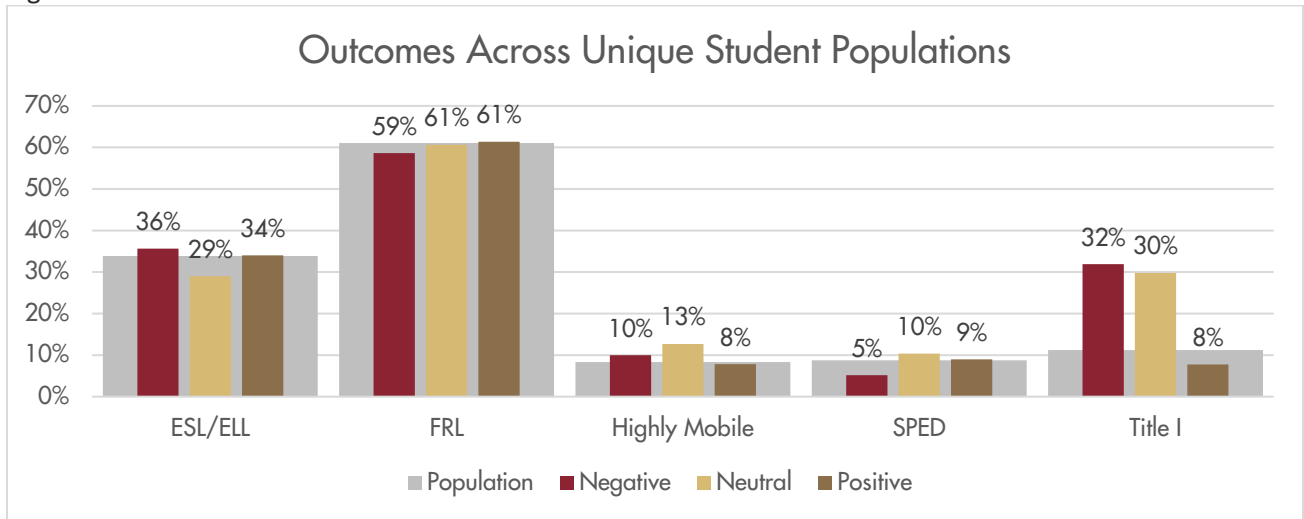


Figure 39

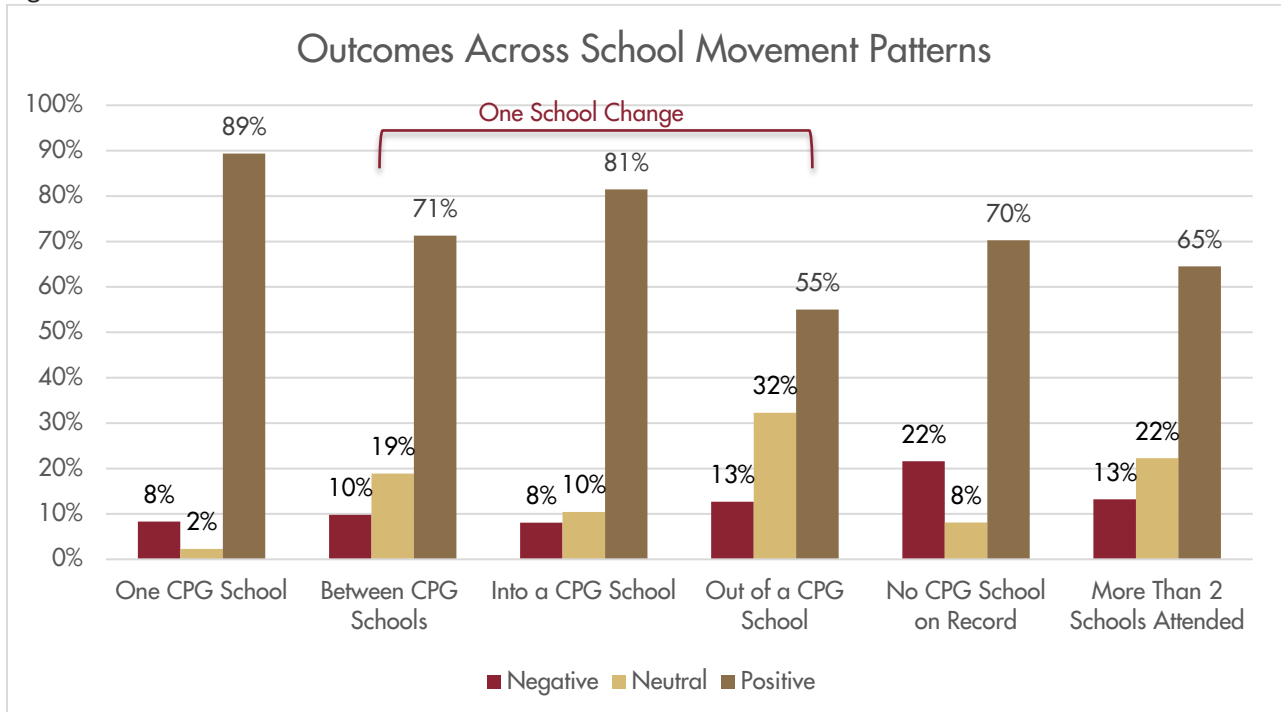


Comparison of Outcomes to School Mobility

Students who were able to remain in any CGP school had the highest percentage of positive outcomes. Students who transferred out of a CGP to a non-CGP school had the highest number of neutral outcomes. Students who remained in the same school had the highest rate of positive outcomes, while the rate of neutral and negative outcomes increased with transferring schools.

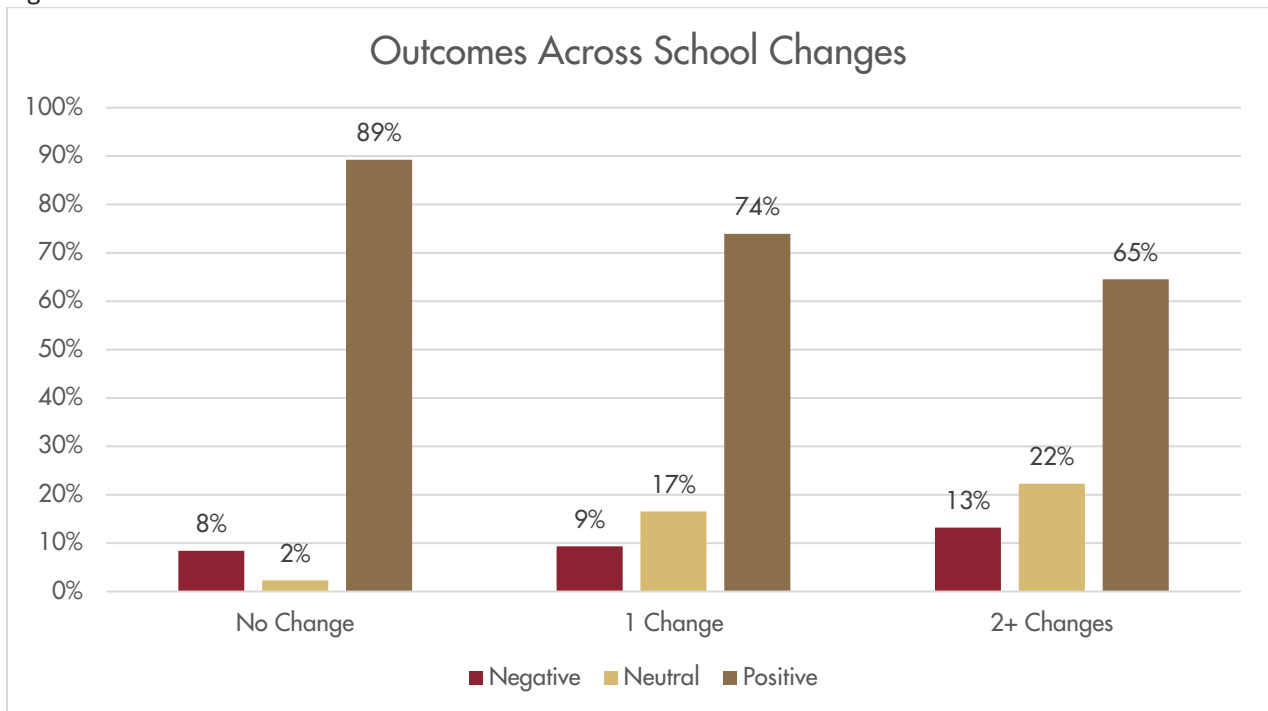


Figure 40



Notes. Statistical comparisons were not made among these categories.

Figure 41



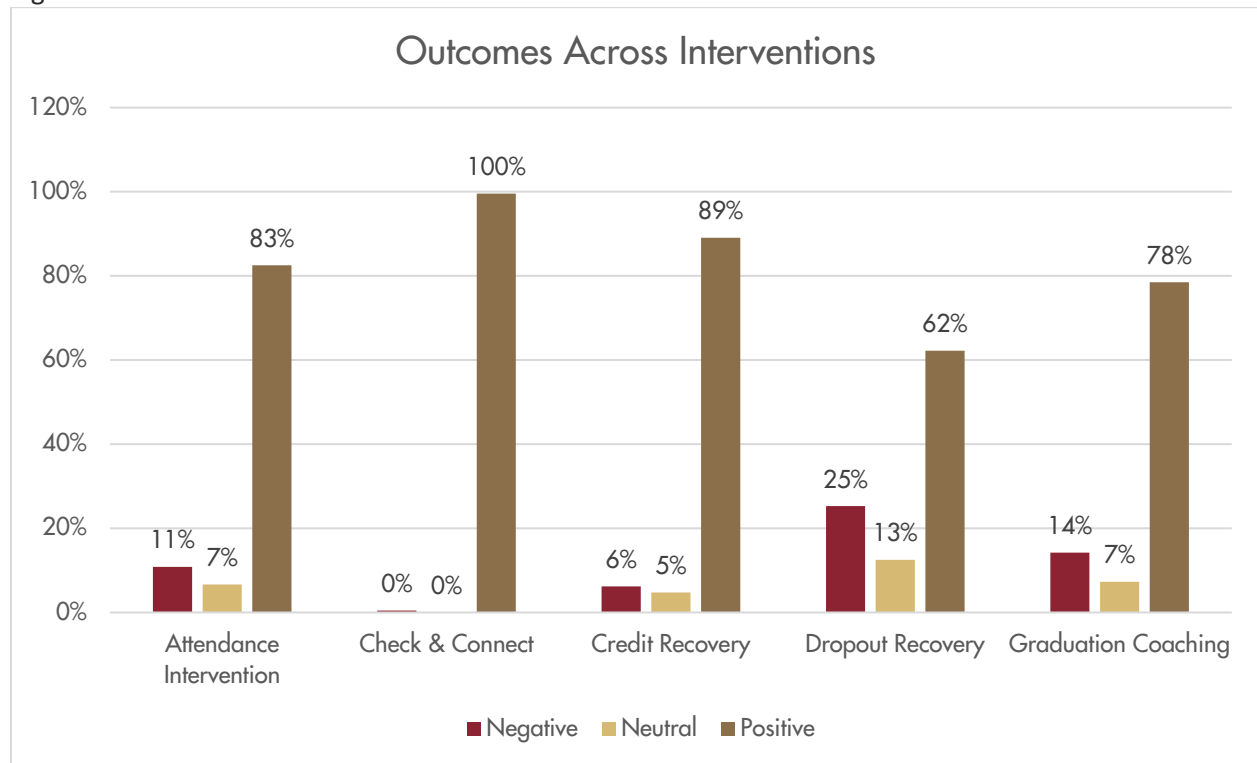


Outcomes and Services Received

Applying descriptive findings to programmatic decisions must be done with extreme caution. These analyses do not take into account the unique circumstances of the students receiving those services. Higher rates of positive outcomes are not necessarily a function of intervention effectiveness.

Students who received Check & Connect had the highest number of positive outcomes (227 of 228 – 100% due to rounding in Figure 42). Credit recovery and attendance interventions had the highest percentage of positive outcomes across a large number of students served. Students receiving dropout services or graduation coaching had the highest rate of negative outcomes.

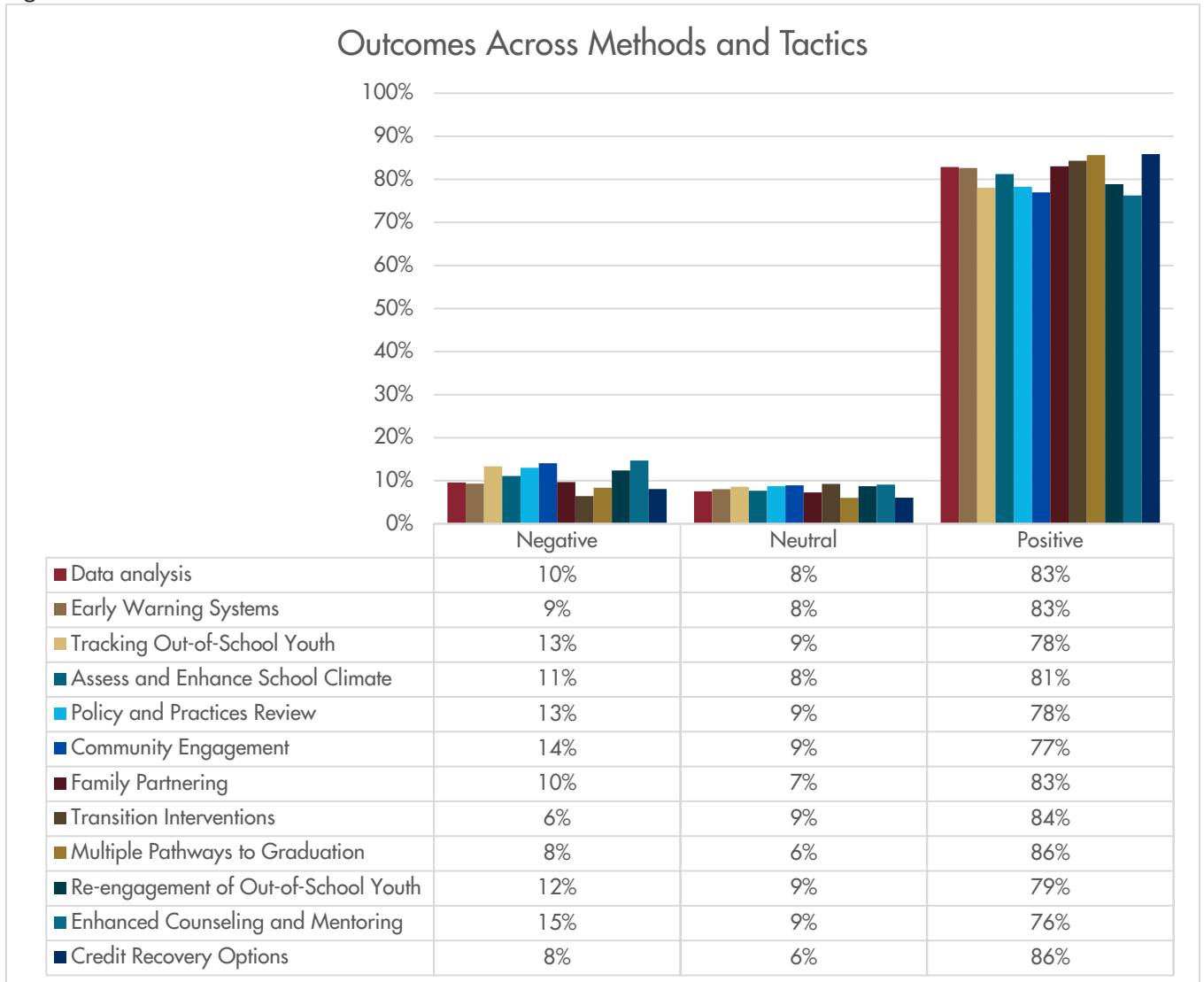
Figure 42



Students who attended schools with community involvement, transitions, and credit recovery had the highest rates of positive outcomes. Additionally, the lowest rates for negative outcomes were at schools providing transition and credit recovery services. These methods and tactics findings should be used with caution because these were implemented at the school a given student attended, but it is unclear if that student was engaged in the methods or tactics.



Figure 43



Comparison of Types of Positive Outcomes

Positive outcomes were broken out into returned to school after an extended absence (at any point in the year), stayed in school, and graduation for 12th graders.

A total of 393 students returned after six weeks, with the majority being 12th graders. The most common positive outcome was remaining in school, with 4,027 students. Finally, 1,321 twelfth grade students who received services graduated in the 2014-15 school year for a 55% graduation rate. Of note, students who returned to school after an extended absence were also counted in final outcomes (e.g. a student can be counted in the returned

Positive outcomes, as defined by CDE, refer to at the end of the year:

- Remaining in school
- Obtaining a high school credential (e.g., GED)
- Graduating from high school

Or at any point during the year:

- Returning to school after a prolonged absence

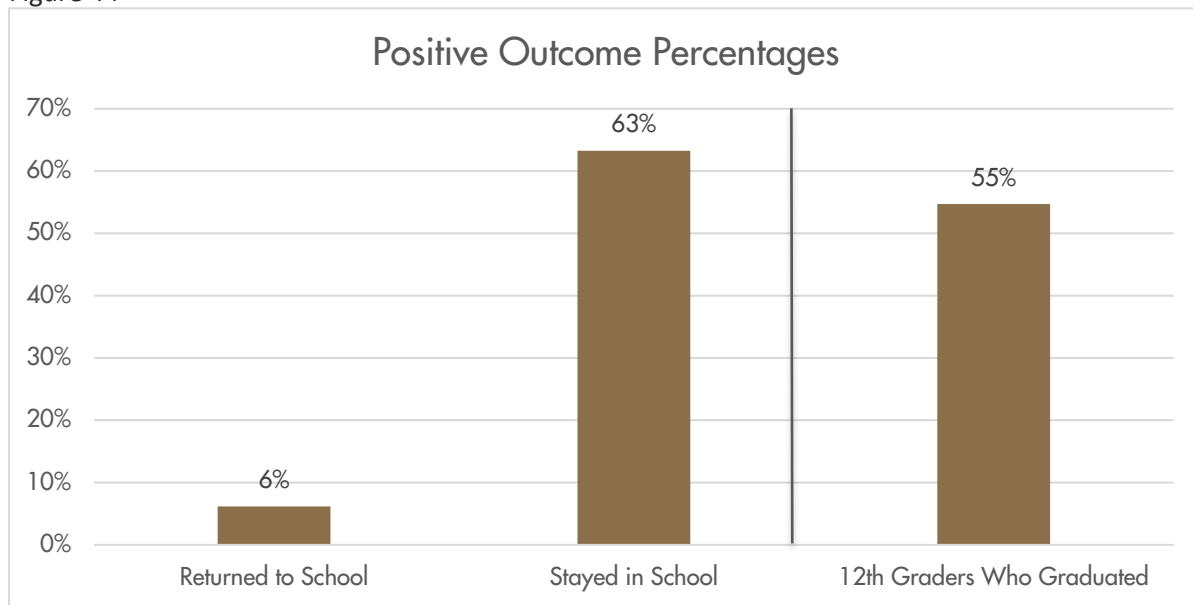


to school category and also graduate). End-of-year positive outcomes include graduation, obtaining a GED, or continuing with school.

Additionally, for this report, if at any time the student has returned from school after an extended absence, this is coded as a positive outcome. Neutral outcomes include transfers, illness/injury, or death. Negative outcomes include aging out of services, transferring to a detention facility, expulsion, extended absence, or dropping out.

THE SPECIFIC POSITIVE OUTCOMES ARE ONLY REPORTED WHEN THERE WAS SUFFICIENT SAMPLE SIZE TO DO SO. FOR EXAMPLE, THERE WERE NOT ENOUGH STUDENTS WHO EARNED A GED TO REPORT INFORMATION ON THAT OUTCOME.

Figure 44

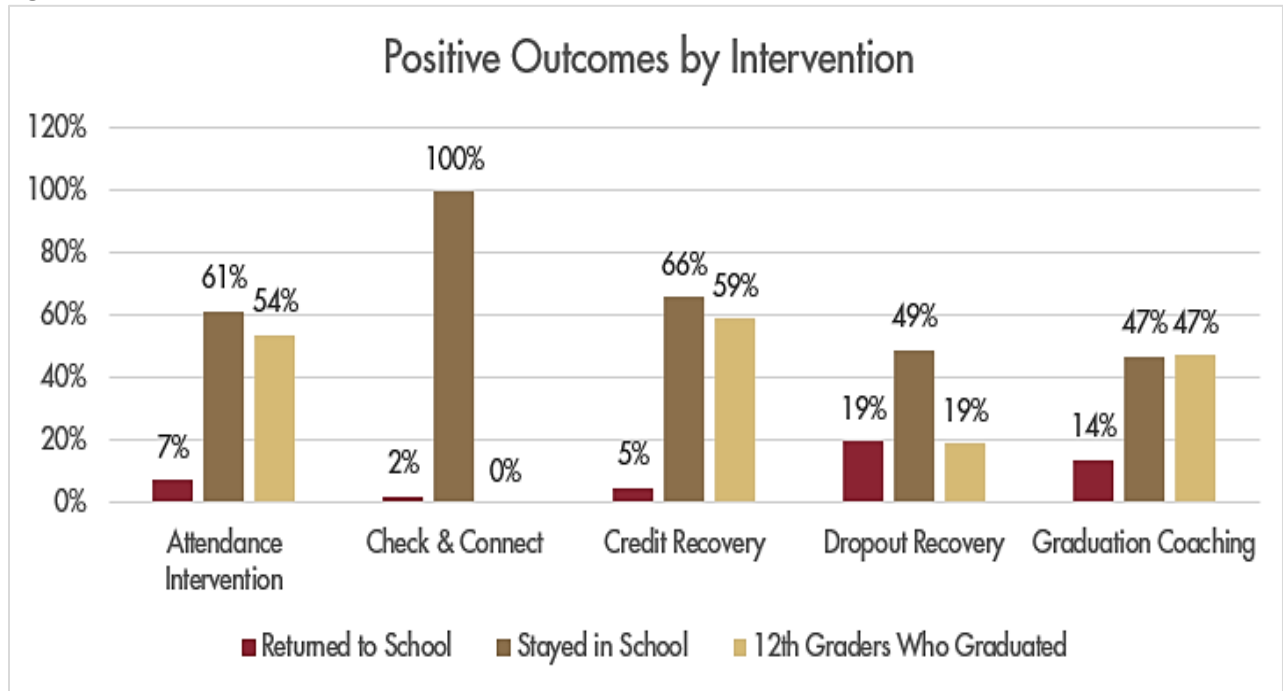


Note. Students could have a positive outcome of returned to school and stayed in school OR graduated. The denominator for returned to school and stayed in school is the full students served 2014-15 annual sample, whereas the denominator for 12th graders who graduated is students who were enrolled in 12th grade during the 2014-15 school year.

Examining the positive outcomes by intervention received, 227 of 228 students who received the Check & Connect intervention remained in school at the end of the school year. The attendance and credit recovery interventions had high rates of students remaining in school for a larger population, both with over 2,000 students remaining in school who received that service. Those two interventions had the highest rates of 12th grade students who graduated, though the attendance intervention was not statistically significant.



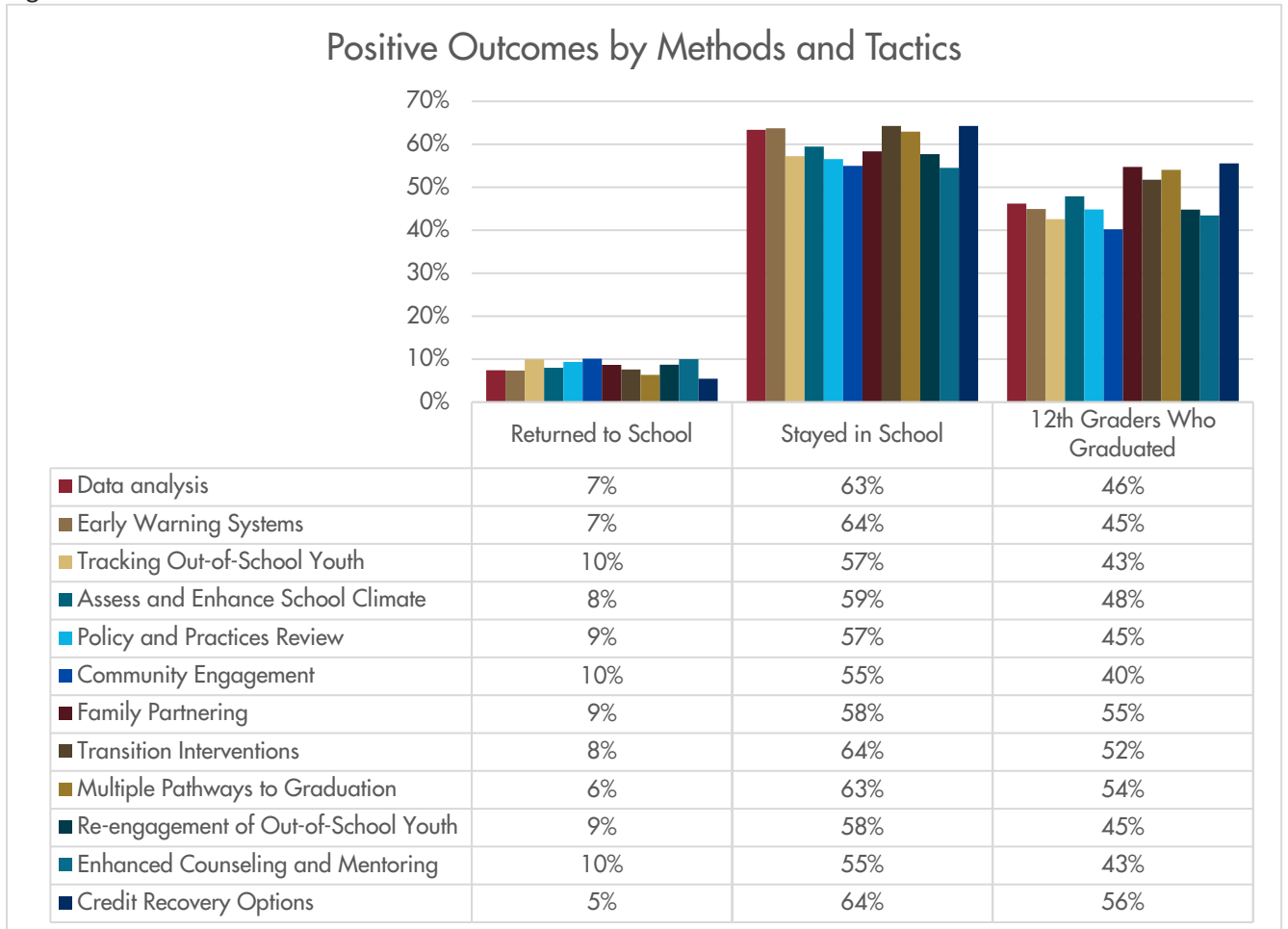
Figure 45



Students who attended schools that provided tracking, family partnering, and enhanced counseling had the highest rates of returning to school. Students who attended schools that indicated they used the following methods and tactics had the highest rates of staying in school; data analysis, early warning, transitions, pathways, and credit recovery services. Twelfth grade graduation rates were highest for students who attended schools providing community engagement, transitions, pathways, and credit recovery.



Figure 46



Comparison of Different Positive Outcomes by Student Characteristics

There were no noticeable differences in the various positive outcomes by gender. Native American students had the highest rate of remaining in school (84%), followed by African American students at 71%. African American students had a higher graduation rate than their peers (71%).



Figure 47

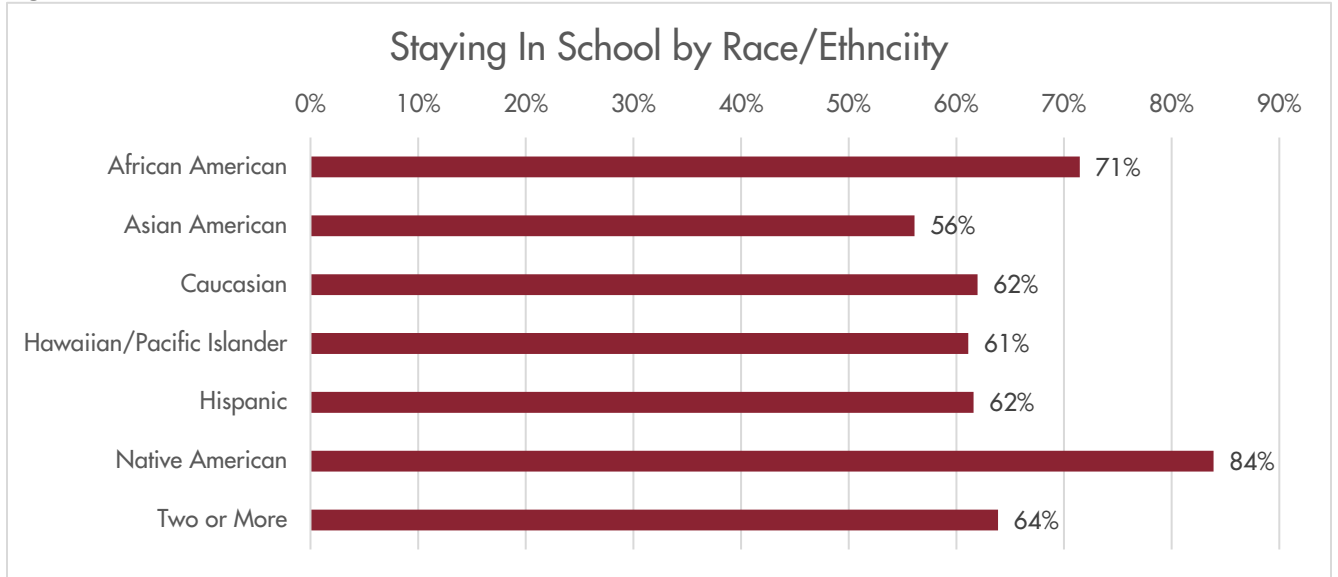
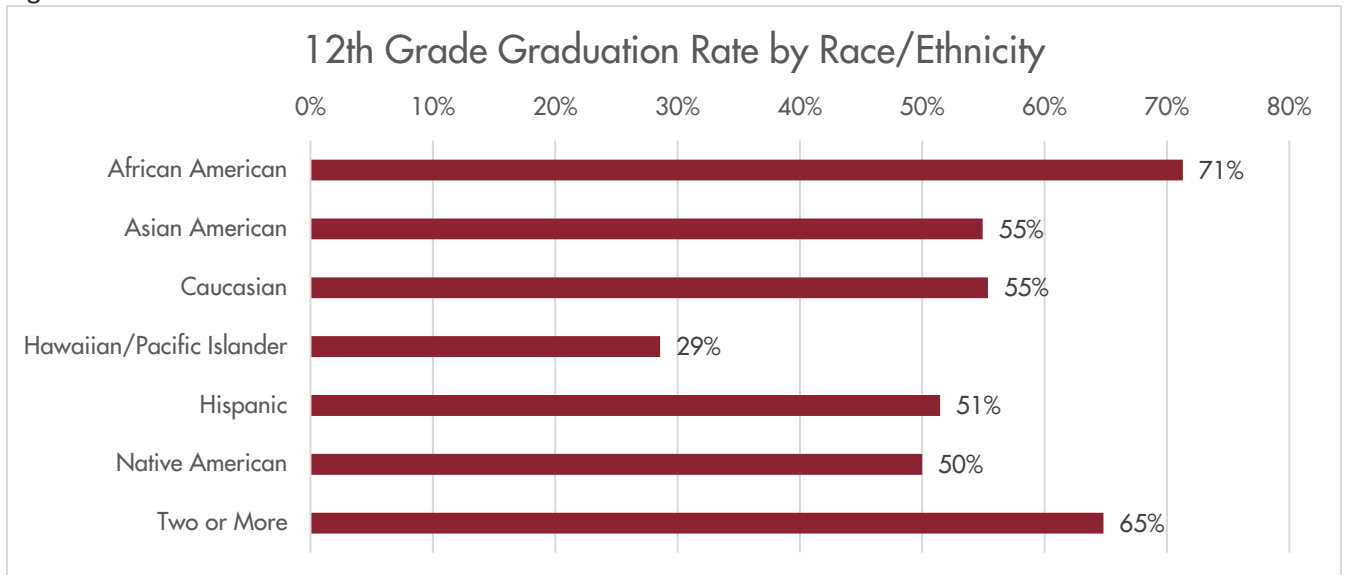


Figure 48



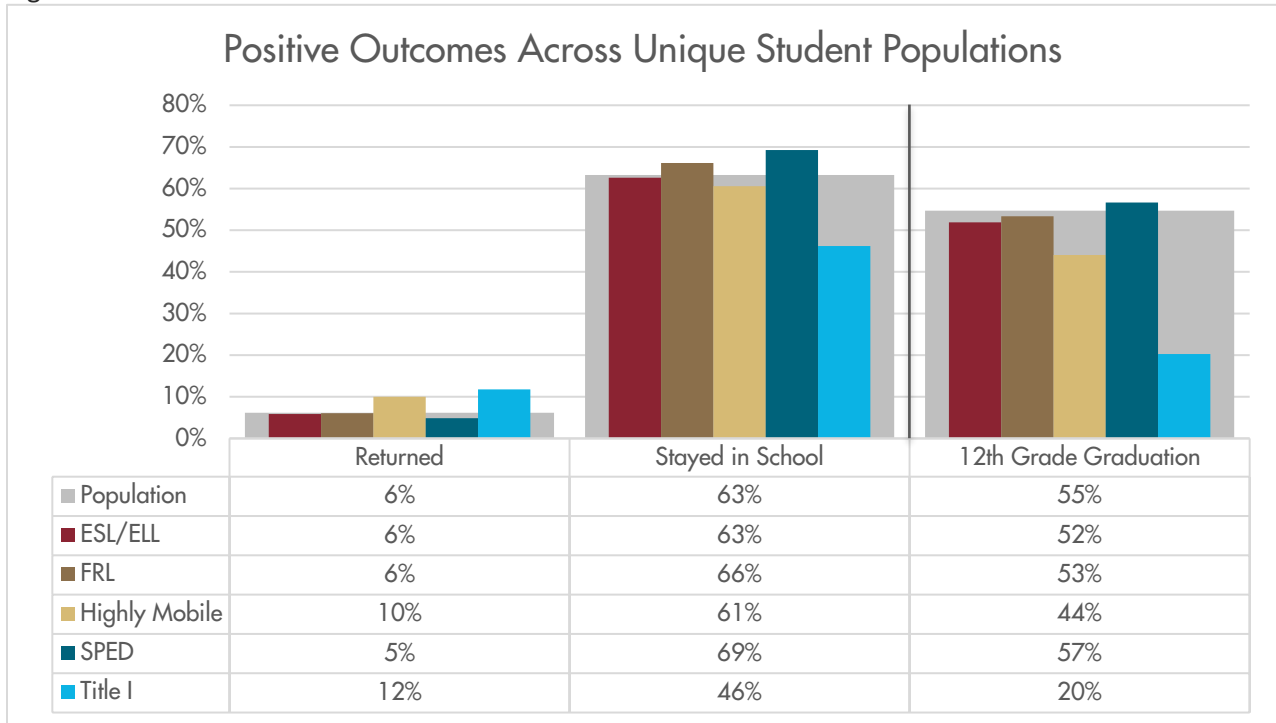
Highly mobile and Title I students had higher rates of returning to school. FRL and special education students had the highest rates of staying in school. Title I students had the lowest rates of staying in school and the lowest graduation rate for 12th graders.

Throughout the report, a large gray bar is used as an anchor for chart comparisons.

This bar represents the overall group population, which gives context for various breakout comparisons.



Figure 49



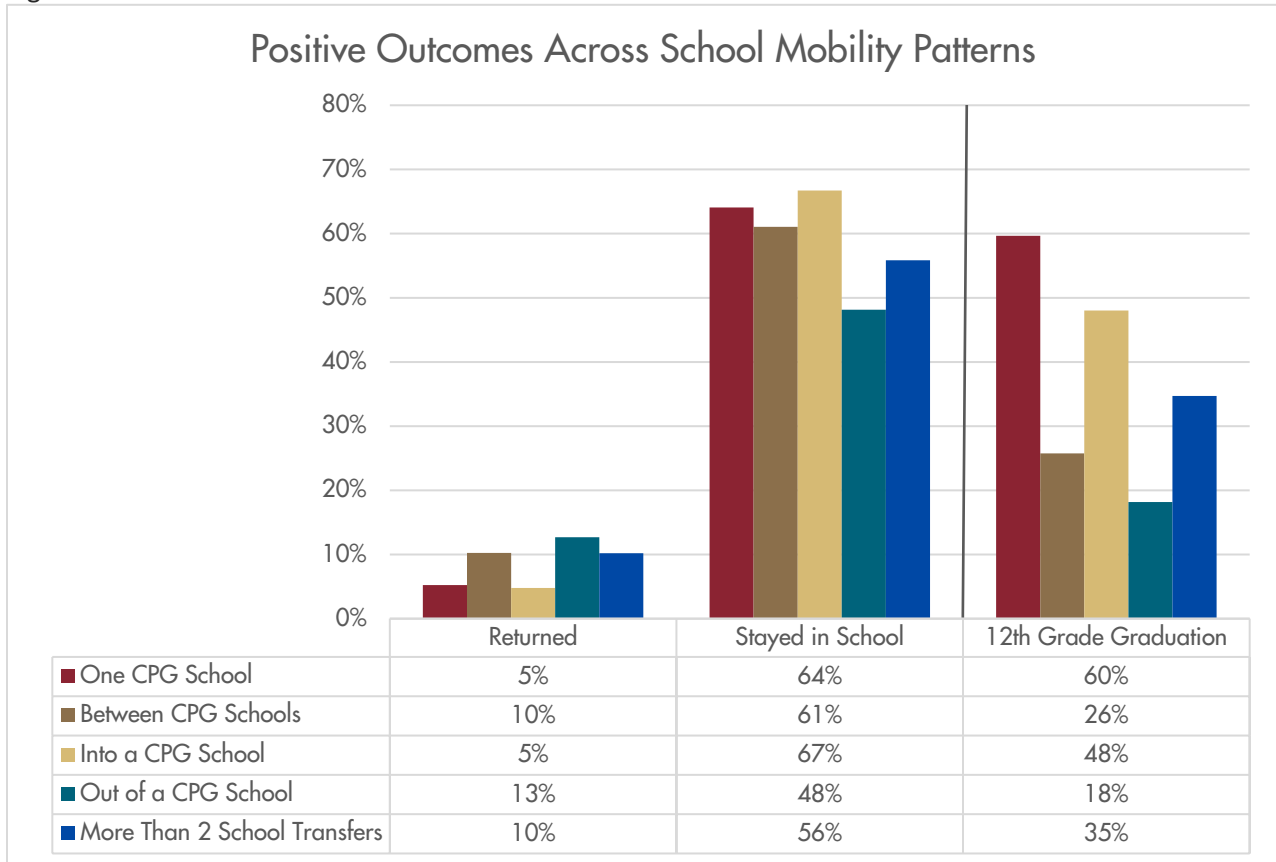
Note. Students could have a positive outcome of returned to school and stayed in school OR graduated. The denominator for returned to school and stayed in school is the full students served 2014-15 annual sample, whereas the denominator for 12th graders who graduated is students who were enrolled in 12th grade during the 2014-15 school year.

Comparison of Different Positive Outcomes by School Mobility Patterns

The data on 12th grade graduation rates by school mobility patterns aligns with prior research that staying in the same school is associated for students graduating. Students who entered a CGP school during 12th grade from a non-CGP school graduated at a higher rate than those who transferred between CGP schools or out of a CGP school.



Figure 50



Note. Students could have a positive outcome of returned to school and stayed in school OR graduated. The denominator for returned to school and stayed in school is the full students served 2014-15 annual sample. Whereas the denominator for 12th graders who graduated is students who were enrolled in 12th grade during the 2014-15 school year.



PART THREE: COHORT OUTCOMES

Research Question 6: What are the patterns among targeted interventions delivered in ninth grade, school mobility throughout high school, and student outcomes four years after initially entering ninth grade?

This section of the report expands on section two by describing outcomes for students within four-years of ninth grade. The outcomes are connected to the targeted interventions that the students received while in their first ninth grade year and attending a CGP school.

Students may have been exposed to or served behind the scenes by a variety of methods and tactics and perhaps offered targeted interventions in subsequent school years through CGP programs. Information on exposure or dosage are not available beyond the students initial ninth grade school year.

Outcomes by Student Characteristics

The outcomes for the Class of 2017-18 cohort were overwhelmingly positive with 72% of students having a final record with a positive outcome (Figure 51). Gender differences were not statistically significant (Figure 52). African American and Caucasian students had higher rates of neutral outcomes compared to the general CGP served student population, whereas Hispanic students had the highest rates of negative outcomes (Figure 53). Highly mobile students and Title I students had higher rates of neutral and negative outcomes than the CGP student population as a whole (Figure 52).

Throughout this report, differences stated in the narrative (e.g., “higher rate”; “overrepresented”) were statistically significant at <.05 level. Whereas language implying rank order (e.g., “highest percentage”) is descriptive and does not apply a statistically significant difference.

The specific test-statistics for each comparison are available upon request.

Figure 51

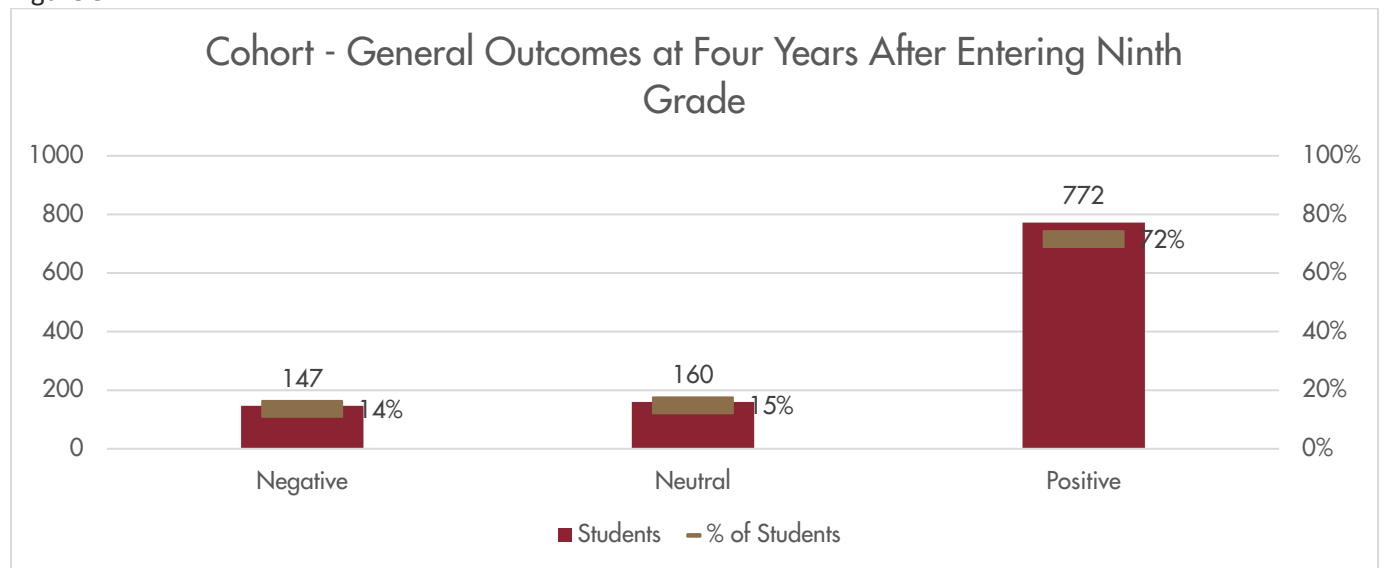




Figure 52

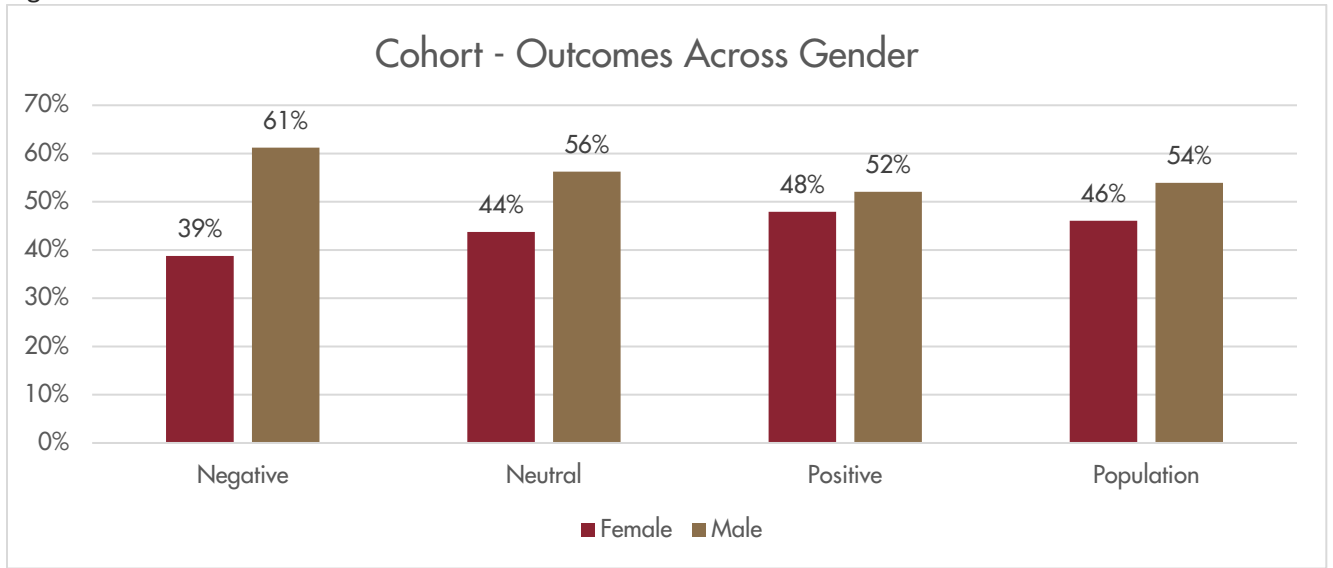


Figure 53

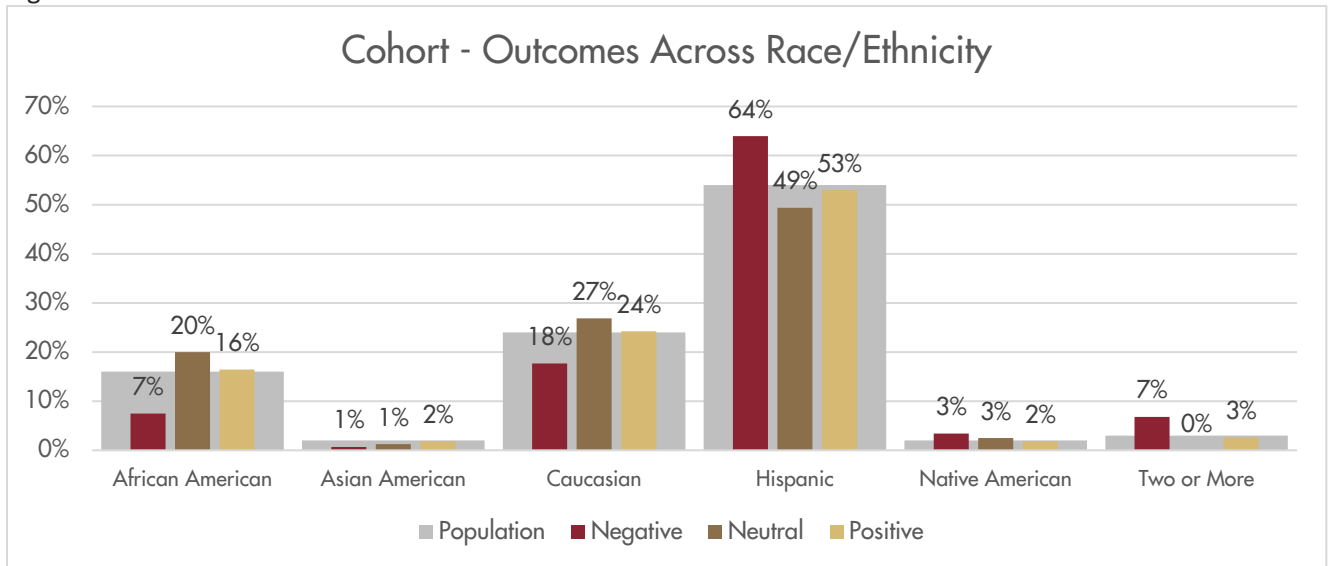
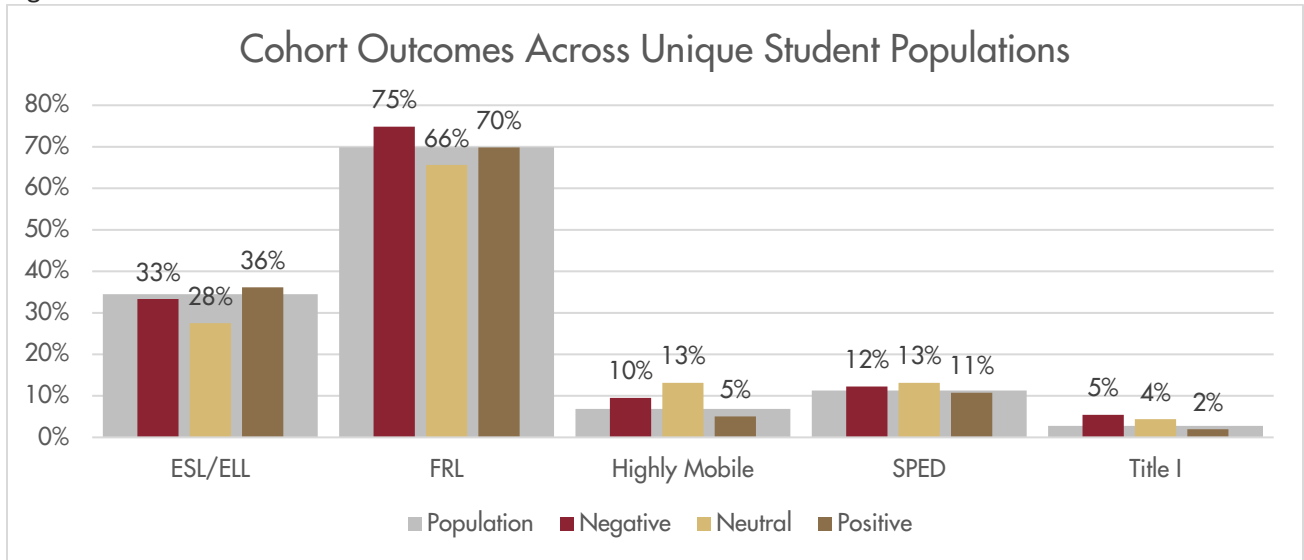




Figure 54



Outcomes and School Mobility

Remaining in the same CGP school had the highest rate of positive outcomes, while moving multiple times had the lowest. The first two school changes were associated with an eight percentage point drop in four-year graduation rates (Figure 56).

Figure 55

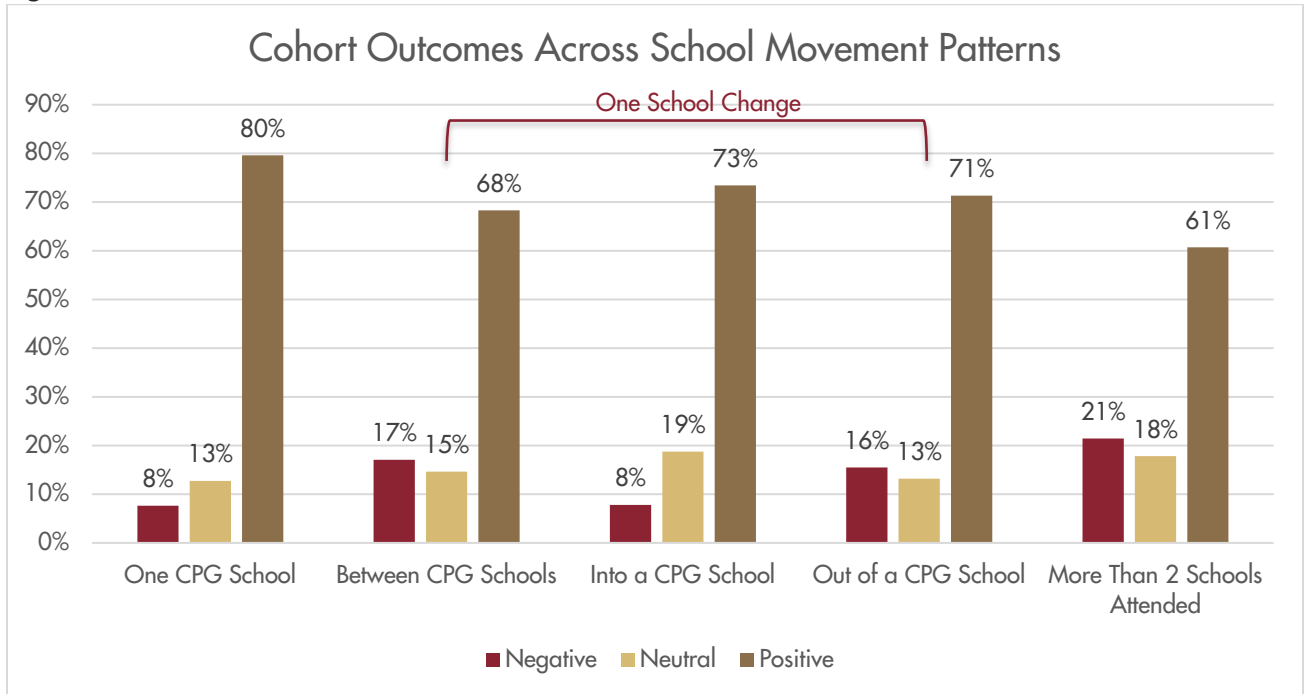
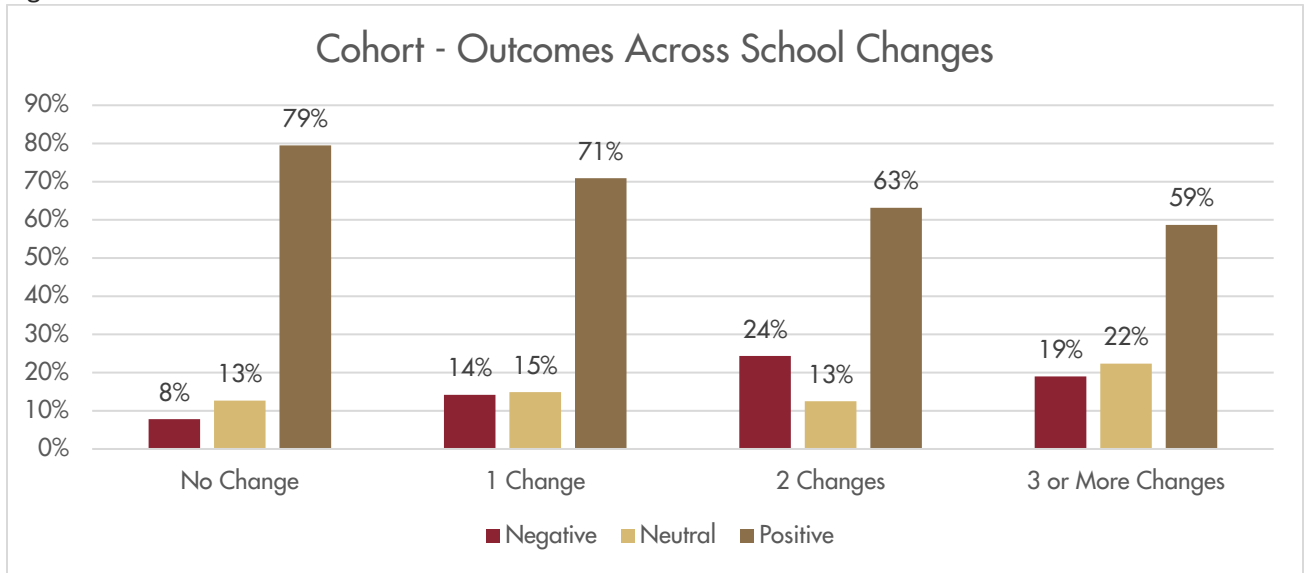




Figure 56



Outcomes and Services Received

As noted in the previous section, applying descriptive findings to programmatic decisions must be done with extreme caution. These analyses do not take into account the unique circumstances of the students receiving those services. Higher rates of positive outcomes are not necessarily a function of intervention effectiveness.

All targeted interventions, except dropout recovery, were associated with more than 70% of the students served having a positive outcome four years after initially entering ninth grade (Figure 57). Students who received dropout recovery interventions had the highest rate of negative final outcomes, which may be related to student selection (e.g. students who had dropped out).

The outcomes associated with most methods and tactics ranged from 67% to 72% positive outcomes. Family Partnering and Enhanced Counseling and Mentoring; however, were associated with significantly lower rates of positive outcomes (50% and 58%, respectively; Figure 58).



Figure 57

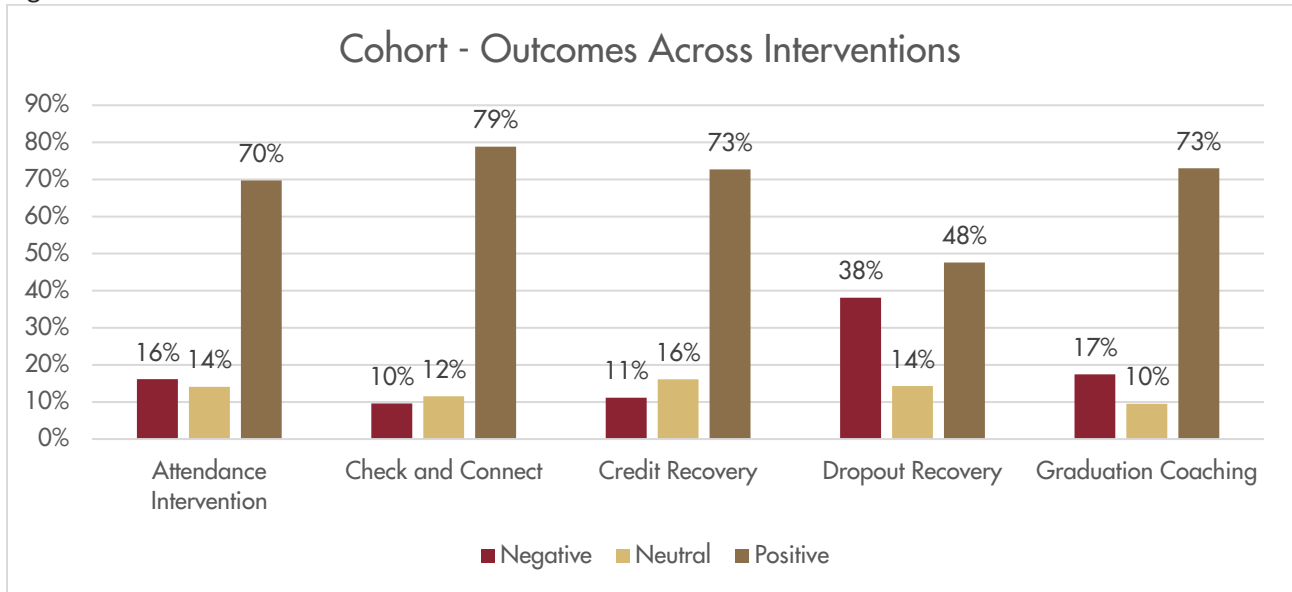
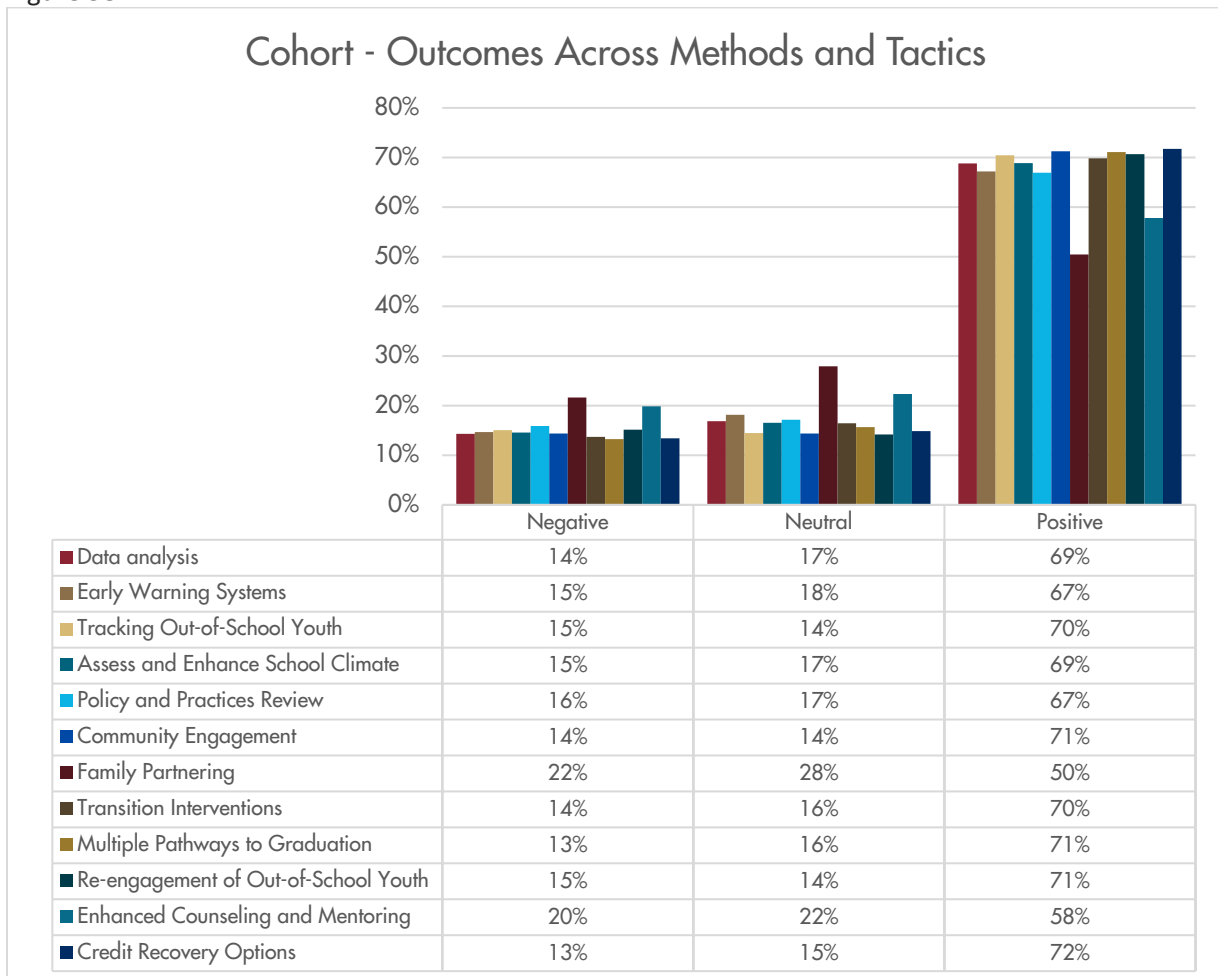


Figure 58





Comparison of Types of Positive Outcomes

Positive outcomes for the cohort analyses were assessed four years after students initially entered ninth grade in two ways:

- How students exited the Colorado public school system four years after initially entering ninth grade
- How many students returned to school after a prolonged absence during the four years after initially entering ninth grade

The most common positive outcome four years after initially entering ninth grade was graduation (56% of students). Another 168 (16%) students were still enrolled in school but had not yet earned a high school credential. There were not enough students who earned a high school credential, such as a GED, to report that information in this report.

Of note, students who returned to school after an extended absence were also counted in final outcomes (e.g. a student can be counted in the returned to school category and also graduation). A total of 86 students returned after an extended absence between the 2014-15 and the 2017-18 school years.

Gender differences were not statistically significant for any of the specific positive outcomes, meaning that males and females had similar rates of graduating, remaining in school, and returning to school.

There were however, notable differences in four-year graduation rates among race and ethnicity groups. Among those students who were served by CGP and had any type of positive outcome, African American and Asian American students had the highest graduation rates, while Hispanic, Native American, and two or more race/ethnicities had the lowest rates graduation rates. Race and ethnicity differences were not statistically significant for staying in school or returning to school.

Unique student groups describe their experiences and their eligibility for services. Some students may be part of multiple unique student groups. Among unique populations of CGP served students, highly mobile, special education, and Title I students had the lowest graduation rates, but had higher rates of staying in school. Title I students also returned to school at higher rates than other unique student groups.

Mobility is associated with the type of positive outcome that students experience. Students who remained in the same CGP school had a 72% graduation rate, while students who changed schools had a steadily declining graduation rate. Students who moved 3 or moves times had a 28% graduation rate. Students who had 3 or more moves had the highest rates of returning to school and remaining in school.

In this section, the denominator is students who were served by CGP and had a positive outcome.

Positive outcomes, as defined by CDE, refer to four years after initially entering ninth grade:

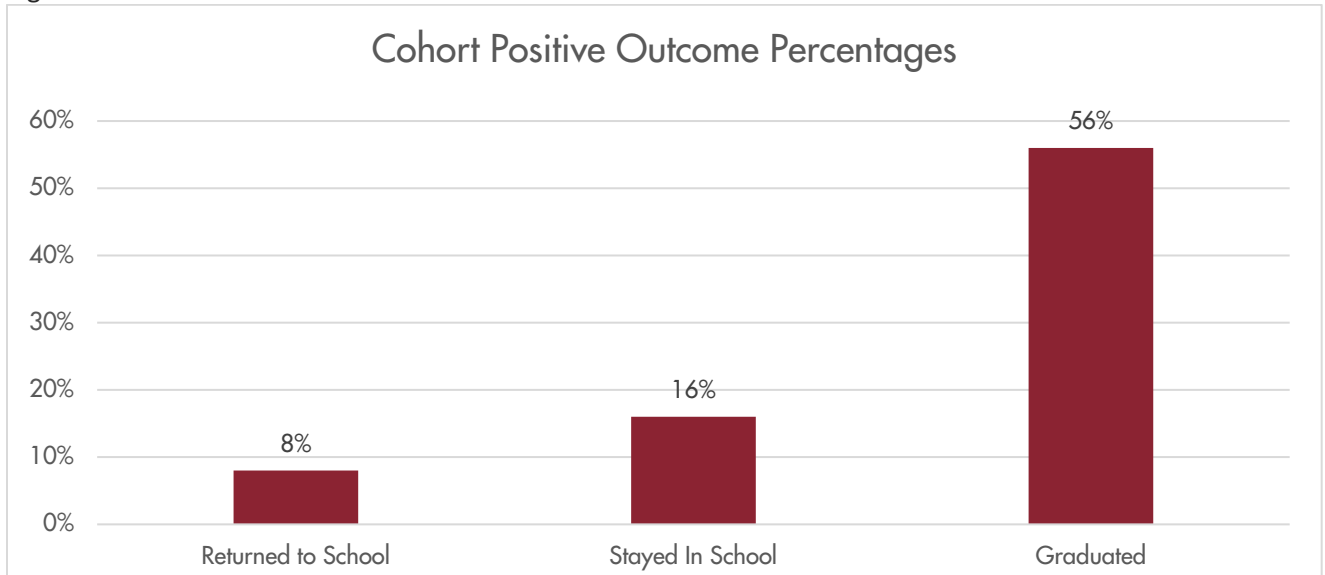
- Remaining in School (Still Enrolled)
- Obtaining a high school credential (e.g., GED)
- Graduating from high school

Or at any point between the 2014-15 and the 2017-18 school years:

- Returning to school after a prolonged absence



Figure 59



Note. 72% of students had a positive outcome. The percentages reported here sum to greater than 72% because students who returned to school typically also have the positive outcome of “still enrolled” or “graduated” four years initially entering ninth grade.

Figure 60

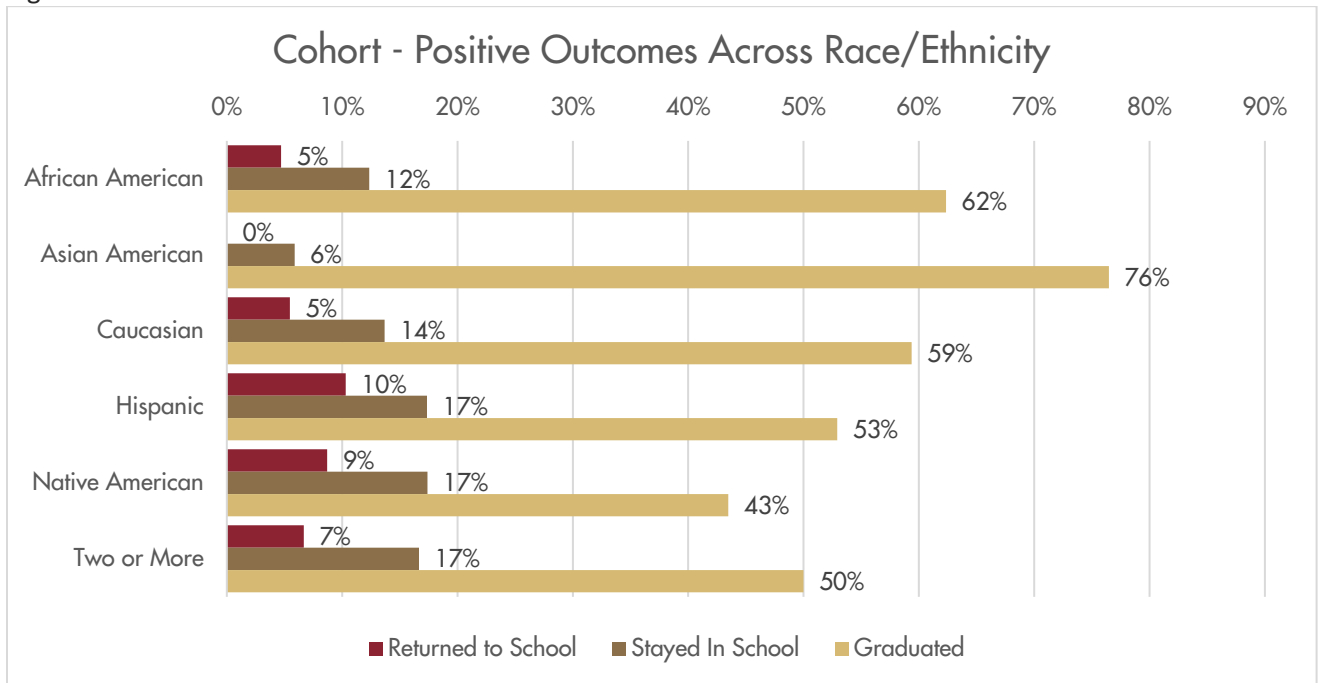
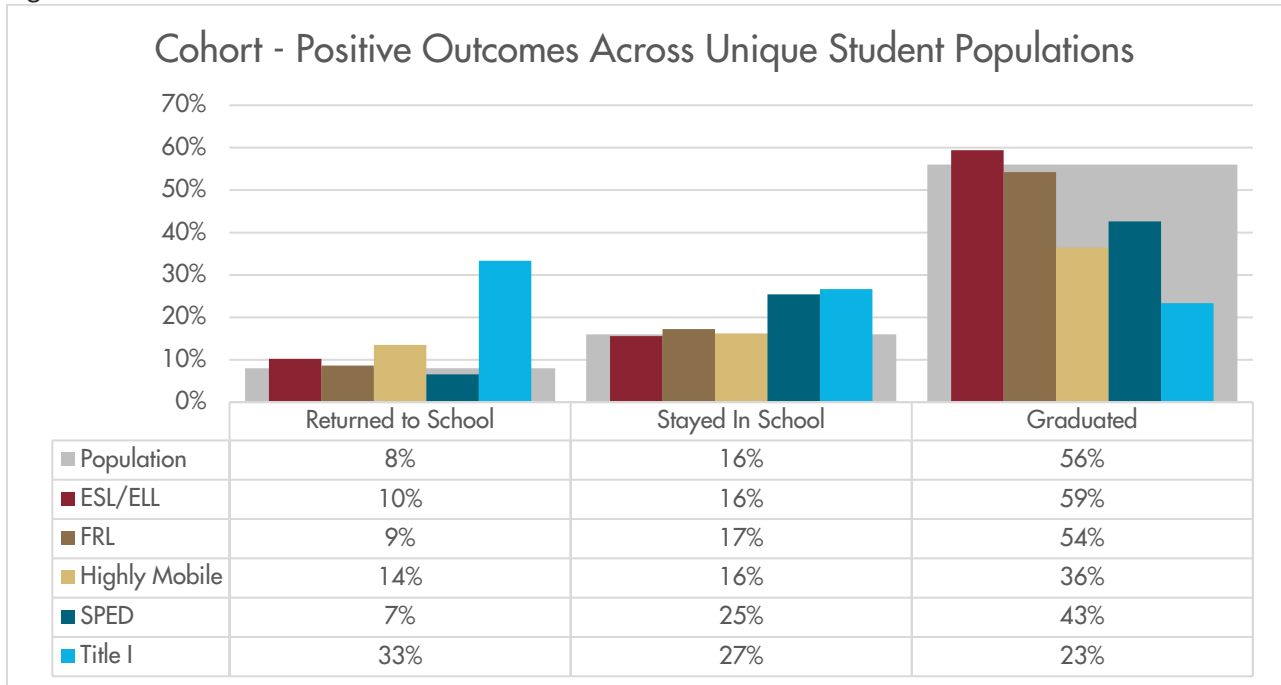




Figure 61



Note. Students can be members of multiple unique populations and the number of students in each group varies substantially. Thus, the most practical interpretations of this information can be made by comparing unique populations to the grey bar which indicates the population of all CGP students served.

Figure 62

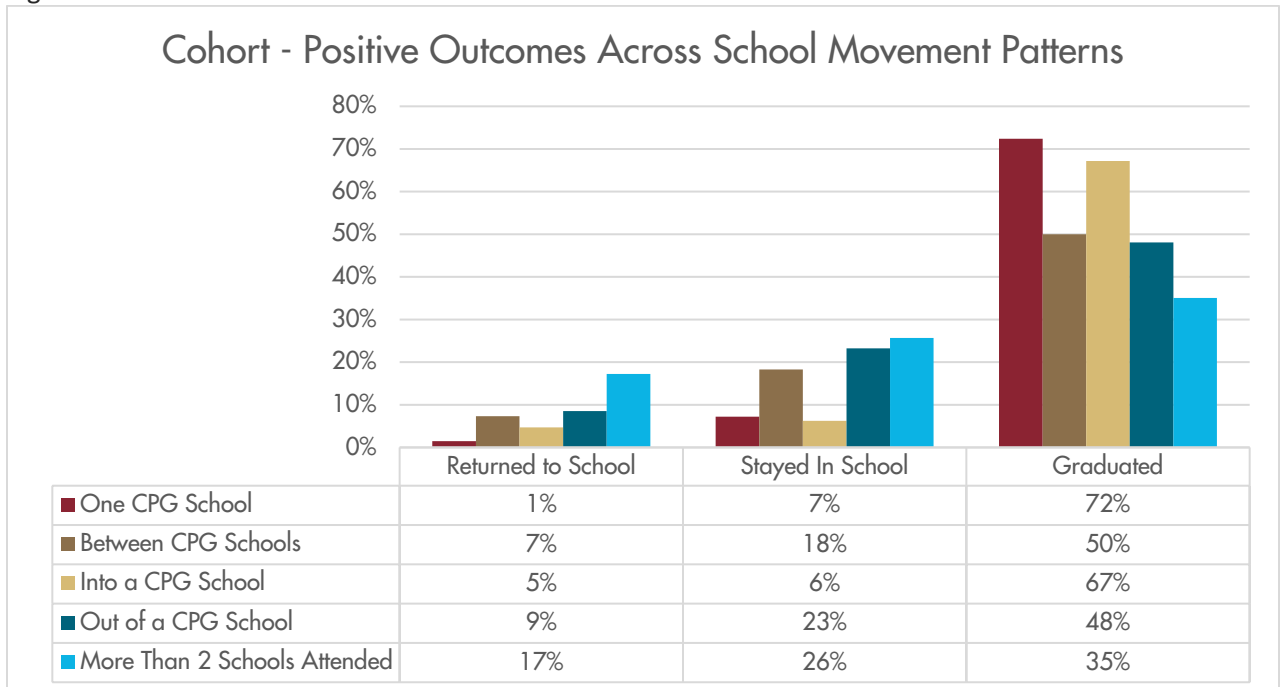
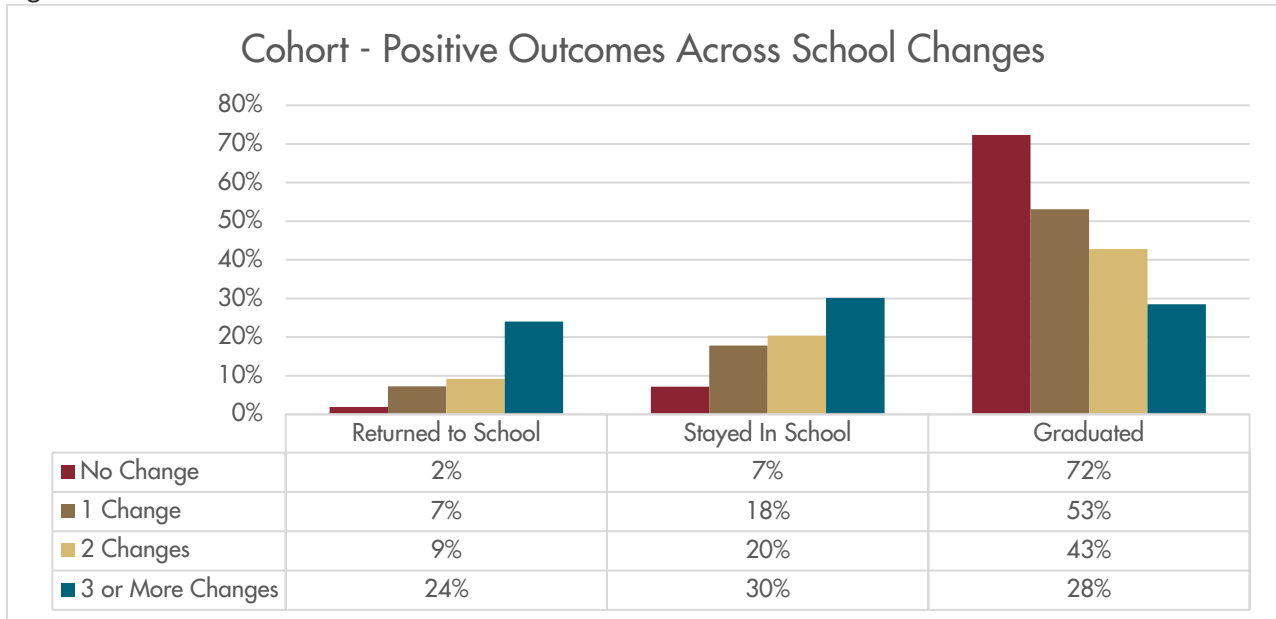




Figure 63



Figures 64 and 65 depict the type of positive outcome that students experienced four years after receiving a specific intervention or their school implemented a given method or tactic. These analyses are not causal, and information should be applied to action with caution. The students who received the interventions were likely not similar.

The most appropriate use of these descriptive analyses is considering the rates of graduation, remaining in school, or re-engaging school with what practitioners would expect this approach to yield for the students whom the intervention is intended to serve. For example, the finding that dropout recovery is associated with the highest rate of returning to school makes sense as that intervention is designed to re-engage students who have discontinued their education. The graduation coaching data suggests that less than half of the students who were identified in ninth grade as needing graduation coaching, did not earn a high school diploma within four years and a quarter of those students at a minimum needed more time to reach that educational milestone. This raises the question of “is graduation coaching enough for students who are flagged as needing additional support in ninth grade?” (Figure 64).

The crosswalk between methods and tactics implemented at a school CGP students attended in ninth grade and those students’ outcomes for years later should be used in a similar vein as the intervention data (Figure 65). For example, ninth grade students who attended high schools that emphasized family partnering or school climate had higher rates of returning to school after a prolonged absence and remaining in school after their anticipated graduation rate. This may suggest that family partnering strategies’ attention to school climate may help keep students enrolled in school.



Figure 64

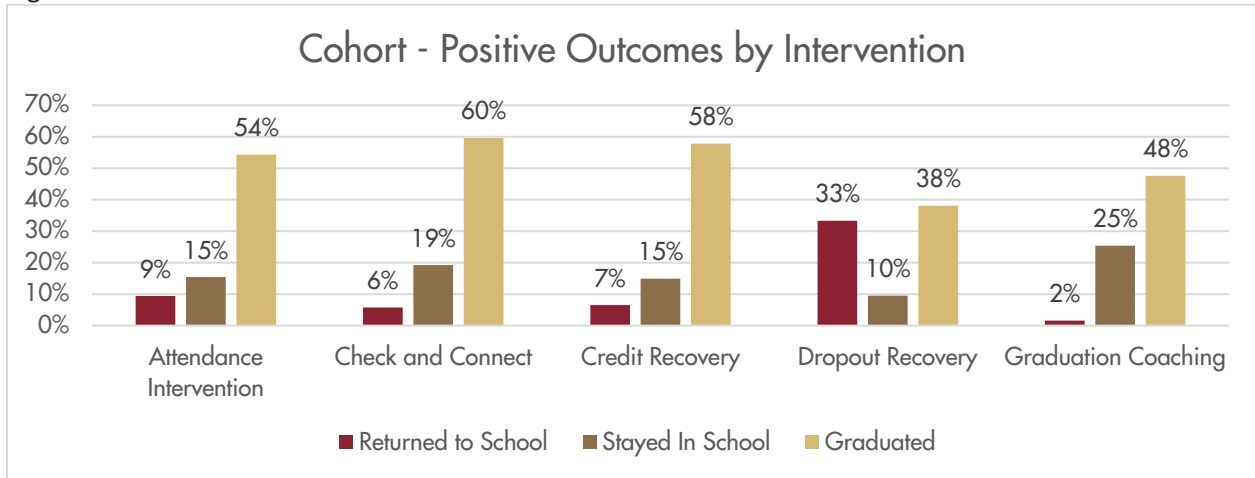
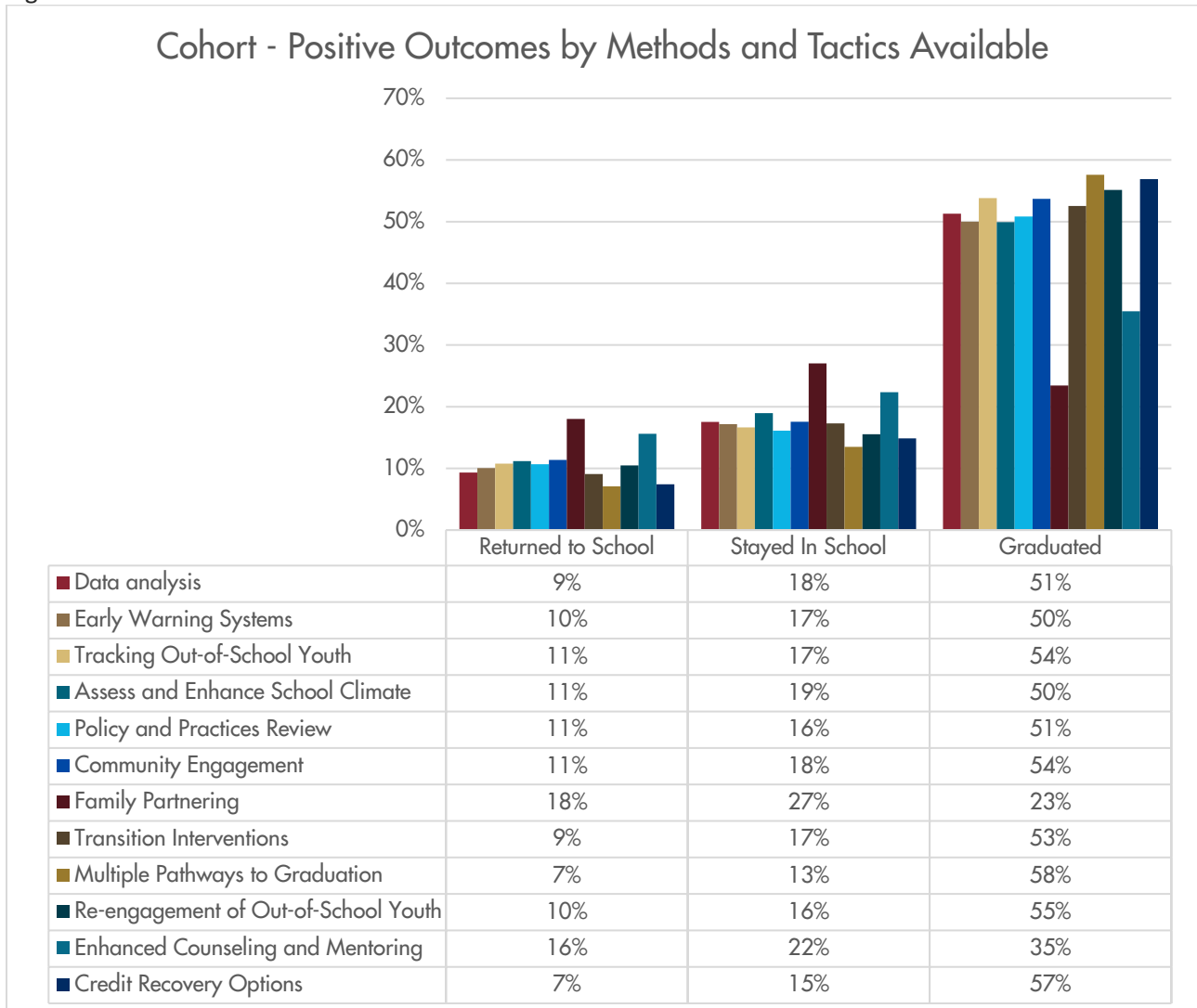


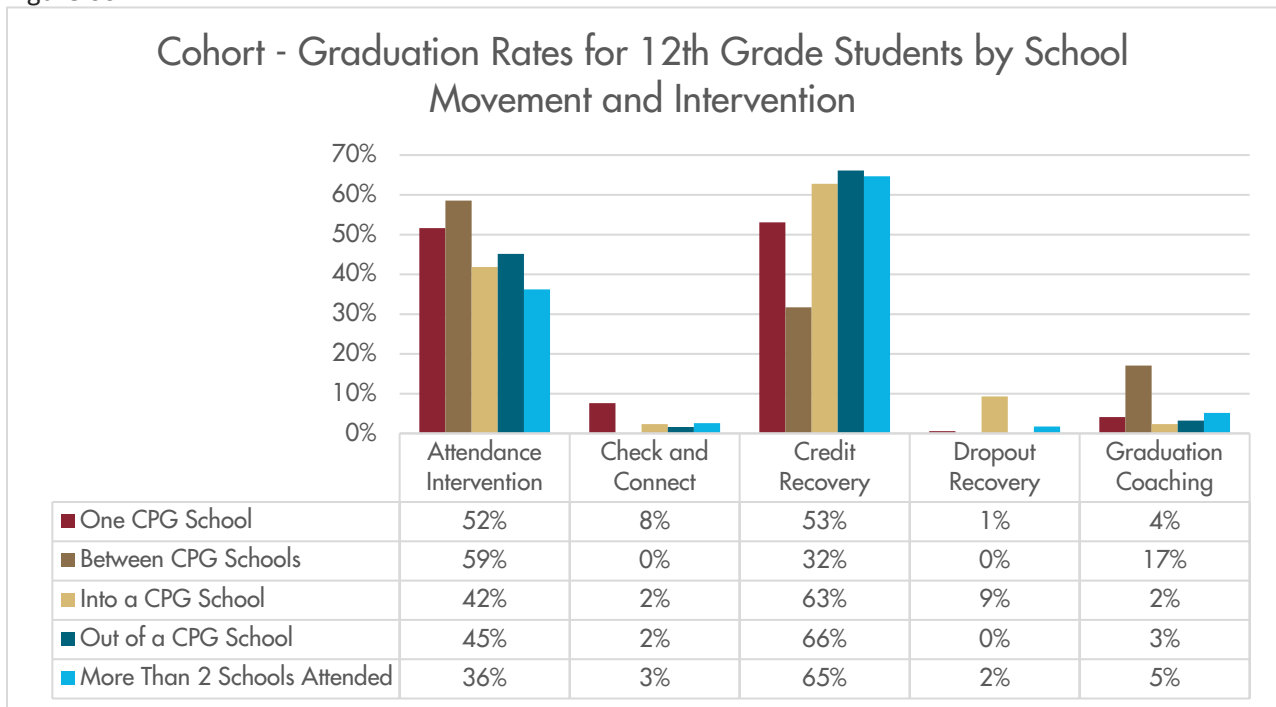
Figure 65





The attendance interventions had the highest graduation rates for students who remained in the same CGP school or who transferred between CGP schools. Check & Connect had the highest graduation rates for students who remained in the same CGP school while credit recovery interventions had the highest graduation rates for students who moved the most, including into or out of a CGP school. Dropout recovery had the highest graduation rates for students moving into a CGP school. Graduation coaching was not statistically significant when compared to school movement types.

Figure 66



Conclusion

Reflecting on patterns in dosage, disproportionality of service delivery, and student outcomes from prior grant funded programs can inform future investments. The goal of this study was to explore – using the available student level data – patterns in the CGP program data to make recommendations aimed at strengthening the SRGP. Limitations in the available data and the descriptive design mean that results cannot be said to be caused by the services. Instead these findings are best used to generate ideas and guide conversations about how to move forward with grant-making. There is a clear need in Colorado to accelerate progress for Title I and highly mobile students. A next step might be to rigorously test if specific grant-making strategies or targeted interventions do in fact produce better outcomes for Colorado students.