FIRST LOOK

Foster Youth Education Outcomes in Four California Counties

NOVEMBER 2011

STUART FOUNDATION

INVESTING IN CHILDREN & YOUTH TO CREATE LIFELONG IMPACT

The Center for Social Services Research (CSSR), established in 1994, conducts research, policy analysis, program planning, and evaluation directed toward improving the public social services. Housed in the School of Social Welfare at the University of California at Berkeley (UCB), the Center responds to the concerns of the community. Collaborating with public social service officials, elected policy-makers, community professionals, and consumers of service, it engages in research activities that are directly practice and policy relevant.

The California Partnership for Achieving Student Success (Cal-PASS) is the only system that collects data about student success and transition from every segment of education, K-16, in California. Informed by data, powered by inspiration and developed through collaboration—Cal-PASS users identify problems, develop local solutions, and bring them to scale across regions and throughout California to achieve student success.

The Ready to Succeed Initiative is a Stuart Foundation effort to improve educational outcomes for children and youth in the foster care system by helping public education and child welfare systems work together more closely and effectively at the local and state levels.

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Project Team:
UCB: Kristine Frerer

Cal-PASS: Lauren Davis Sosenko, Nathan Pellegrin, Alex Zakharenkov, Jordan Horowitz, and Mary Kay Patton

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The project team also would like to give a special thank you to the school districts and postsecondary institutions that elected to participate in the pilot study.

For their feedback and support, the project team thanks the *Ready to Succeed Leadership Team* and Stuart Foundation staff. Their enthusiasm for this work and thoughtful guidance kept the project moving forward.

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INTRODUCTION FROM THE STUART FOUNDATION

These highlights are based on a pilot research project funded by the Stuart Foundation and conducted by the Center for Social Services Research (CSSR) at the University of California, Berkeley and the California Partnership for Achieving Student Success (Cal-PASS). The research set out to answer the following three research questions in four California counties:

1. What are the high school and college education outcomes for students in foster care in California?
2. How do foster students' education outcomes compare to those of closely matched students?
3. What factors facilitate or impede successful completion of high school and college education for students in foster care?

A larger, statewide research project will deepen our understanding of many of the preliminary findings based on this pilot project. Those results will be available in summer 2012.

Education is the key to success for all children. For students in foster care, education is the door out of instability into a more promising life. What we learn from improving education outcomes of students in foster care will help close the achievement gap for all at-risk youth.

Students in foster care have the ability and strong desire to succeed in school, but the instability they face in their family lives takes a toll on their school performance. Of a sample of students in foster care who had aged-out of the system, 75 percent had goals of graduating college, but only 30 percent had completed high school (Reilly, 2003). The good news is, with the right support and intervention programs, students can and do succeed.

However, there has been limited investigation to show exactly which supports and intervention programs in California are most effective. Now, that is changing.

This first-of-its-kind pilot project gets us closer to knowing how students with a history of foster care placement are faring in California's education system in comparison to closely matched at-risk student populations and the general student population. **Accessible, linked child welfare and education data is the most critical component needed to fill the information void.**

This research compared students in foster care with closely matched at-risk students. At-risk characteristics include ethnicity, English Language Learner status, participation in the free lunch program, primary disability, school rank (a measure of school quality) and foster care status.

By understanding where students in foster care are succeeding and encountering stumbling blocks, we can create more effective supports and intervention programs—and target those services where they are needed most to improve education outcomes for all students.

HIGHLIGHT FINDINGS

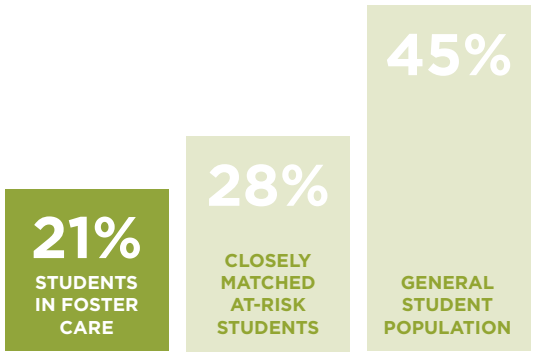
Students in Foster Care Fall Behind Other At-Risk Student Populations

Students in foster care not only fall behind the general California student population; they fall behind other at-risk student populations. Students in foster care have high aspirations, but face many barriers due to the instability in their lives.

This research compared students in foster care and closely matched at-risk students in grades 8-11. These highlights represent data from grade 11, unless otherwise noted, which is representative of the trends in other grades. Education outcomes measured include proficiency on the English and math California Standards Test (CST), a key benchmark for education success in the state.

English CST Proficiency

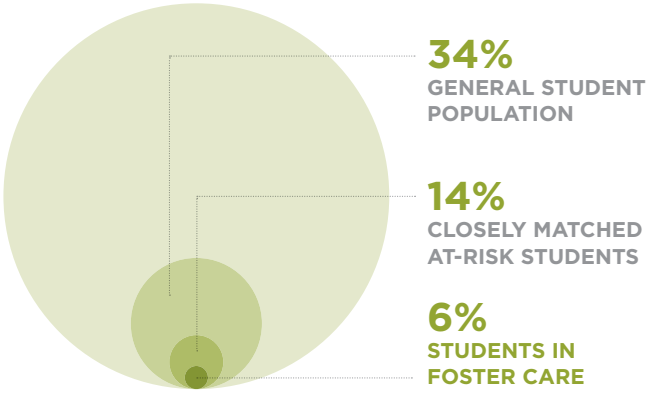
- Students in foster care are half as likely to achieve proficiency on the English CST as the general student population.
- Students in foster care are 25% less likely to achieve proficiency on the English CST than other closely matched at-risk students.



11TH GRADE ENGLISH CST PROFICIENCY

Math CST Proficiency

- Students in foster care are five times less likely to achieve proficiency on the math CST as the general student population.
- Students in foster care are half as likely to achieve proficiency on the math CST as other closely matched at-risk students.



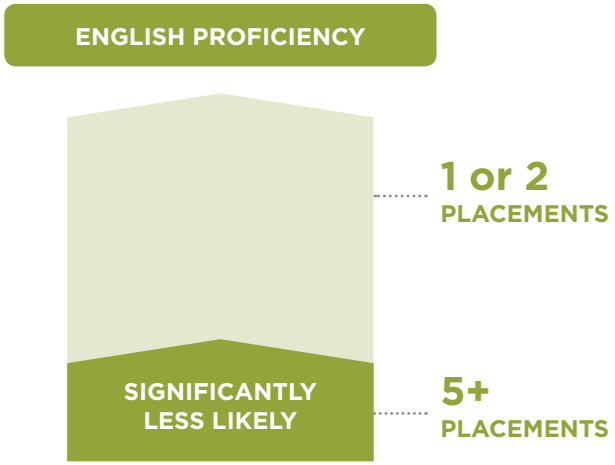
11TH GRADE MATH CST PROFICIENCY

FACTORS THAT WIDEN THE ACHIEVEMENT GAP FOR STUDENTS IN FOSTER CARE

This research has helped identify factors that facilitate or impede successful completion of high school and college education for students in foster care. It looked at child welfare variables that impact academic achievement, such as a stable home environment. This research also showed that students of color in foster care have poorer education outcomes. Assessing needs, aligning supports and coordinating efforts will ensure students get the support they need in order to close the achievement gap.

Multiple Home Placements Affect Proficiency

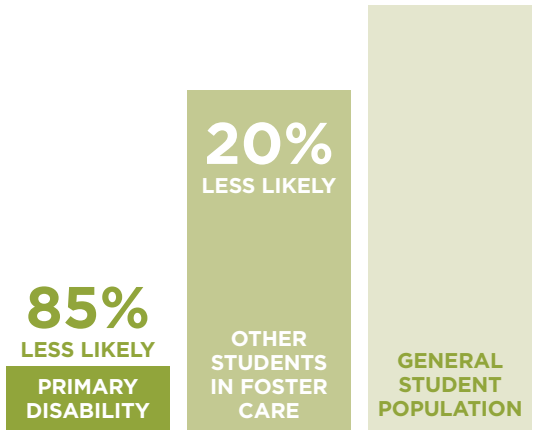
Students in foster care with five or more home placements are significantly less likely to achieve proficiency on the English CST than students with one or two placements.



11TH GRADE ENGLISH CST PROFICIENCY

Students in Foster Care with Disabilities Are Another Vulnerable Group

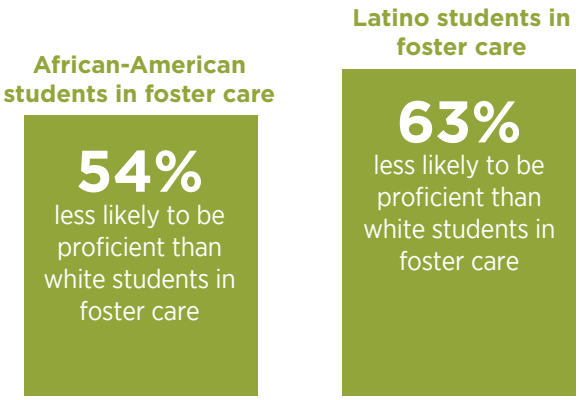
Students in foster care with a primary disability are 85 percent less likely to achieve English CST proficiency than other students in foster care, who are already about 20 percent less likely than the general student population to achieve that proficiency.



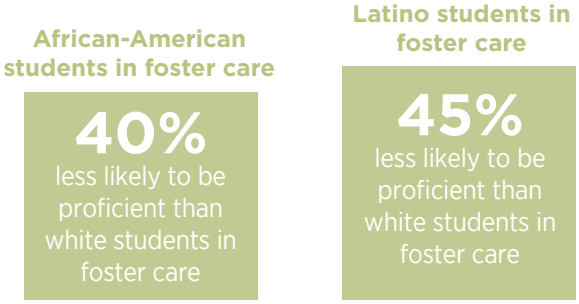
11TH GRADE ENGLISH CST PROFICIENCY

African-American and Latino Students in Foster Care Are Especially Vulnerable

African-American and Latino students in foster care are roughly half as likely to achieve proficiency on the math and English CST as white students in foster care.



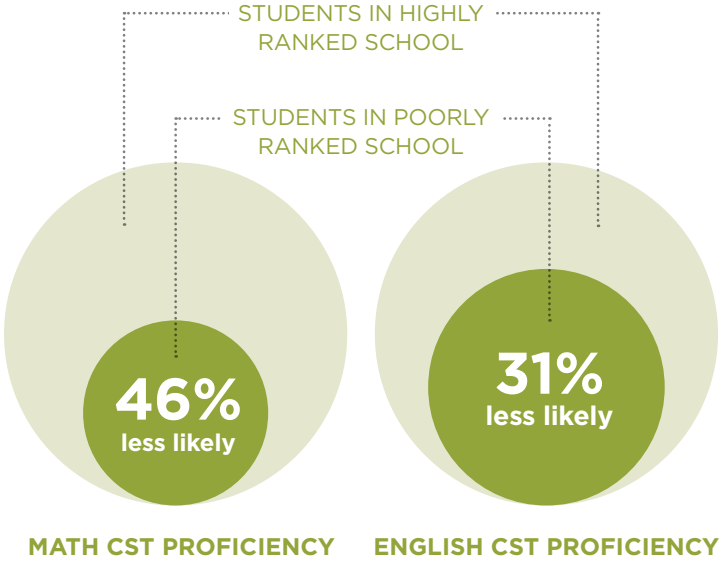
11TH GRADE MATH CST PROFICIENCY



11TH GRADE ENGLISH CST PROFICIENCY

Students in Foster Care in High-Ranked Schools Are More Likely to Succeed

Students in foster care at poorly ranked schools are half as likely to achieve math CST proficiency and a third as likely to achieve English CST proficiency as students in foster care in highly ranked schools. Note that these school ranking highlights represent data from grade 10, which is representative of the trends in other grades.



10TH GRADE PROFICIENCY

The Right Support Can Boost College Success for Students Formerly in Foster Care

Students formerly in foster care who receive financial aid are five times more likely to attain a degree in community college than students formerly in foster care without aid.

NEXT STEP: A CLOSER LOOK

A wide-ranging research project is underway that reaches beyond the four pilot counties and performs a statewide data match. The dataset under review is much larger and comprehensive, covering both education and child welfare variables in a longitudinal analysis. This forthcoming research will be available in summer 2012 and allow us to identify which factors affect students in foster care most. It will help us identify where students in foster care are succeeding, as well as where they are stumbling.

With that information, we can expand the most effective supports and intervention programs and target those services to where they are needed most—particularly during the most vulnerable points along the education pipeline, like transitions from middle school to high school, or enrollment in higher education.

Students in foster care can and do succeed when they have the right support. The right kind of support for students includes looking across the education continuum—from cradle to college and career—and ensuring we are supporting students during the critical transitions between each phase in their education.

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EXECUTIVE SUMMARY

The child welfare population in California is the largest in the nation. Of the over 59,500 youth in care, 63% are school aged [12]. Every day in California, over 37,000 students begin and end their school day in foster care. For many of these youth, challenges in their family environment and foster care placement compromise their ability to learn.

Prior research indicates that foster students are more likely to have lower achievement test scores and perform below grade level in grades K-12 [13,14,15]. They also are twice as likely as non-foster youth to leave high school before completion [16,17,18]. Of the foster youth who attend college, approximately 1-9% of foster youth earn a post-secondary degree compared to 28% of the general population [19,20].

The majority of past investigations into the secondary and postsecondary education outcomes for foster youth focus on youth who age-out of the foster care system. As this group represents approximately 10% of all youth who exit, there is a considerable gap in knowledge about how most children served by child welfare agencies fare academically.

While prior studies often utilize comparison groups, few match foster youth to students in the general population by key education risk factors. The federal Elementary and Secondary Education Act (No Child Left Behind) outlines groups of students at-risk for poor academic performance. Characteristics of foster youth and at-risk groups often overlap. Both groups of students are, on average, poor,[21,22,23] nonwhite,[24] and have disabilities (i.e., special education status)[25]. Investigations which tease out how youth with a foster care history perform in comparison to students closely matched by these at-risk factors is missing from current literature.

This study begins to address these gaps in two primary ways. Foster youth are closely matched to students in the general population by education at-risk factors. In addition, education outcomes are explored for all youth who exit care, not just those who age-out of the foster care system. Though limited by a number of factors including the cross-sectional design, this report provides a first glimpse about the education outcomes for youth with a foster care history in four California counties.

FINDINGS FROM FOUR COUNTIES

K-12 Education

Youth with a foster care history under-perform at rates significantly greater than closely matched students on the majority of education outcomes in both English and algebra and geometry. ***Only 1 in 5 foster youth are proficient in English by the 11th grade and a staggeringly low 1 in 20 are proficient in math by the 11th grade.***

Higher Education

In community colleges, youth with a foster care history fare much worse on a number of measures. Compared to their peers, foster youth are:

- 25% less likely to continue their education beyond the first year;
- 15% more likely to enroll in a remedial math class;
- 64% less likely to obtain a community college associate degree.

Influencing Factors

Ethnicity is a primary risk factor in high school. Compared to white foster youth, black and Hispanic youth are significantly less likely to achieve English and math proficiency on the majority of standardized tests.

- Foster youth who attend low ranked schools significantly under-perform on standardized math and English tests at all grade levels.
- Financial aid emerges as the single most important factor in community college success. Foster youth who receive financial aid are 100% likely to continue to pursue a degree than those who don't.

IMPLICATIONS

Findings from this report inform policy, practice, and future research directions in three ways.

- **Resources and support make a difference for foster youth.** More in-depth investigation about policies and practices that support foster youth in obtaining financial aid is needed.
- **We need to continue our focus on foster student policy and practice.** Data linking is critical to understanding how practice and policy decisions affect academic attainment over time.
- **More study is needed to fully understand the implications these results.** While this report is a critical first step, more research and analysis is needed to gain insight into the factors that impede success and improve outcomes.

STUDY LIMITATIONS

As a pilot, this study does not include a representative sample of California's foster youth. Only data for four counties are included which limits the ability to project findings to a larger population. As both of the primary data sets are administrative, no information is available about student mental or physical health. Due to the cross-sectional design of the study, it only presents a "snap-shot" of how youth achieve in a given year. The counties were not identified to maintain confidentiality.

NEXT STEPS

California is on the cutting edge of using data to help ensure foster youth succeed in school—and life.

Our next research project will expand beyond this four-county pilot project to examine linked statewide child welfare and education data. This report will delve more deeply into understanding the factors that promote and impede success through a longitudinal analysis of how foster youth are doing in California's education system.

Research shows that students in foster care can and do succeed when they are given the proper support. Armed with this upcoming statewide research, we can identify which intervention and support programs most effectively support foster youth in their academic success. We can also identify when those services are needed most—for critical moments such as the shift from middle to high school and enrollment in higher education—when students are the most vulnerable to falling off track.

The Stuart Foundation will focus on supporting foster students' educational success during these critical moments moving forward.

2

BACKGROUND

Educators, child welfare social workers, and legislators advocate tirelessly for vulnerable foster youth. At the federal, state, and local levels, both child welfare and education institutions have specific policy directives to address the education needs of foster children across the school levels. The federal No Child Left Behind (NCLB) act focuses on eliminating the achievement gap for disadvantaged students. Although NCLB does not specifically identify foster youth, the majority of school-aged foster youth fall into the disadvantaged categories defined by the law. States are mandated by the Child and Family Services Review (CFSR) to report if foster youth receive appropriate services to meet their educational needs while in care. Further, the Chafee Foster Care Independence Program (CFCIP) requires states to report postsecondary information for children who exit the foster care system via emancipation.

Several mandates to monitor foster youth education exist in the state of California. Passed in 2004, the AB490 and McKinney-Vento Act require that every school district appoint a Homeless Liaison and an Educational Liaison to ensure that foster youth students obtain necessary services. The recently passed Assembly Bill 12, the California Fostering Connections to Success Act extends services to foster youth past age eighteen. Lastly, California Educational codes §89342 and §89343 mandate that California State Universities and Community Colleges assist emancipated foster youth by ensuring housing and support.

Although prior research identifies foster youth as an educationally vulnerable population, little information exists as to how they fare in California schools. The lack of accessible linked child welfare and education data is the most critical missing component to improve services and outcomes for this population [26].

In order to begin to fill this data gap, the Center for Social Services Research at the University of California Berkeley (CSSR), the California Partnership for Achieving Student Success (Cal-PASS), and the Stuart Foundation initiated a collaborative partnership to link child welfare and education data.

This pilot project, entitled *Ready to Succeed: An exploration of secondary and postsecondary educational outcomes for foster children in California*, linked Child Welfare Services Case Management System (CWS/CMS) data with secondary and postsecondary education data in four California counties. The resulting dataset provides an opportunity to investigate aggregate education outcomes of youth with a foster care history in California.

PRIOR RESEARCH

Foster youth frequently enter school without the skills necessary for academic success [27]. Compared to their peers, foster students are more likely to have lower achievement test scores and perform below grade level [28,29,30]. As they progress through school and fall further behind, foster youth disengage from the school setting [31].

Foster students are twice as likely as non-foster youth to leave high school before completion [32,33,34]. As less than 9% of jobs in the workforce are available to high school dropouts [35], the opportunity for foster youth without a high school degree to become self-sufficient is limited.

While 7-28% of foster youth in the United States attend college [36,37,38,39], those who do are more likely to attend training classes than to pursue a postsecondary degree [40]. Approximately 1-9% of foster youth earn a postsecondary degree compared to 28% of the general population [41,42].

Several studies suggest that foster youth aspire to attend postsecondary institutions. McMillen et al. [43] interviewed youth involved in the Independent Living Program. While 70% expressed a desire to attend college, at the time of interviews, 11% had dropped out of school. Similarly, Reilly [44] interviewed youth who had aged-out of the child welfare system and found that while only 30% had completed high school, over 75% of the youths expressed that a college degree was a goal. Unfortunately, while foster youth appear to hold relatively high educational aspirations, they often are unable to achieve these goals.

Several factors impede successful completion of secondary and post-secondary education outcomes for foster youth. Placement instability, which may increase the likelihood of additional school moves and educational failure, complicates educational attainment [45,46,47]. The longer youth remain in foster care, the greater the likelihood of multiple placement moves [48] and the lower the odds that these youth will complete high school, attend college, or achieve self-sufficiency [49].

For youth who graduate from high school, obtaining financial assistance for college is problematic [50]. While money is available for foster youth to attend college, only 10% of youths who apply for a Cal Grant, California's need-based financial aid award, actually receive the grant [51].

Factors which facilitate successful education outcomes include continued child welfare supervision and minimal placement changes [52,53]. Pecora et al. [54] concluded that being older at age of entry and few placement changes predicted high school completion. Courtney and Dworsky [55] found that foster youth who reside under child welfare supervision are twice as likely to enroll in college as those who exit the system at age eighteen. Moreover, youth who obtain a high school diploma and are still in care at age 19 are three times more likely than their emancipated peers to enroll in college.

Study's Contribution

The current study builds on past research regarding secondary and postsecondary education outcomes for foster youth. In particular, this study matches youth with a foster care history to students in the general population on noted academic at-risk variables. Secondly, education outcomes for all types of foster youth, not solely those who age-out or emancipate, are included.

The current research focuses on the following research questions:

Question 1: What are the secondary and postsecondary education outcomes for foster youth in California?

Question 2: How do foster students' education outcomes compare to those of closely matched students?

Question 3: What factors facilitate or impede successful completion of secondary and postsecondary education for foster youth?

METHOD

This section provides an overview of the study's methods. Please see more detail about methods and procedures in the Technical Appendix.

Data

The data sources for this pilot study are administrative child welfare and education records. Additionally, California Department of Education (CDE) data are used for two analyses.

California Child Welfare Administrative Data

The Child Welfare Services Case Management System (CWS/CMS), a centralized statewide data system in California, is used to identify a sample of youth aged 12 and older with a foster care history. CWS/CMS provides information about important case characteristics such as the reason youth enter the child welfare system, age at entry, length of stay in foster care placement, and exit type.

California Partnership for Achieving Student Success

Education data are obtained from the California Partnership for Achieving Student Success (Cal-PASS) archive, a voluntary data sharing initiative. Cal-PASS currently houses up to 13 years of education data, which include secondary institutions, California community colleges, California State Universities, and the University of California system. Cal-PASS is a voluntary consortium, so members decide the type and years of data to make available. Therefore, education data in this project varies by content, district, and school year.

The Cal-PASS data source provides all education outcomes in addition to key at-risk variables such as English Language Learner (ELL) status, participation in the free lunch program, and primary disability.

California Department of Education

Data for two analyses come from the California Department of Education (CDE) Annual Performance Index (API). Demographic data specific to school and district are used to investigate possible differences between participating and non-participating school districts. Additionally, school quality is measured by CDE State Rank data (Please see the Technical Appendix for more information on district comparisons and state rank).

Data Linking

Data for youth aged 12 and older who resided in foster care between January 1, 1998 and December 31, 2008 within four California counties were extracted from CWS/CMS. The Federal Education Rights and Privacy Act (FERPA) law specifically disallows identifiable data sharing between state agencies [56]. Therefore, the research team maintained the anonymity of the students throughout the data link procedure.

Linking Child Welfare and Education Data

Child welfare and education administrative data in four California counties are linked to assess a variety of education outcomes for youth aged 12 and older with a history of foster care placement. Identifying information which includes first and last names, date of birth, gender, and social security numbers underwent an encryption process to create a variable that appeared as a string of unrelated numbers and letters. Cal-PASS education data are encrypted in this manner and as the process is consistent (i.e., transforms the sequences of variables in a uniform manner) this variable is used to match child welfare to education data.

Once education data are extracted, unique project identifiers which cannot be linked back to either CWS/CMS or Cal-PASS data systems are used to merge child welfare case characteristics to education data.

Samples

Two cross-sectional samples for each school segment level investigation are employed. The first sample includes youth with a foster care history closely matched by education at-risk factors to students in the general population. The second sample contains students with a foster care history and includes child welfare case characteristics.

Details about the middle and high school, community college, and university samples are presented in the Tables Appendix.

The current study utilizes youth with a history of foster care placement. This means that education data does not necessarily coincide with when foster youth are in out of home care. As initial analyses found no significant differences in the timing of foster care placement and education outcome, the groups are combined for the pilot analyses. Detail about timing of foster care spell and education data are in the Technical Appendix.

Middle and High School

For both samples, only students with Standardized Testing and Reporting (STAR) data are included. The STAR file contains necessary education variables needed for analyses (e.g. English language learner status, participation in the free lunch program, disability status). In instances where STAR data are missing for an education outcome year, researchers use the most recent available year of data.

Youth with a foster care history are matched to students in the general population by a number of key factors which include: age, school year, grade level, gender, ethnicity, English language learner (ELL) status, participation in the free/reduced lunch program, exact primary disability, school district, and same school, if possible. In instances where same school is not possible, students are matched by school rank, a measure of school quality. Sample size varies by specific education outcome. The matched sample includes 4,186 unique foster youth and 6,405 unique comparison students (Table 1).

Table 1: Unique student samples by school level			
	Foster Youth/Comparison		Foster Youth
School Level	Foster Youth	Comparison	
8-12	4,186	6,405	9,295
Community College	7,135	7,135	7,284
University	415	415	418

The foster youth only sample includes youth with a foster care history who have STAR and education data of interest. While the sample size varies by specific education outcome, overall 9,295 unique foster youth are included.

Community College

At the community college level, foster youth and comparison students are matched on age, gender, ethnicity, college term and year, primary disability, and financial aid status. The matched sample includes 7,135 foster youth and an equal number of comparison students. The foster youth only sample contains 7,284 unique students.

University

Foster youth and students in the general population are matched by age, gender, ethnicity, term and year, university, and enrollment status. The sample contains 415 foster youth and an equal number of comparison students. The university foster youth sample includes 418 students.

ANALYSES

Analyses include descriptive, bivariate, and multivariate models with relative risk outcomes.

Bivariate: Sample means and proportions for all demographic, at-risk factors, and child welfare case characteristics are calculated. These analyses examine sample characteristics and differences in education outcomes proportions among groups.

Multivariate: The study also uses a regression model with relative risk outcomes. Specifically, a 'modified' Poisson approach estimates relative risk using robust error variance [57]. The primary purpose of these analyses is to examine whether differences in education outcomes among groups are maintained after controlling for other factors. Additionally, these analyses determine which factors are associated with education outcomes at a statistically significant level. Findings are presented as relative risk ratios which estimate the probability of an event occurring in one group compared to another group.

LIMITATIONS

As with any research endeavor, this study has limitations. As this is a pilot effort, the study includes data from four California counties and is not representative of the state population.

Only school districts within those four counties participated in the study. Therefore, if students transferred to a district outside of the participating districts or focal counties, no data are available.

Data for youth with a documented foster care placement within the four counties are extracted from CWS/CMS. While we can say with some certainty that comparison students were not in foster care between 1998 and 2008 within the focal counties, we do not know if these students were the subject of a child maltreatment investigation. Further, they may have been subject to a foster care placement in other counties within California.

For the 8-12 analyses, only students with demographic data in the STAR file are included in the sample which limits the sample size. Due to varying types and years of data, the same sample of students are not used across the various education outcomes. Additionally, due to data availability, longitudinal analyses are not possible for this pilot study.

As the two primary data sets involved in the project are administrative, the type of information included in the analyses is limited. Neither data set holds information about mental or physical health or family background characteristics. Additionally, no information about attendance, suspension, or drop-out status is available.

The current study utilizes youth with a history of foster care placement. This means that education data does not necessarily coincide with when foster youth are in out of home care. As initial analyses found no significant differences in the timing of foster care placement by education outcome, the decision was made to combine groups. In doing so, the results of analyses are largely modeling the effects of maltreatment as opposed to the effects of placement in out of home care. Future research which separates youth with a history from those currently in care is necessary to distinguish maltreatment effects from placement effects. (Note: For more information please see the Technical Appendix: Data Preparation).

Due to stipulations in FERPA, the data set is anonymous. This limits the ability to update information or to explore outcomes in a qualitative manner.

Finally, the pilot study dataset does not include all California students and therefore, accurate comparisons for the education outcomes are limited. General population estimates are provided when available, but should be interpreted with caution as they are calculated from outside samples.

MIDDLE & HIGH SCHOOL EDUCATION OUTCOMES

FOSTER YOUTH AND COMPARISON SAMPLE

Measures in English and math, including proficiency levels on the California Standards Test (CST), success in courses, passing the California High School Exit Exam (CAHSEE), and high school diploma receipt, assess student achievement in middle and high school. These investigations examine the association among at-risk characteristics related to education outcomes, including ethnicity, English Language Learner (ELL) status, participation in the free lunch program, primary disability, school rank (a measure of school quality), and foster care status.

Findings for the foster youth and comparison student sample are described below. See detailed descriptions of the analyses in the Technical Appendix.

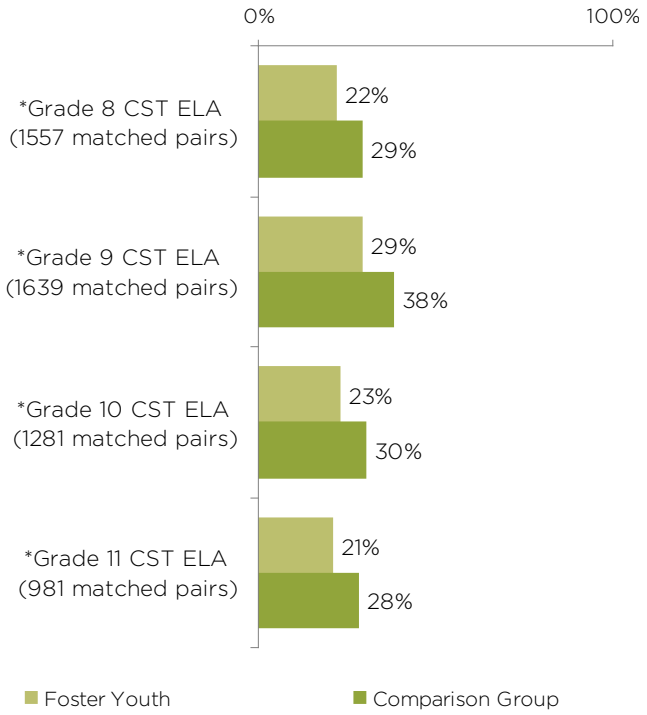
English

English education outcomes include proficiency on the California Standards Test (CST) English Language Arts (ELA) section, English course success, and passing the California High School Exit Exam (CAHSEE) English section.

California Standards Test (CST), English Language Arts (ELA)

The CST, administered every year for students in grades 2 to 11, determines how well students have learned specific grade relevant information [58].

At each grade level, test topic specific scores are converted to a proficiency level which includes far below basic, below basic, basic, proficient, and advanced. To align with the CDE goal that every student achieves proficiency, performance levels are collapsed with a '0' indicating that the student scored in the far below basic, below basic, or basic category and a '1' indicating that the student achieves a performance of proficient or advanced.



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 1: Percent of Foster Youth and Matched Comparison Group Scoring Proficient or Advanced on CST English Language Arts Test.

Figure 1 depicts English proficiency levels for foster youth and comparison students in grades 8 to 11. Twenty-one (21) to 29% of foster youth achieve proficiency compared to 28 to 38% of the closely matched sample. The proportion of foster students who are proficient or above is significantly below that of the comparison group at every grade level. California general student population rates[3] for the same grade levels and school years range from 36-45% [59]. This indicates that both foster youth and the closely matched sample are underperforming compared to their peers.

[3] The General Population calculations are from the California Department of Education, http://star.ced.ca.giv. The percentages represent the average proficiency rate (advanced or proficient) by grade levels and years.

Table 2 presents the results of the multivariate regression model which adjusts for gender, ethnicity, ELL, free lunch, disability, and poor school rank. Even after these education at-risk variables are held constant, 8th to 11th grade students with a foster care history are between 24 and 26% percent less likely to achieve proficiency compared to the closely matched students.

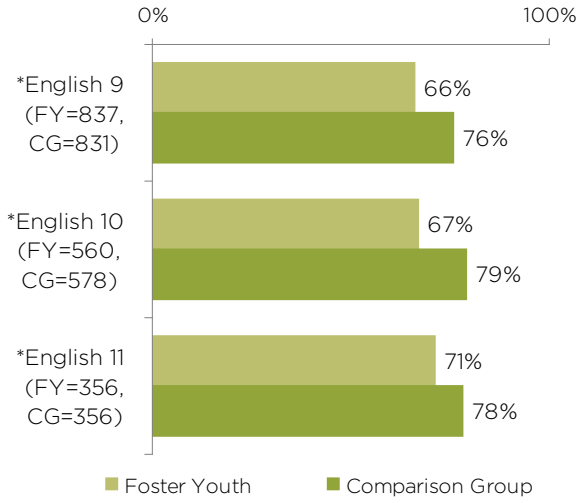
Table 2: Likelihood of being proficient on the English Language Arts California Standard Test[A]

Grade Level	8	9	10	11	
Foster Youth are . . .	24%	25%	24%	26%	Less likely than comparison students

English Course

Success in English courses is assessed in grades 9 to 11. Success is defined as receiving a passing grade of C- or better.

In grades 9 to 11, sixty-six (66) to 73% of foster youth pass the grade-level English course. At all grades, the proportion of foster youth who achieve success is significantly below that of the comparison students (Figure 2).



* Difference is statistically significant at the 0.05 level.

Figure 2: Percent of Foster Youth and Matched Comparison Group Successfully Completing High School English Courses

Results of the multivariate model indicate that compared to their closely matched peers, foster youth are 9 to 15% less likely to achieve success in their English course in grades 9 to 11 (Table 3).

Table 3: Likelihood of being proficient in English Course[A]

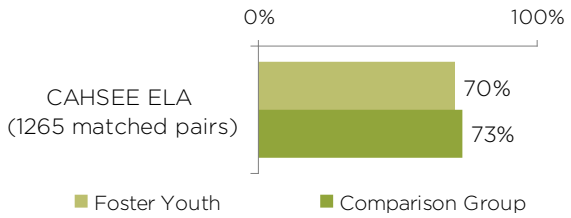
Grade Level	9	10	11	
Foster Youth are . . .	13%	15%	9%	Less likely than comparison students

California High School Exit Exam (CAHSEE), English Language Arts

Students must pass the English language arts (ELA) section of the CAHSEE to earn a high school diploma. Students typically take the examination for the first time in 10th grade and can continue to take it up to six additional times through grades 11 and 12 until the section is passed. For the current investigation, success is indicated if the student passes the test by the end of 10th grade.

While 70% of youth with a foster care history pass the English section of CAHSEE and 73% of comparison students do so by the end of the 10th grade (Figure 3), the difference is not significant. These results are lower in relation to the California general population where 76% pass the exam by the end of 10th grade [60].

The multivariate analysis finds, after adjusting for education at-risk factors, no significant difference between foster and comparison students on the ELA CAHSEE.



Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 3: Percent of Foster Youth and Matched Comparison Group Passing the English Portion of the CAHSEE

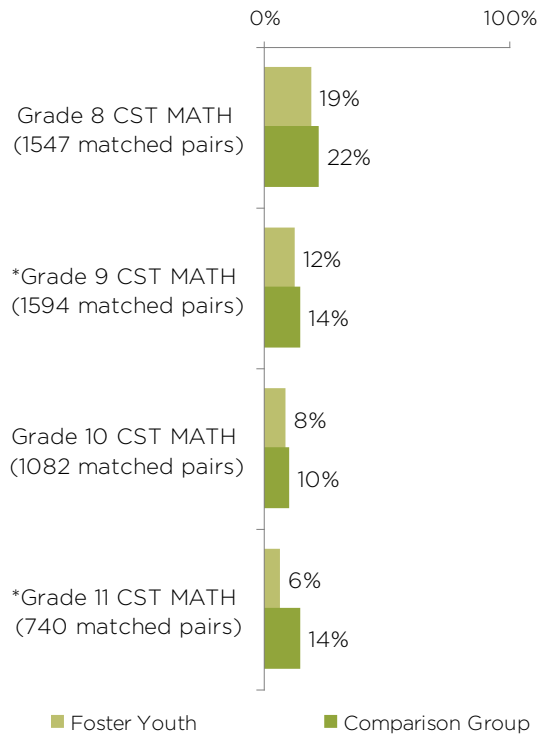
[A] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank.

Math

To investigate performance in math, proficiency on the math California Standards Test (CST), success in math courses, and passing the California High School Exit Exam (CAHSEE) math section are explored.

California Standards Test, Math[4]

Six (6) to 19% of foster youth and 10-22% of the matched sample achieve proficiency on the math section of the CST in grades 8 to 11(Figure 4). However, differences in proportions are significantly different only in grades 9 and 11. Both groups under perform compared to the California general population[5] where 18-34% of students are proficient or above [61].



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 4: Percent of Foster Youth and Matched Comparison Group Scoring Proficient or Advanced on CST Mathematics Test

Table 4 depicts selected results from the multivariate model. After adjusting for the association with education at-risk factors, foster youth are 17% less likely in 9th grade and 56% less likely in 11th grade to be proficient compared to the closely matched group. One explanation for the discrepancy in results among grade levels is that students in grades 8 and beyond take sub-level math tests which are not examined in this study.

Table 4: Likelihood of being proficient on the Math California Standards Test[A]

Grade Level	8	9	10	11	
Foster Youth are. . .	NS	17%	NS	56%	Less likely than comparison students

Math Course

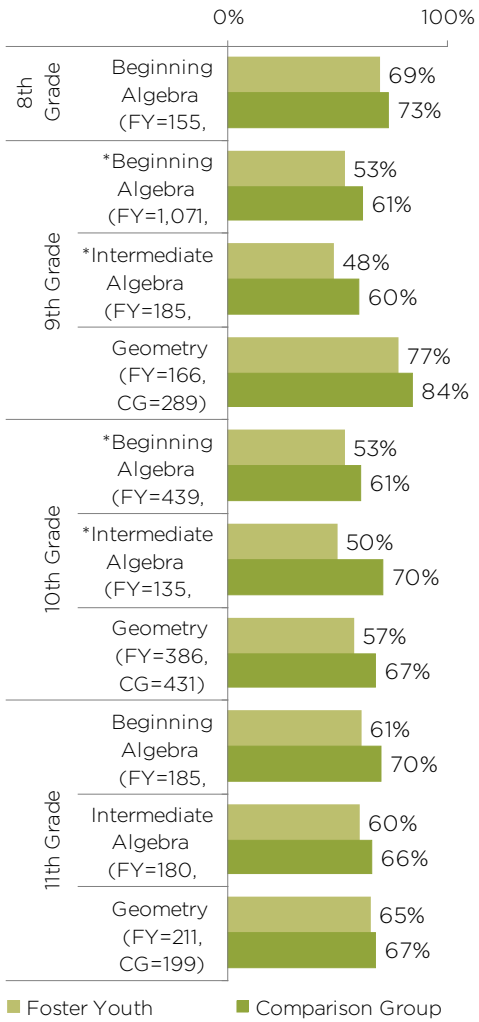
Math courses are divided into three separate course types: beginning algebra, intermediate algebra, and geometry. Success is defined as receiving a grade of C- or better.

Success in beginning algebra is assessed for grades 8 to 11. While the proportion of foster youth who achieve success is lower than the comparison students, only differences in grades 9 and 10 are statistically significant (Figure 5). In both 9th and 10th grade, 53% of foster youth compared to 61% of the matched students pass beginning algebra.

[4] For more information about the math CST, please see the California Standards Test, ELA section (above) or the Technical Appendix.

[5] The General Population calculations are from the California Department of Education, http://star.cde.ca.gov. The percentages represent the average proficiency rate (advanced or proficient) by grade level and years.

[A] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank.



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 5: Percent of Foster Youth and Matched Comparison Group Successfully Completing High School Math Courses

Table 5 depicts selected results of the multivariate investigation. After adjusting for the association with education at-risk factors, foster youth are 15% less likely to pass beginning algebra in grades 9 and 10 compared to their closely matched peers. There are no significant differences between the two groups in grades 8 and 11.

Success in intermediate algebra is assessed for grades 9 to 11. Youth with a foster care history underperform compared to the matched sample, although the difference in 11th grade fails to achieve statistical significance (Figure 5). After adjusting for education at-risk factors, foster youth are between 18 and 27% less likely to achieve success in grades 9 and 10 (Table 5).

Lastly, success in geometry coursework is investigated for grades 9 to 11. While the proportion of foster youth who achieve success in these grades is less than the comparison group, only grade 10 achieves significance (Figure 5). After adjusting for education at-risk factors, foster youth are 15% less likely to pass geometry in 10th grade compared to the closely matched students (Table 5).

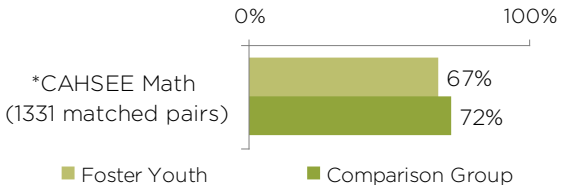
Table 5: Likelihood of success in math courses[A]

Grade Level	8	9	10	11	
Beginning Algebra					
Foster Youth are . . .	NS	15%	15%	NS	Less likely than comparison students
Intermediate Algebra					
Foster youth are . . .	NA	18%	27%	NS	Less likely than comparison students
Geometry					
Foster Youth are . . .	NA	NS	15%	NS	Less likely than comparison students

California High School Exit Exam (CAHSEE), Math

The proportion of foster youth who pass the CAHSEE math test by the end of the 10th grade is significantly lower than students in the comparison sample (67% versus 72%; Figure 6). These results also are lower than the California general population where approximately 75% pass the exam by the end of 10th grade [62].

After adjusting for the association with other characteristics, foster students are 7% less likely to pass the CAHSEE math test than their closely matched peers.



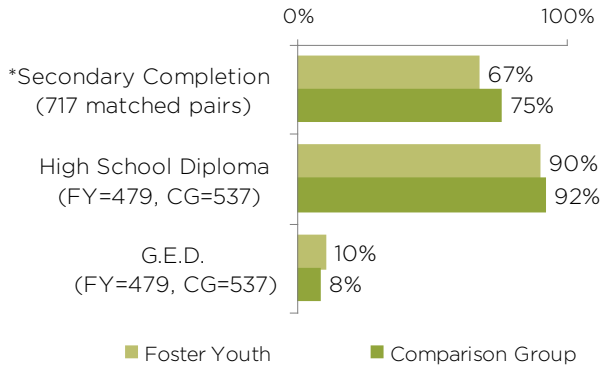
* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 6: Percent of Foster Youth and Matched Comparison Group Passing the Mathematics Portion of the CAHSEE

[A] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank.

High School Completion

Award is assessed for all students who had 12th grade course data. While foster youth are significantly less likely to have award information, there are no significant differences between the two groups in obtaining a high school diploma or GED (Figure 7).



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 7: Percent of Foster Youth and Matched Comparison Group Obtaining High School Diploma or GED.

FOSTER YOUTH ONLY SAMPLE

In this section, the research team presents middle and high school outcomes only for youth with a foster care history. Findings from the foster youth sample identify specific at-risk and child welfare characteristics related to education outcomes. At-risk factors consist of ethnicity, ELL status, participation in the free lunch program, primary disability, and school rank (a measure of school quality). Child welfare variables include age at entry, placement number, length of stay in foster care, first vs. re-entry, and exit type. Please see Technical Appendix for more information about variables and findings.

English

California Standards Test, English Language Arts (ELA)

Sixteen (16) to 24% of foster youth achieve proficiency on the California Standards Test ELA section in grades 8 to 11 compared to 36-45% of the California student population [63].

Several education at-risk factors are related to foster youth outcomes. In comparison to white foster youth, black students are 39-46% less likely and Hispanic students are 30-45% less likely to achieve proficiency in grades 8 to 11 (Table 6). English language learner (ELL) foster youth are 32-48% less likely to achieve proficiency compared to their non-ELL counterparts. Further, youth with a documented primary disability are 75-85% less likely to achieve proficiency compared to foster youth with no noted disability.

Table 6: Likelihood of being proficient on the English Language Arts California Standards Test among Foster Youth (FY)[B]

Grade Level	8	9	10	11	
Education Risk Factors					
Black FY are . . .	46%	42%	39%	40%	Less likely than white FY
Hispanic FY are . . .	35%	36%	30%	45%	Less likely than white FY
ELL FY are . . .	32%	38%	41%	48%	Less likely than non-ELL FY
Disabled FY are . . .	75%	81%	82%	85%	Less likely than non-disabled FY
FY in Poor Ranked Schools (1) are . . .	38%	12%	31%	NS	Less likely than FY in high ranked school
Child Welfare Factors					
FY reunified with family are . . .	39%	26%	NS	40%	Less likely than FY with no exit
FY with 5+ Placements are . . .	35%	11%	NS	34%	Less likely than FY with no exit

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

Of the child welfare case characteristics investigated, only placement number and exit type achieve significance. Foster students with five or more placements are between 11-35% less likely to achieve proficiency in grades 8, 9, and 11 compared to those with 1-2 placements. In terms of exits, youth who remain in care may fare better than those who exit. Compared to youth with no recorded exit, foster youth who reunify with their parents are between 26-40% less likely to achieve proficiency in grades 8, 9, and 11.

English Course

In grades 9 to 11, 67-82% of foster youth achieve success in English courses. Differences between groups of foster students appear after adjusting for demographic, education, and child welfare case characteristics (Table 7). Compared to white foster youth, black foster students are 7-9% less likely to achieve success in grades 9 to 11. Hispanic foster youth are 10% less likely in grade 9 and 8% less likely in grade 11 to achieve proficiency compared to white foster students.

Table 7: Likelihood of being proficient on English Course among foster youth (FY)[B]

Grade Level	9	10	11	
Education Risk Factors				
Black FY are	7%	9%	7%	Less likely than white FY
Hispanic FY are . . .	10%	NS	8%	Less likely than white FY
Child Welfare Factors				
FY with 5+ placements are	13%	NS	9%	Less likely than FY with 1-2 placements

Foster youth with 5 or more placements are 13% less likely in 9th grade and 9% less likely to succeed in 11th grade compared to youth with 1-2 recorded placements.

California High School Exit Exam (CAHSEE), English Language Arts

Compared to 76% of the general California student population [64], 63% of the sampled foster youth pass the CAHSEE ELA by the end of 10th grade.

Table 8: Likelihood of being proficient on CASHEE ELA among foster youth (FY)[B]

Grade Level	10	
Education Risk Factors		
Black FY are	19%	Less likely than white FY
Hispanic FY are . . .	16%	Less likely than white FY
ELL FY are . . .	16%	Less likely than non-ELL FY
Disabled FY are . . .	60%	Less likely than non-disabled FY
FY in Poor Ranked Schools (1) are . . .	9%	Less likely than FY in high ranked schools

Compared to white foster youth, black students are 19% and Hispanic youth 16% less likely to pass the test by the end of the 10th grade (Table 8). ELL foster youth are 16% less likely, students with disabilities 60% less likely, and those in low ranked schools 9% less likely to pass compared to their peers.

No significant differences in CAHSEE pass rates are seen in maltreatment type, age at entry, placements, or exit type.

Math

California Standards Test, Math

Only 5-15% of foster youth achieve proficiency on the math CST in grades 8 to 11 compared to 18-34% of the California student population [65]. Overall, at-risk characteristics are related to proficiency on the math CST with the exception of the ELL and free/reduced lunch variables (Table 9).

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

Table 9: Likelihood of being proficient on the Math California Standards Test among foster youth (FY)[B]

Grade Level	8	9	10	11	
Education Risk Factors					
Black FY are . . .	46%	48%	64%	54%	Less likely than white FY
Hispanic FY are . . .	35%	48%	41%	63%	Less likely than white FY
Disabled FY are . . .	75%	86%	87%	79%	Less likely than non-disabled FY
FY in Poor Ranked Schools (1) are . . .	53%	44%	46%	NS	Less likely than FY in high ranked school
Child Welfare Factors					
FY reunified with family are . . .	34%	NS	61%	75%	Less likely than FY with no exit
FY with legal guardianship are . . .	NS	NS	49%	83%	Less likely than no exit FY

Compared to white foster youth, black foster youth are 46- 64% less likely and Hispanic foster youth 35-63% less likely to achieve proficiency. Students with disabilities and those in low ranked schools are also significantly less likely to score proficient or above compared to their peers.

Youth who remain in care may fare better than those who exit. Foster youth who exit via family reunification are 34-75% less likely to achieve proficiency in grades 8, 9, and 11 compared to those with no recorded exit. Students who exit due to legal guardianship are 49-83% less likely to achieve proficiency in grades 10 and 11.

Math Course

Among foster students who enroll in beginning algebra, 55-73% achieve success. Black students are 14- 23% less likely to achieve success across grade levels compared to white foster youth (Table 10).

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

Students in low-ranked schools are 14 and 22% less likely to achieve success in grades 9 to 11 than those in higher performing schools.

Table 10: Likelihood of being successful in Beginning Algebra among foster youth (FY)[B]

Grade Level	8	9	10	11	
Education Risk Factors					
Black FY are . . .	14%	17%	23%	16%	Less likely than white FY
FY in Poor Ranked Schools (1) are . . .	NS	14%	16%	22%	Less likely than FY in high ranked school

In intermediate algebra classes, 49-64% of foster youth earn a C- or above in grades 9 to 11. In 10th and 11th grade, black foster youth are 30 to 40% less likely to pass compared to white students (Table 11). In 11th grade, significant differences between groups of foster students are noted for black, Hispanic, ELL students, and those in low ranked schools.

Table 11: Likelihood of being successful in Intermediate Algebra among foster youth (FY)[B]

Grade Level	10	11	
Education Risk Factors			
Black FY are . . .	30%	40%	Less likely than white FY
Hispanic FY are . . .	NS	19%	Less likely than white FY
ELL FY are . . .	NS	14%	Less likely than non-ELL FY
FY in Poor Ranked Schools (1) are . . .	NS	22%	Less likely than FY in high ranked school

Sixty (60)-75% of foster students who enroll in geometry achieve success. Black students are 15 to 19% less likely to pass the class compared to their white peers in 9th and 10th grade (Table 12). Those attending a low ranked school are 14 to 23% less likely to succeed compared to students in higher performing schools in grades 9 to 11.

Table 12: Likelihood of being successful in Geometry among foster youth (FY)[B]				
Grade Level	9	10	11	
Education Risk Factors				
Black FY are . . .	19%	15%	NS	Less likely than white FY
FY in Poor Ranked Schools (1) are . . .	14%	18%	23%	Less likely than FY in high ranked school

California High School Exit Exam (CAHSEE), Math

Fifty-nine (59) percent of foster youth pass the CAHSEE math exam by the end of 10th grade compared to 75% of students in California [66]. Black and Hispanic foster youth are less likely to pass compared to white foster students (29 and 27% less likely, respectively; Table 13). Students with a documented disability are 60% less likely to pass the exit test than foster youth with no noted primary disability.

Table 13: Likelihood of being proficient on CAHSEE math[B]		
Grade Level	10	
Education Risk Factors		
Black FY are	29%	Less likely than white FY
Hispanic FY are . . .	27%	Less likely than white FY
Disabled FY are . . .	60%	Less likely than non-disabled FY

Award

Only 40% of foster youth with 12th grade course information have award data. Of those, 91% graduate high school with a diploma. ELL foster youth are 8% more likely and those who attend a low ranked school are 5% more likely to earn a high school degree compared to their peers. Compared to students with no recorded exit, youth who exit via adoption are 19% more likely to graduate with a high school diploma.

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

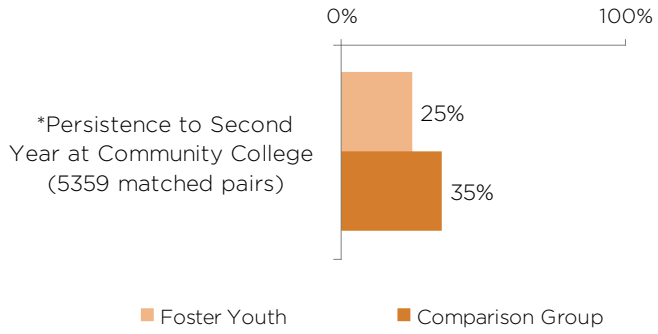
COMMUNITY COLLEGE

In the community college sample, student performance is measured by persistence, English and math remedial course enrollment, and Associate's degree completion. Please see detailed descriptions of these variables in the Technical Appendix.

FOSTER YOUTH AND COMPARISON SAMPLE

Persistence

Researchers measure persistence as enrollment in the first term of the student's second year in college. Students still enrolled in classes after the first year are considered to have persisted to their second year.



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 8: Persistence to Second Year of Community College for Foster Youth and Matched Comparison Group

While persistence rates are low in both the foster youth and comparison group, the rate for foster youth is significantly lower. As depicted in Figure 8, 35% of the comparison group and only 25% of foster youth persist. These rates are lower than one statewide estimate of 70% persistence[6] from one year to the next [67].

After adjusting for a variety of factors, foster youth are 26% less likely to persist than comparison students (Table 14).

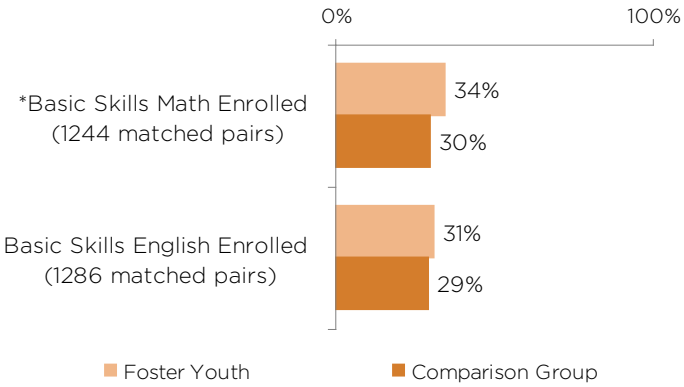
[6] This statewide persistence rate is calculated for fall 2008-2009. While the estimate provides context for the foster youth percentages, but interpretation is cautioned because it comes from a different source and methodology. See endnote for more information.

Table 14: Likelihood of persisting in community college[C]		
Foster Youth are . . .	26%	Less likely than comparison students

Remediation (Basic Skills)

The California community colleges identify courses far below college level as "basic skills." Enrollment data are analyzed to determine who attempted at least one course in math or English and the proportion of students who enroll in a basic skills course in these subjects.

Figure 9 indicates that foster youth are slightly more likely to enroll in basic skills math than the comparison group (34% versus 30%, respectively). These rates are larger than a statewide estimate that one in five (20%)[7] California students enrolls in a basic skills course [68].



* Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 9: Basic Skills Enrollment in Community College for Foster Youth and Matched Comparison Group

[7] This statewide basic skills enrollment rate provides context for the foster youth percentages, but interpretation is cautioned because it comes from a different source and methodology. See endnote for more information.

[C] Model adjusts for the following: gender, black and Hispanic (white is reference group), disability, and financial aid status.

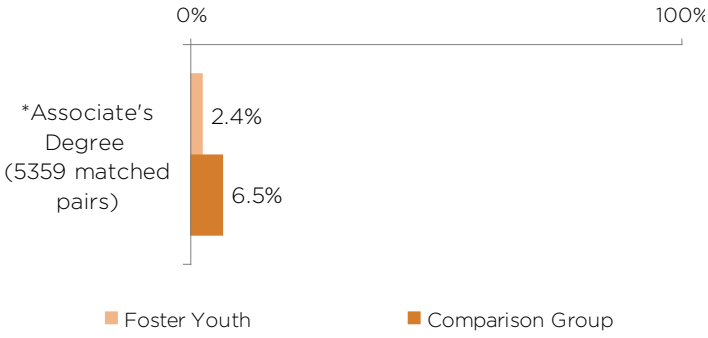
After adjusting for gender, ethnicity, disability, and financial aid status, foster youth are 15% more likely to enroll in math basic skills courses than students in the comparison group (Table 15). No statistically significant differences are found between foster youth and comparison student enrollment in basic skills English courses.

Table 15: Likelihood of being enrolled in basic skill courses in community college[C]

	Basic Skills English	Basic Skills Math	
Foster Youth	NS	15%	More likely than comparison students

Degree Attainment

Approximately 2% of foster youth obtain an Associate's degree compared to 6.5% of the closely matched sample (Figure 10). A comparative statewide estimate is not available for this measure. (Note: These figures do not account for student goals. For example, many students transfer to a university without attaining an Associate's degree).



* Difference is statistically significant at the 0.05 level. Counts show denominators.

Figure 10: Associate's Degree Attainment for Foster Youth and Matched Comparison Group

After adjusting for various factors, foster youth are 64% less likely to achieve an Associate's degree than comparison students (Table 16).

[C] Model adjusts for the following: gender, black and Hispanic (white is reference group), disability, and financial aid status.

Table 16: Likelihood of earning a degree in community college[C]

Foster Youth are . . .	64%	Less likely than comparison students

FOSTER YOUTH ONLY SAMPLE

Persistence, English and math remedial course enrollment, and Associate's degree completion are measures of performance in community college for the foster youth only sample. The research team investigates outcomes by relevant demographic factors and child welfare characteristics. Child welfare variables included age at entry, placement number, length of stay in foster care, first vs. re-entry, and exit type. Please see the Technical Appendix for more information regarding variables and findings.

Persistence

Overall, 28% of foster youth persist from their first community college enrollment to a second year. Foster students who receive some form of financial aid are 136% more likely to persist to the second year (Table 17). Additionally, students with a noted disability are 28% more likely to persist than their peers.

Significant child welfare factors include number of placements while in foster care. Foster youth with 5 or more placements are 21% less likely to persist than youth with one or two placements.

Table 17: Likelihood of being persistent in community college among foster youth (FY)[B]

Education Risk Factors		
Disabled FY are . . .	28%	More likely than non-disabled FY
FY financial aid recipients are . . .	136%	More likely than FY without financial aid
Child Welfare Factors		
FY with 5+ placements are . . .	21%	Less likely than FY with 1-2 placements

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

Remediation (Basic Skills)

Thirty-four (34) percent of foster youth enroll in basic skills math courses, while 30% enroll in basic English courses.

Black foster youth are 16% less likely than whites to enroll in basic skills math (Table 18). Foster youth who receive financial aid are 152% more likely to enroll in basic skills English and 129% more likely to enroll in basic skills math than students who did not receive financial aid.

Table 18: Likelihood of being enrolled in basic skill courses in community college among foster youth (FY)[C]

	Basic Skills English	Basic Skills Math	
Education Risk Factors			
Black FY are . . .	NS	16%	More likely than white FY
FY financial aid recipients are . . .	152%	129%	More likely than FY without financial aid

Degree Attainment

Overall, only 2% of foster youth who enroll in community college attain an Associate's degree.

Among the foster youth sample, students who receive financial aid are 503% more likely to earn their degree. Further, those with 3 or 4 placements are 65% less likely to attain a degree compared to those with one or two placements (Table 19).

Table 19: Likelihood of degree attainment in community college among foster youth (FY)[B]

Education Risk Factors		
FY financial aid recipients are . . .	503%	More likely than FY without financial aid
Child Welfare Factors		
FY with 3-4 placements are . . .	65%	Less likely than FY with 1-2 placements

[B] Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

[C] Model adjusts for the following: gender, black and Hispanic (white is reference group), disability, and financial aid status.

UNIVERSITY

University student performance measures include persistence, English and math remedial course enrollment, and degree completion. The research team analyzed outcomes separately for transfer and non-transfer students. Please see detailed descriptions of these variables in the Technical Appendix.

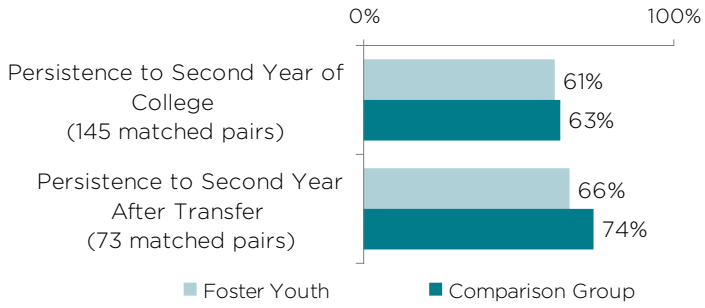
Note: Statewide comparison percentages are not available for these measures, and due to the small sample size, readers should interpret the university findings with caution.

FOSTER YOUTH AND COMPARISON SAMPLE

Persistence

The research team calculates persistence based on students who are still enrolled in the second year at a university compared to those who initially enroll.

Persistence rates at the university level are similar for foster youth and matched comparison students. For non-transfer students 61% of foster youth and 63% of comparison students persist (Figure 11). Among transfer students, the rates are slightly higher with 66% of foster youth and 74% of comparison students persisting to year two. Neither of these differences is statistically significant.

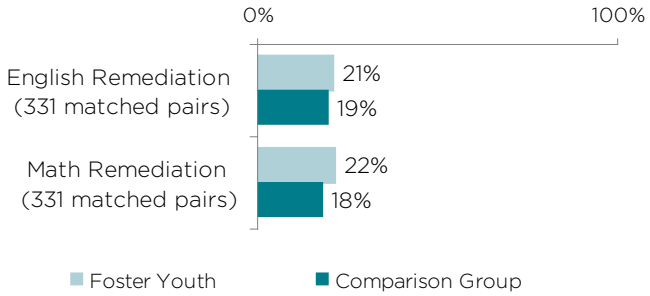


Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 11: University Persistence for Foster Youth and Matched Comparison Group

Remediation

Figure 12 depicts the rates of remediation among foster youth and comparison groups at the university level. Transfer students are not included in the remediation analysis because they most likely complete their remedial course work prior to transfer.



Difference is statistically significant at the 0.05 level.
Counts show denominators.

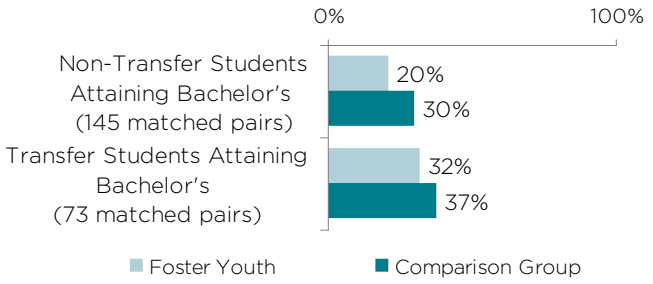
Figure 12: Remediation at University for Foster Youth and Matched Comparison Group

Foster youth enroll in remedial English courses 21% of the time, while the comparison students enroll 19% of the time. In math, foster youth and comparison students' enrollment in remedial math courses is 22% and 18%, respectively. The differences are small and not statistically significant.

Degree Attainment

For degree attainment, only students who have sufficient time to complete a degree (4 or more years after the first postsecondary enrollment) are included in analysis.

Twenty-percent (20%) of first-time foster youth freshmen (non-transfer students) attain a Bachelor's degree, while 30% of the comparison students get a degree (Figure 13). Among students who transfer to a university, 32% of foster youth and 37% of the comparison students earn a Bachelor's degree. Neither of these differences achieve significance.



Difference is statistically significant at the 0.05 level.
Counts show denominators.

Figure 13: Bachelor's Degree Attainment for Foster Youth and Matched Comparison Group

FOSTER YOUTH ONLY SAMPLE

Persistence, enrollment in remedial math and English courses, and degree completion assess university student performance. Outcomes are analyzed separately for transfer and non-transfer students. In addition to investigating outcomes by relevant demographic factors, the analyses include child welfare characteristics. Child welfare variables are age at entry, placement number, length of stay in foster care, first vs. re-entry, and exit type. Please see the Technical Appendix for more information regarding variables and findings).

Note: Due to the small sample size, readers should interpret the university findings with caution.

Persistence

Overall, 66% of foster youth persist to a second year at the university level. There are no significant demographic differences between foster youth who persist and those who do not enroll in the second year.

Foster youth who entered care between 11 and 13 years of age are 71% less likely to persist than those who entered before age 6. However, no differences exist among the other age at entry groups.

Remediation

About one out of five foster youth enroll in remedial math and English classes (22 and 21%, respectively).

Analysis of remedial course work within the university foster youth sample suggests that males are 51% less likely than females to enroll in remedial math and English courses. Black foster youth are 194% more likely than white students to enroll in a remedial English course, though no significant differences are found in remedial math course enrollment.

Foster youth who enter care between 11 and 13 years of age, are twice as likely to enroll in remedial English courses compared to youth who enter care before age six. No other significant differences among age at entry groups exist.

Degree Attainment

While 20% of non-transfer (enter the university as freshmen) foster youth earn a Bachelor's degree, 32% of transfer foster youth get a degree.

Male non-transfer foster youth are 79% less likely to earn a bachelor's degree compared to females. Among transfer youth, black and Hispanic students are 91-95% less likely to get a degree compared to white students.

6

SUMMARY IMPLICATIONS AND FUTURE RESEARCH

The main study objectives are to: 1) successfully link the two datasets and 2) explore education outcomes of foster youth. This study builds upon previous research by matching youth with a foster care history to students in the general population by noted at-risk factors. The study also investigates outcomes for youth who exit foster care outside of emancipation. Results are limited by a number of factors including the cross-sectional design of the investigation which presents a 'snap shot' of how youth achieve in a given point in time. This report provides a first glimpse about the education experience of youth with a foster care history in four California counties.

Secondary Education

Compared to similar students at the same point in time, youth with a foster care history struggle in high school. The proportion of foster youth who achieve successful outcomes is less than the closely matched comparison group for every measure among grade levels. These findings align with prior research which suggest that foster students are more likely to have lower achievement test scores compared to their peers [69,70,71].

English is particularly difficult for foster youth. Foster youth are 24-26% less likely to achieve proficiency than comparison students on the 8th -11th grade English Language Arts (ELA) California Standards Test (CST). Overall, both the foster and comparison students underperformed compared to the California student population.

While foster youth performed more poorly than comparison students on the ELA CST and English courses, foster youth performed on par with comparison students on the California High School Exit Exam (CAHSEE). Discrepancies also exist between the two standardized tests at the State level where approximately 38% of the student population scores proficient on the ELA CST, while a much larger proportion (76%) pass the CAHSEE in 10th grade. It may indicate that the English portion of the CAHSEE covers more basic skills than the grade level specific CST.

In math, foster youth are less proficient than the comparison students in grades 8 to 11, but the differences are only significant in grades 9 and 11. Overall, foster and comparison students achieve proficiency far less often than the general California student population.

Significant differences in math course achievement are most prominent in 10th grade. Foster youth are 15-27% less likely to successfully pass algebra and geometry courses compared to the closely matched student sample. Foster youth also are 7% less likely to pass the CAHSEE math exam by the end of 10th grade.

One explanation for the discrepancy in math results among standardized tests and coursework is that students in grades 8 and beyond take sub-level math tests on the CST. Sub-level CST math tests correspond to enrollment in higher level math courses such as beginning and intermediate algebra. While not examined in the CST analyses, it may be that the 10th grade student sample reflects an overall lower math sub-level group.

Postsecondary Education

At the community college level, youth with a foster care history are 26% less likely to persist than the matched comparison group, and both groups persist at lower levels compared to the state population. Foster youth are 15% more likely to enroll in a remedial math class, and are 64% less likely to obtain an Associate's degree compared to similar students. The degree estimates do not take into account student goals such as preparation to transfer to a university without attaining an Associate's degree.

Significant differences between foster youth and comparison students disappear at the university level. This finding may reflect a self selection bias in which high-functioning foster youth with strong support systems are able to move directly from high school to the university level. The findings may also be due to the small sample size or the cross-sectional study design. Further investigation is necessary to understand the implications of the university outcomes.

Influencing Factors

Especially at the high school level, foster youth who identify with education at-risk subgroups are at increased risk for poor academic performance.

Much like the general population, black and Hispanic foster students are significantly less likely to have positive outcomes in English and math at the high school level compared to their white peers. As black and Hispanic youth disproportionately enter foster care, findings underscore the need for additional educational support for non-white foster youth.

Of all the subgroups, foster youth with disabilities have significantly worse outcomes on standardized tests at all grade levels in English and math than those without. Though, these same gaps in achievement did not translate to success in coursework. This disparity in outcomes may be due to this study's focus on grade level appropriate English and advanced math courses. It is likely that fewer foster youth with disabilities are represented in the higher-level or grade appropriate courses, and those students that are enrolled may have less debilitating types of primary disabilities (i.e. higher-functioning). At the community college level, students with a disability are 28% more likely to persist, which may be a reflection of programs to support students with disabilities.

Approximately 30-50% (compared to 1-12% for the general child population) of foster youth receive special education services [72]. Further research which unpacks outcomes by specific disability type and services received is necessary to understand the impact of disability on different education outcomes at the secondary and postsecondary levels.

One aspect largely overlooked in prior research is the impact of school quality on academic performance. Even after adjusting for known education risks, foster youth who attend low ranked schools significantly underperform on standardized tests compared to those who attend better quality schools. Past research suggests that foster youth cluster in low performing schools, [73] and an understanding of how this impacts academic attainment over time is needed.

One factor that emerged as an important support for success at the community college level was financial aid. Foster youth who received monetary assistance are significantly more likely to persist and to earn an Associate's degree than those who receive no support. While prior literature suggests that obtaining financial assistance for college is problematic [74], this finding highlights how important monetary support helps foster youth succeed in higher education.

Child Welfare Factors

Although some child welfare factors are associated with academic performance, no consistent trends emerge at the high school, community college, or university levels. These findings are not surprising given the limitations of the study. The results may be due to the cross sectional study design and sample-specific outcomes, or some other factor not examined in this study (e.g. mental health status, placement type).

One child welfare factor that is associated with education outcomes is multiple placements. Foster youth with 5 or more placements fared significantly worse on the ELA CST and English courses at the secondary level in comparison to youth with 1 to 2 placements. This finding aligns with past research which finds that placement instability complicates educational attainment [75,76,77].

Findings suggest that youth who stay in foster care fare more poorly compared to those with certain types of exits. In this study, youth who exit foster care via family reunification and legal guardianship are less likely to achieve proficiency on the ELA and math California Standards Test at the secondary school level. As past research has primarily focused on youth who age-out of foster care placement [78,79], more exploration is needed to understand the association between exit type and academic performance.

While initial analyses indicate no significant differences among groups of foster youth who left care prior, who enter care after, or whose foster care experience coincides with the education outcome data used in analyses, this finding requires investigation. Further research which includes maltreatment referrals in addition to time before entrance or after exit may help explain the lack of significant differences among groups. Please see the Technical Appendix, Data Preparation Section.

IMPLICATIONS

The key findings inform policy, practice, and future research directions in three ways.

Compared to similar vulnerable students at the same point in time, foster youth perform more poorly on a variety of education outcomes. This finding emphasizes the need for continued focus on foster students in policy and practice realms. It also highlights the need for collaboration between child welfare and education entities. Long term efforts to link data are imperative to understand how practice and policy decisions affect the academic attainment of foster youth over time.

Resources can make a difference for foster youth. The importance of supportive services is highlighted at the community college level. Findings indicate that financial aid resources for foster youth are associated with post-secondary success. A more in-depth investigation as to policies and practices that support foster youth in obtaining financial aid can help mitigate challenges and ensure that foster youth who wish to attend college have the monetary support to do so.

This study identifies that certain groups of foster youth are more academically vulnerable. In particular, foster youth with disabilities are a critically underperforming group in high school compared to their peers. An evaluation of the unique needs and current services for this subpopulation is needed to ascertain how services can be improved or more systematically implemented. This population appears to have educational needs far above those of other foster youth populations.

Implications At A Glance

1. A continued policy and practice focus on foster students is needed.
2. Services can make a difference.
3. Certain groups of foster youth are more academically vulnerable.

FUTURE RESEARCH

This project overcame many challenges to investigate education outcomes for foster youth in California. Most importantly, the project sets a precedent for Federal Education Rights and Privacy Act (FERPA) compliant data sharing between child welfare and education. This pilot study provides a first glimpse at the education outcomes for California foster youth.

Many more avenues of investigation with the linked child welfare and education data set created in this pilot study are possible. The current study included youth with a history of foster care placement, which means that education data does not necessarily coincide with out of home placement. Future research, which separates youth with a history from those currently in care, is necessary to distinguish maltreatment effects from placement effects. Additionally, exploration of the intersection between foster youth and English language learner (ELL) students, the impact of different types of primary disabilities, or differences in California Standards Test math outcomes by math-sub levels are just a few of the investigations possible.

Most importantly, future longitudinal research designed to follow the education outcomes of students is needed to understand how foster care placement, practice efforts, and policy initiatives impact the education attainment of youth over time.

Plans are underway to expand the California pilot child welfare and education administrative data link statewide. This expansion will address many of the pilot limitations. The priority of this effort is to follow cohorts or groups of students from secondary to post-secondary institutions. This approach will more extensively investigate the relationship between youth's foster care experience and education achievement in secondary and postsecondary education.

ENDNOTES

1 - Needell, B., Webster, D., Armijo, M., Lee, S., Dawson, W., Magruder, J., Exel, M., Glasser, T., Williams, D., Zimmerman, K., Simon, V., Putnam-Hornstein, E., Frerer, K., Ataie, Y., Atkinson, L., Blumberg, R., & Cuccaro- Alamin, S. (2010). Child Welfare Services Reports for California. Retrieved [June 15, 2008], from University of California at Berkeley Center for Social Services Research website. URL: http://cssr.berkeley.edu/ucb_childwelfare

2- Conger, D., & Rebeck, A. (2001). How children's foster care experiences affect their education: Vera Institute of Justice: New York Administration for Children's Services

3- Pecora, P., Williams, J., Kessler, R., Hiripi, E., O'Brien, K., Emerson, J., Herrick, M., & Torres, D. (2006). Assessing the educational achievements of adults who were formerly placed in family foster care Child and Family Social Work, 11, 220-231.

4- Smithgall, C., Gladden, R., Howard, E., George, R. & Courtney, M. (2004). Educational experiences of children in out-of-home care. Published by Chapin Hall Center for Children.

5- Aviles, A., Anderson, T., & Davila, E., 2006 Child and adolescent social-emotional development within the context of school. Child and Adolescent Mental Health, 11(1), 32-39.

6- Leiter, J., & Johnson, M. (1994). Child maltreatment and school performance. American Journal of Education, 102(2), 154-189.

7- Smithgall, C., et al., op. cit.

8- Courtney, M., Terao, S., & Bost, N. (2004). Midwest evaluation of the adult functioning of former foster youth: Conditions of youth preparing to leave state care. Chicago: Chapin Hall Center for Children at the University of Chicago

9- Pecora, P., et al., op. cit.

10- California Education Collaborative for Children in Foster Care. (2008).Ready to Succeed: Changing Systems to Give California's Foster Children the Opportunities They Deserve to Be Ready for and Succeed in school. Recommendations and Implementation Strategies from the California Education Collaborative for Children in Foster Care. Santa Cruz, CA: Center for the Future of Teaching and Learning

11- Heimpel, D. (2010) Better Foster Care: A Child-Powered Movement. Huffington Post. (Retrieved on 11/1/2010). http://www.huffingtonpost.com/daniel-heimpel/better-foster-care-achil_b_670430.html

12- Needell, B., et al., op. cit.

13- Conger, D., & Rebeck, A., op. cit.

14- Pecora, P., et al., op. cit.

15- Smithgall, C., et al., op. cit.

16- Aviles, A., Anderson, T., & Davila, E., op. cit.

17- Leiter, J., & Johnson, M. op. cit.

18- Smithgall, C., et.al., op. cit.

19- Courtney, M., Terao, S., & Bost, N. op. cit.

20- Pecora, P., et. al., op. cit.

21- Barnettt, D., Vondra, J., & Shonk, S. (1996). Self-perceptions, motivation, and school functioning of low-income maltreated and comparison children. Child Abuse and Neglect, 20(5), 397-410.

22- Duncan, G. J., & Magnuson, K. A. (2005). Can family socioeconomic resources account for racial and ethnic test score gaps? Future of Children, 15(1), 35-54.

23- Leiter, J., & Johnson, M., op. cit.

24- Hill, R. B. (2006). Synthesis of research and disproportionality in child welfare: An Update. Casey-SCCP alliance for racial equity in child welfare system. Retrieved January 2, 2008, available from http://www.cssp.org/major_initiatives/ racialEquity.html

25- Wulczyn, F., Smithgall, C. and Chen L. (2009). Child Well-Being: The Intersection of Schools and Child Welfare. In Review of Research in Education: Risk, Schooling, and Equity. Eds. Gadsden, V., Davis, J. E., Artiles, A. J. Vol 33, 35-62

26- California Education Collaborative for Children in Foster Care, op. cit.

27- Barnettt, D., Vondra, J., & Shonk, S. op. cit.

28- Conger, D., & Rebeck, A., op. cit.

29- Leiter, J., & Johnson, M. op. cit.

30- Smithgall, C., et.al., op. cit.

31- Burchinal, M., Roberts, J., Zeisel, S., Hennon, E., & Hooper, S. (2006). Social risk and protective child, parenting, and child care factors in early elementary school years. Parenting: Science and Practice, 6(1), 79-113.

32- Aviles, A., Anderson, T., & Davila, E., op. cit.

33- Leiter, J., & Johnson, M. op. cit.

34- Smithgall, C., et.al., op. cit.

35- Carnevale, A., & Desrochers, D. M. (2003). Standards for what? The economic roots of K–16 reform. Washington, DC: Educational Testing Service.

36- Blome, W. (1997). What happens to foster kids: Educational experiences of a random sample of foster care youth and a matched group of non-foster care youth. Child and Adolescent Social Work Journal, 14(1), 41-54.

37- Burley, M., & Halpern, M. (2001). Educational attainment of foster youth: Achievement and graduation outcomes for children in state care. Olympia, WA: Washington State Institute for Public Policy.

38- Courtney, M., Terao, S., & Bost, N. op. cit.

39- Pecora, P., et. al., op. cit.

40- Blome, W. op. cit.

41- Courtney, M., Terao, S., & Bost, N. op. cit.

42- Pecora, P., et. al., op. cit.

43- McMillen, C., Auslander, W., Elze, D., White, T., & Thompson, R. (2003). Educational experiences and aspirations of older youth in foster care. Child Welfare (4), 475-495.

44- Reilly, T. (2003). Transition from care: Status and outcomes of youth who age out of foster care. Child Welfare, 727-746.

45- Cadoret, R., & Riggins-Caspers, K. (2002). Fetal alcohol exposure and adult psychopathology: Evidence from an adoptive study. In R. Barth, K. Brodzinsky & M. Freundlich (Eds.), Adoption of drug exposed children (pp. 106-129). Washington D.C.: Child Welfare League of America.

46- De Bellis, M. (2001). Developmental traumatology: The psychobiolgoical development of maltreated children and its implications for research, treatment, and policy. Development and Psychopathology, 13, 539-564.

47- Eckenrode, J., E. Rowe, Laird, M., and Brathwaite, J.. (1995). Mobility as a mediator of the effects of child maltreatment on academic performance. Child Development, 6(4): 1130-1142.

48- Webster, D., Barth, R., & Needell, B. (2000). Placement stability for children in out-of-home care: A longitudinal analysis. Child Welfare, 79(5), 614-632.

49- Smithgall, C., et.al., op. cit.

50- Blome, W. op. cit.

51- Legislative Council of California. (2008) California Education Code, Section 89340-89347: Higher Education Outreach and Assistance Act for Emancipated Foster Youth. Retrieved June 15, 2008 from http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=89001-90000&file=89340-89347.

52- Courtney, M., & Dworsky, A. (2006). Early outcomes for young adults transitioning from out-of-home care in the USA. Child and Family Social Work, 11, 209-219.

53- Pecora, P., et. al., op. cit.

54- Ibid.

55- Courtney, M., & Dworsky, A., op. cit.

56- Winnick, S. Y., (2009) Final Amendments to FERPA Regulations: Data Quality Campaign Webinar. Education Council LLC. Retrieved from https://admin.na3.acrobat.com/_a756966085/p74276192/ on January 12, 2009.

57- Zou, G. (2004). A modified Poisson regression approach to prospective studies with binary data. American Journal of Epidemiology, 159(7), 702-706.

58- CDE (California Department of Education) (Retrieved on11/1/2010). Data Quest Search for CST Proficiency Rates.

59- Ibid.

60- CDE (California Department of Education) (Retrieved on November 1, 2010). Data Quest Search for CAHSEE Pass Rates. http://dq.cde.ca.gov/dataquest/cahsee/SearchCahsee.asp?rYear=2006-07&Topic=ExitExam&Level=State&cName=&cCounty=&rbTimeFrame=oneyear

61- CDE, CST, op. cit.

62- CDE, CAHSEE, op. cit.

63- CDE, CST, op. cit.

64- CDE, CAHSEE, op. cit.

65- CDE, CST, op. cit.

66- CDE, CAHSEE, op. cit.

67- CCCCO (2010). Accountability Reporting for the Community Colleges: Draft Report – a report for the Legislature, pursuant to AB 1417. CCCCO. Sacramento, CA

68- Perry, P. (2002). Study Session on Basic Skills: Background Data. CCCCO. Sacramento, CA.

69- Conger, D., & Rebeck, A., op. cit.

70- Leiter, J., & Johnson, M. op. cit.

71- Smithgall, C., et.al., op. cit.

72- California Education Collaborative for Children in Foster Care, op. cit.

73- Smithgall, C., et al., op. cit.

74- Blome, W. op. cit.

75- Cadoret, R., & Riggins-Caspers, K., op. cit.

76- De Bellis, M., op. cit.

77- Eckenrode, et al., op. cit.

78- Courtney, M., & Dworsky, A., op. cit.

79- Pecora, P., et. al., op. cit.

80- Heimpel, op. cit.