



Examining the K-12 Journey through San Francisco Unified School District

A LONGITUDINAL STUDY OF STUDENT OUTCOMES

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Prepared for:
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By:

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Social Research Group



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Executive Summary

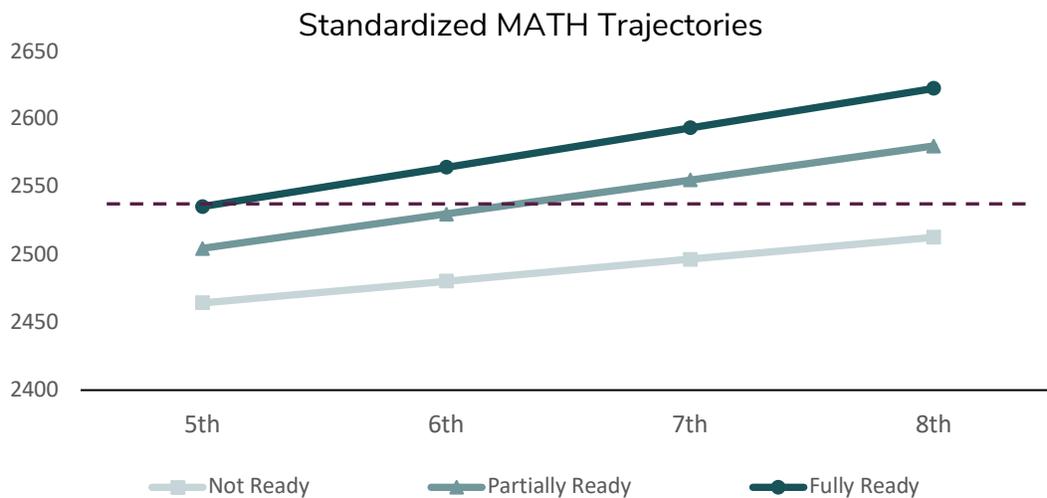
San Francisco has a robust history of investing in early childhood education, preparing its youngest residents for their best start on their academic journeys. Originally funded by First 5 San Francisco, the first representative district-wide kindergarten readiness assessment was conducted in the San Francisco Unified School District (SFUSD) in 2009. Building on this initial effort, this study, funded by the San Francisco Department of Early Childhood, examines the academic achievement trajectories of that 2009 kindergarten readiness cohort to examine how school readiness affects students' academic outcomes over their K-12 experiences.

In short, this study finds that school readiness matters. Not only are children better prepared for school when they have developed the foundational skills that will support their kindergarten success, but school readiness accrues benefits through to high school graduation in a variety of ways. The more ready a child was in kindergarten, the higher their performance on standardized English Language Arts (ELA) and Mathematics tests in third grade and through later years. Significant effects of school readiness in kindergarten were found on middle school grade point average, even after controlling for many sociodemographic and school factors. And young students who are more ready to start school in kindergarten are ultimately more likely to graduate high school on time.

Children who are ready for school start at a distinct advantage that persists throughout their SFUSD K-12 journey. The key finding from this study is that **students who start school with higher levels of readiness launch their academic achievement trajectory from this more advantageous starting point.** The red dotted line in the figure on the following page illustrates that the elevated starting point of Fully Ready students continues to support student achievement into the 8th grade, such that even if they demonstrated no growth at all between 5th and 8th grades, their achievement would still exceed that of Not Ready students whose performance had improved over the grades. **This is how school readiness matters.**

Children who were ready for school at kindergarten continued to demonstrate higher achievement in standardized testing in English Language Arts (ELA) and Mathematics and maintained higher grade point averages through middle school and were ultimately more likely to graduate high school on time. These data suggest that all efforts should be made to deliver children to kindergarten ready to learn.

Importantly, our findings suggest that it is very difficult and highly unlikely to catapult from one trajectory to a more successful trajectory. Children who are less ready at kindergarten don't score as highly on early standardized tests, and it doesn't appear that they catch up over the course of their school journeys. Although these children do improve in test scores over time, so too do the children who arrived at school ready to go. Trajectories between ready and less ready children remain parallel and, in some cases, narrow or widen, but never cross. Although all trajectories demonstrate growth, gaps that existed in early years between children more and less ready for school persist as they advance to much later years in school, as demonstrated in the figure below, which characterizes the typical trajectories observed in this study.



In short, it appears to be exceedingly unlikely for student performance to switch paths and change slopes to any meaningful degree. As illustrated in our example above and in the several trajectory figures presented throughout this report, the higher starting point of *Fully Ready* students delivers them to a point in 8th grade that far exceeds that of *Not Ready* students. Given the intransigence of the slopes, the **best intervention is to raise the starting point and provide the necessary supports before children even enter the SFUSD K-12 system, placing a spotlight on the importance of early education experiences.**

And, findings highlight the importance of family engagement in supporting young students on their academic paths. Students whose families were highly engaged with them in early childhood tended to have better academic outcomes through high school. **Family engagement was associated with positive academic outcomes all the way into 12th grade.** About one-fourth of families in 2009 were “High Engagement Families” who tended to spend a lot of time with their children engaged in a variety of activities (on average, 5-6 times per week per activity type) and visiting community resources (e.g., Family Resource Centers, libraries, parks, etc.) with their children. These families also reported higher levels of coping and social support and participating in parent education classes or support groups than the other family groups. Children from “High Engagement Families” achieved higher standardized test scores in ELA and Math in 5th through 8th grades, and they also received higher grades in 8th through 12th grades as compared with their peers who had lower levels of engagement with their families at the start of kindergarten.

Taken together, our findings demonstrate the importance of early investments in preschool and other early childhood enrichment and highlight the critical role parents and caregivers play in setting up children for lifelong success.



Introduction

THE IMPORTANCE OF KINDERGARTEN READINESS

Much attention has been paid to ensuring that children are academically and socially ready for kindergarten. More recently, there has also been recognition that classrooms must be ready to welcome the children who arrive. The assumption underlying these investments, of course, is that by delivering children to school ready to learn, students' learning journeys will be more successful, which sets them up for more positive life outcomes down the road.

It is generally accepted that high-quality early educational experiences are effective in preparing children for kindergarten. In fact, this belief fuels the Biden administration's efforts to fund universal pre-K. And indeed, there is evidence that a high-quality preschool experience can make an important difference for children, especially in the early years of their schooling. However, some debate remains as to whether the impact of preschool – and kindergarten readiness – is sustained over time, as long-term follow-up studies are few.

Some studies, for example, have found that gains associated with preschool are no longer detectable in later elementary school performance on achievement tests.¹ Another study finds that cognitive gains associated with state preschool attendance were no longer present even by the end of the kindergarten year.²

¹ Lipsey, M. W., D. C. Farran, and K. Durkin (2018): "Effects of the Tennessee Prekindergarten Program on Children's Achievement and Behavior Through Third Grade," *Early Childhood Research Quarterly*, 45, 155–176.

² Lipsey, M.W., Farran, D.C., & Hofer, K.G.,(2015). A Randomized Control Trial of the Effects of a Statewide Voluntary Prekindergarten Program on Children's Skills and Behaviors through Third Grade (Research Report). Nashville, TN: Vanderbilt University, Peabody Research Institute.

However, several other studies do find that positive impacts of high-quality early childhood education persist at least into the early elementary years, producing positive impacts on grade retention, performance on achievement tests, and cognitive abilities.³ Indeed, some studies are finding longer-term positive effects of preschool on such outcomes as high school graduation,⁴ taking the SAT, and college enrollment.⁵

Moreover, recent research suggests that when examining the long-term impacts of preschool, a focus on academic outcomes is too narrow a scope. Rather, preschool may be more closely associated with development of social emotional strengths that persist well into adulthood. A recent study found that preschool graduates fared substantially better than those who did not have the benefit of a preschool experience on important measures of well-being many years later: Preschool graduates were less likely to be suspended in high school, less likely to be incarcerated as juveniles, more likely to graduate high school, more likely to take the SAT, and to enroll in college.⁶

Does Kindergarten Readiness Matter in the Long Run?

Once a child enters kindergarten, does the variability in readiness matter? Are schools able to take children who are not as ready for school and socialize them quickly enough for subsequent success? Or, do early school readiness skills connect with academic and social outcomes in later years?

This study takes advantage of a representative, district-wide sample of students who were assessed by their kindergarten teachers on a school readiness assessment when they entered kindergarten in 2009. As this cohort of students prepares for high school graduation and beyond, this study examines how school readiness, family background and practices at home are associated with academic outcomes over the K-12 trajectory. In this report we investigate such questions as:

³ Frede, E., Jung, K., Barnett, W. S., & Figueras, A. (2009). *The APPLES blossom: Abbott Preschool Program Longitudinal Effects Study (APPLES), preliminary results through 2nd grade*. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University; Malofeeva, E., Daniel-Echol, M., & Xiang, Z. (2007). *Findings from the Michigan School Readiness Program 6 to 8 follow up study*. Ypsilanti, MI: High Scope Educational Research Foundation; Peisner-Feinberg, E. S., & Schaaf, J. M. (2010). *Long-term effects of the North Carolina More at Four Pre-Kindergarten Program: Children's reading and math skills at third grade*. Chapel Hill, NC: Frank Porter Graham Child Development Institute, University of North Carolina.

⁴ Temple, J., & Reynolds, A. (2007). Benefits and costs of investments in preschool education: Evidence from the Child-Parent Centers and related programs. *Economics of Education Review*, 26, 126-144.

⁵ Gray-Lobe, G. Pathak, P.A., & C.R. Walters. (2021). *The Long-Term Effects of Universal Preschool in Boston*. NBER Working Paper No. 28756.

⁶ Gray-Lobe, Guthrie, Parag A. Pathak and Christopher R. Walters. 2023. *The Quarterly Journal of Economics* (2023), 363–411. <https://doi.org/10.1093/qje/qjac036>.

- If a young child is school-ready upon entry to kindergarten, do they stay academically on track throughout the years?
- Does early school readiness provide a tailwind benefit rendering one better situated for later success?
- For children who were not ready at kindergarten, are they able to catch up to their ready peers?
- What can families do at home to improve their child's academic trajectory?

A CLOSER LOOK AT KINDERGARTEN READINESS IN SFUSD

In partnership with First 5 San Francisco, the San Francisco Unified School District (SFUSD) conducted its first kindergarten readiness assessment in fall 2007, contracting with evaluation firm Applied Survey Research to assess incoming kindergartners' school readiness using a reliable and validated observation-based tool, the Kindergarten Observation Form (KOF). In 2009, the first representative sample ($N = 742$) of entering kindergarten students was assessed, providing the district with a generalizable view of children's preparedness for school. Kindergarten teachers were trained to complete the KOF for each child in their classroom, furnishing information across key developmental areas. In addition, parents of the 2009 kindergarten cohort were asked to complete a Parent Information Form (PIF) to furnish basic demographic background information and information about family activities and well-being.

In Spring 2022, most of the 2009 kindergarten cohort would have graduated from high school. Because district student identification numbers were recorded on the 2009 readiness assessments, information about these students' academic journeys over the ensuing 12 years could be linked, providing a unique opportunity to examine the trajectories of the 2009 cohort and relate outcomes to their school readiness at kindergarten entry.

In this report, we build a model to understand what early elements predict later academic and behavioral outcomes. With such information, the City and SFUSD will be better positioned to invest in supports that make a difference and provide targeted interventions for identified risks.



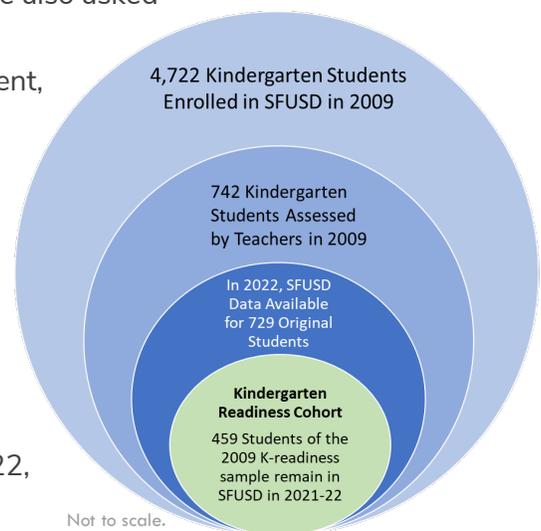
Methodology Overview

THE KINDERGARTEN READINESS COHORT

In 2009, 4,722 kindergartners enrolled in SFUSD schools. At that time, a random sample of elementary schools (and kindergarten classrooms within those schools) was selected across the district for participation in the Kindergarten Readiness Assessment. In Fall 2009, 742 entering kindergartners in 42 classrooms in 41 SFUSD schools were assessed by their teachers on the Kindergarten Observation Form (KOF) to provide a picture of each student's school readiness across 24 skills. The kindergartners' parents were also asked to complete the Parent Information Form (PIF), providing information about their family background, child development, early childcare experiences, family activities, and social support.⁷

Figure 1. **Kindergarten Readiness Cohort**

Although 742 students were assessed as part of the Kindergarten Readiness Study in 2009, subsequent SFUSD data were available for 729 students. Of course, not all of these students remained in SFUSD schools over the ensuing 12 years. As the figure illustrates, in 2021-2022,



⁷ Appendix C: Methodological Details of the Original 2009 Kindergarten Readiness Study provides more details about the initial assessment. While 751 students were actually assessed in 2009, 742 of those students had administrative data available as of the data extraction in October, 2022.

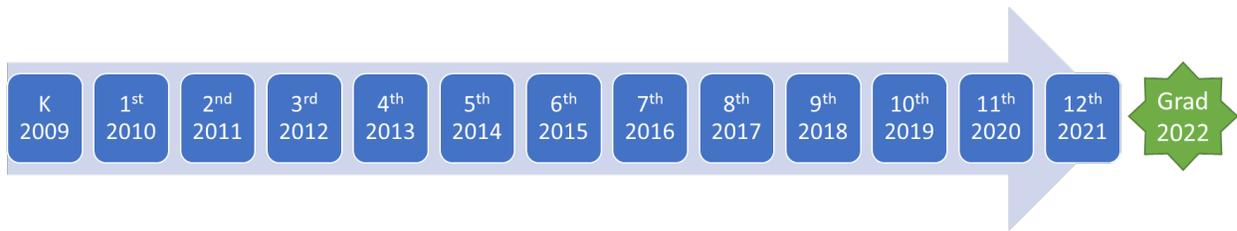
To ensure that there were no significant differences between students included in the Kindergarten Readiness Assessment and other incoming kindergarten students, a series of analyses compared those in the KOF study to those who were not in the KOF study (see Appendix D: 2009 Kindergarten Readiness Sample vs. Peers). There were no significant differences in their demographics including gender, race/ethnicity, English Learner status, and special education status in 2009, as well as the percentages of students transferring out of SFUSD until 2022.

there remained 459 students in the **Kindergarten Readiness Cohort** from the original set of 742 assessed students.

Those who left SFUSD over the years between 2009 and 2021 were different from those who stayed in: they more likely to be White, speak English, have no identified special needs, and have families with higher income. Additionally, their earlier standardized scores before leaving SFUSD tended to be higher than those who stayed in, but those who left during high school tended to have lower high school GPA before leaving.⁸

The figure below shows – for those students who were promoted into the next grade each year – the progression of grades and the years of entry that correspond with each grade for this cohort.

Figure 2. **Grade Level Progression of the Kindergarten Readiness Cohort by Year**



⁸ For readers interested in characteristics of those who transferred out of the district over time, please refer to

Appendix A.

Appendix A: Who Transferred out of SFUSD? summarizes differences between those who transferred out of SFUSD and those who stayed within the district.

DATA COLLECTED

Because SFUSD assigns unique identification numbers to every student, data for each student’s academic journey through SFUSD were available, including English Learner status, special education status, attendance, and suspensions. Standardized test scores and grades were also provided, as available.⁹ The following table summarizes the sources of data for this report, as well as the sample sizes available for each type.

Table 1. Data Sources

Data Source	Date of Administration	Content	Sample Size Available
Kindergarten Observation Form (KOF)	Fall 2009	Preschool experience, special needs status, primary language, conflict resolution style, physical well-being and motor development, social & emotional development, communication & language usage, cognition & general knowledge, coping skills	742
Parent Information Form (PIF)	Fall 2009	Early child-care experience, preparation for kindergarten, family activities, screen time, social-emotional habits of child, child height/weight, health assessment history, special need status, social support, demographics, household language, depression inventory	606
SFUSD administrative data	Every year between 2009-2022	Attendance, English learner status, special needs status, grade level, grades, standardized test scores, disciplinary actions, demographics	4,722 ¹⁰

⁹ State standardized tests are taken in 3rd, 5th, 6th, 7th, 8th, and 11th grades; Grades were not available for elementary school.

¹⁰ Data on all students who entered kindergarten in 2009 were provided so that Clarity could match student identification numbers with the KOF and PIF data sets. Only matched data for students in the Kindergarten Readiness Cohort were used for the substantive analyses in this report (N=729). Data from students not in the Kindergarten Readiness Cohort were used only to assess whether the sample was representative and to better understand those who transferred out of the district over time.

VARIABLES

For clarity and ease of discussion and interpretation of findings, we define three types of variables here: outcomes, predictors, and control variables.

Outcome Variables

To explore connections between early school readiness, family dimensions and later outcomes, this report references five types of outcome variables, including:

- Standardized test scores
- Grade point averages
- School absences
- School suspensions
- On-time graduation

Each of these is described in greater detail for the kindergarten readiness cohort sample below.

Standardized Test Scores

The California Standards Tests (CSTs) — part of the Standardized Testing and Reporting (STAR) program — were administered every spring to California public school students until Spring 2013. The CSTs were criterion-referenced tests that assessed the California content standards in English-Language Arts (ELA), mathematics, science, and history-social science. SFUSD provided CST scores in ELA and Math for our Kindergarten Readiness Cohort from their third-grade year.

The STAR system was replaced in January 2014 by the California Assessment of Student Performance and Progress (CAASPP) System. Students in grades 3 and 5 through 8 took Smarter Balanced Summative Assessments in ELA and in Math. These assessments include a computer adaptive test and a performance task based on the Common Core State Standards. SFUSD provided Smarter Balanced Assessment Consortium (SBAC) scores for ELA and Math for Kindergarten Readiness Cohort students in grades 5, 6, 7 and 8.¹¹

Types of Variables

Outcome Variables – What student outcomes are we interested in?

- Standardized test scores
- Grade point averages
- School absences
- Suspensions
- On-time graduation

Predictor Variables – Why might students experience certain outcomes in school? What *predicts* outcomes?

- School readiness
- Family engagement

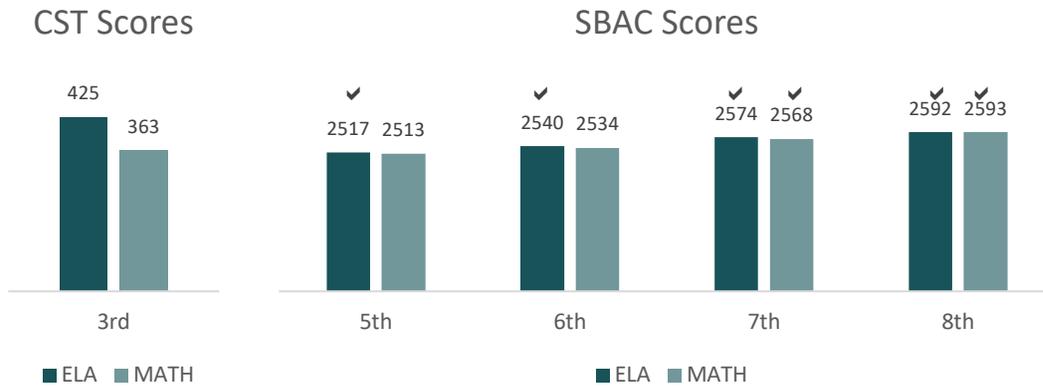
Control Variables – What other influences should be held constant so that we can see the impact of our predictor variables more clearly?

- Sociodemographic factors
- School of attendance

¹¹ Note that standardized tests are typically administered in grade 11 as well, however, they were not administered to this cohort of 11th graders due to the COVID-19 pandemic.

The figure below shows average standardized test scores for both English Language Arts (ELA) and Math at the available grade levels.

Figure 3. **Average Standardized Scores in 3rd, 5th, 6th, 7th, and 8th Grades**



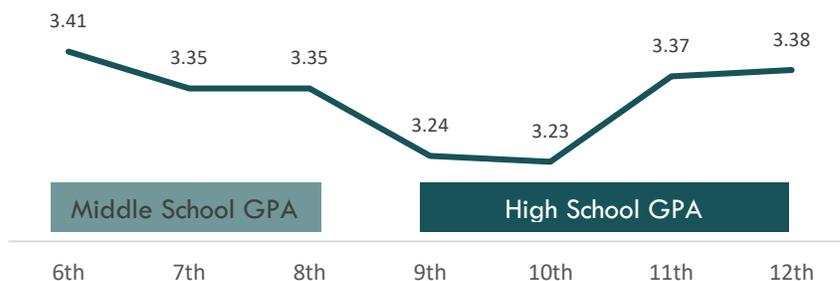
N=451-583. For SBAC Scores, check marks signify that average scores for that year exceeded the minimum "Achievement Level Scale Score Range for Standard Met," according to the California Department of Education. Because the CDE no longer administers the STAR program, criterion levels were not available for the 3rd grade scores.

Grade Point Average (GPA)

The figure below shows average GPAs from 6th through 12th grades for our Kindergarten Readiness Cohort. In the body of this report, Middle School GPA refers to the average GPA in 6th through 8th grade; High School GPA refers to the average GPA in 9th through 12th grade. We should note that due to the COVID-19 pandemic lockdown restrictions across schools in the district, most schools used Pass/Non-Pass instead of GPA during the spring semester in 2020, and very few GPAs were available during this time.

Average GPA was lower in the 2018-19 and 2019-20 academic years when the students were in 9th or 10th grades.

Figure 4. **Average GPA by Grade**



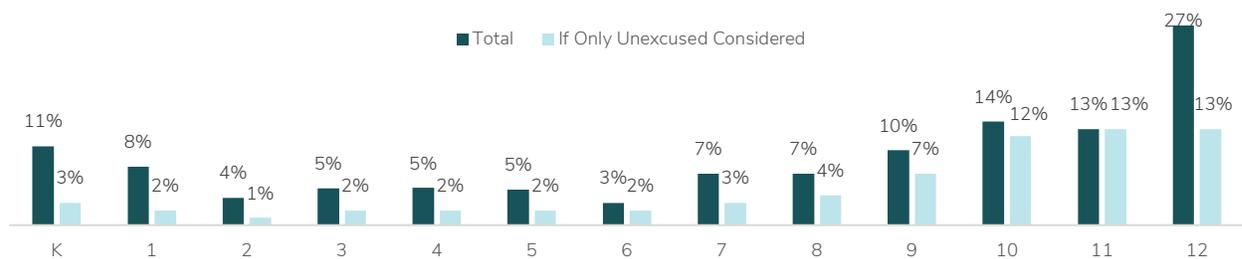
N=394-478

Absences

Number of school days, excused absences, and unexcused absences were recorded for the Kindergarten Readiness Cohort students while they were in SFUSD. Students were designated as “chronically absent” each year if they missed 10% or more possible school days (either excused or unexcused). Typically, a chronically absent student missed 18 or more days out of the 180-school-day year. About 32% of the students in the sample were chronically absent at least one year. The figure below shows the percentages of chronic absenteeism by grade when both unexcused and excused absences were considered and when only unexcused absences were considered.

More students were chronically absent in elementary school and again in high school than in middle grades.

Figure 5. Percent of Chronic Absenteeism by Grade

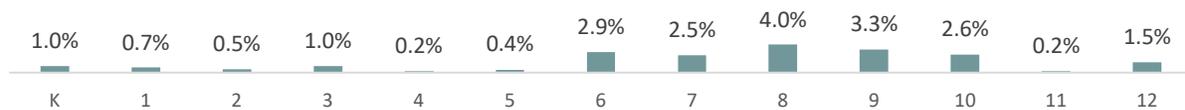


N=391-728. The lighter shaded bars indicate the percentage of chronic absenteeism only when unexcused absences are considered. The high rate of excused absences in 12th grade likely represents Covid-19 guidelines during the 2021-2022 year.

Suspensions

No students in the Kindergarten Readiness Cohort were expelled from SFUSD over the 13 years of the study. Therefore, only school suspensions were considered for analysis. In the sample, **about 8% of the students were suspended at least once**. In elementary school, 2% were suspended, while 7% were suspended in middle school and in high school. The figure below shows the percent of students suspended in each grade.

Figure 6. Percent of Suspended Students by Grade



N=392-729.

90 percent of students in the K-Readiness Cohort successfully graduated on time.

On-Time Graduation

The Kindergarten Readiness Cohort matriculated into kindergarten in 2009. If students were promoted into the subsequent grade each year, Spring 2022 would represent an on-time graduation. Ninety percent of students in the Kindergarten Readiness Cohort successfully graduated on time.¹² The remaining 10 percent of students were either in 9th, 10th or 11th grade in Spring 2022 (having repeated earlier grades) or failed to pass 12th grade in 2022.

Predictors

In this section we outline the different predictor variables we explored to see which had strong connections to the outcomes detailed above.

School Readiness

When students entered kindergarten in 2009, their teachers assessed their school readiness on 24 items on the Kindergarten Observation Form (KOF). These items measure four foundational readiness “building blocks”: *Self-Care & Motor Skills*, *Self-Regulation*, *Social Expression*, and *Kindergarten Academics*. Three “Readiness Groups” were created based on the building block scores: *Fully Ready Students*, *Partially Ready Students*, and *Not Ready Students* (See Appendix F: Readiness Building Blocks and Readiness Groups for details). An overall readiness score and building block scores are calculated to examine variation in readiness. In our data set, the correlations between the building blocks were high (0.62-0.84). In particular, the correlation between *Self-Regulation* and *Social Expression* was very high (0.84); therefore, these two building blocks were combined for further analyses.

Family Engagement

In the Parent Information Form (PIF), completed when their child entered kindergarten, the parents or caregivers of the students were asked to respond to questions about everyday family activities, their child’s socioemotional development, screen time, use of local resources,

What is a “Predictor”?

Predictors are variables that might have an impact on certain outcomes of interest. If a dimension is a strong “predictor,” it helps forecast an outcome.

For example, school readiness might be a strong predictor of the amount of progress a student makes in kindergarten. A student ready for school in the fall may make greater progress during kindergarten than a student who is not ready for the rigors of school.

¹² Graduation data were only available for students who remained in SFUSD throughout the years. Students who dropped out or transferred out were not included in this outcome variable.

parenting supports received, their perceived social support, mental health, etc. Associations between these variables and the outcomes (GPA, test scores, etc.) were explored.

Control Variables

Of course, sometimes students differ in key outcomes like GPA or graduation due not to their school readiness or early education experience, but due to other factors. In fact, children from different sociodemographic backgrounds such as race/ethnicity or gender, special education status, and household income did differ widely on some of the outcomes listed above.¹³ So that we can see associations between school readiness and key outcomes, it is important to “control for” sociodemographic differences. In the analyses that follow, two classes of variables – Sociodemographic Variables and Schools – are entered into the models as controls.

Sociodemographic Variables

In this study, students’ gender¹⁴, race/ethnicity, special education status, and English Learner status¹⁵ (collected in SFUSD administrative data) and early childhood education experiences, family income, and single parenting status (reported by parents or caregivers on the PIF in 2009) were used as control variables. Due to the difficulties in analyzing groups with very few members, five groups were created for race/ethnicity including African American/Black (i.e., African American), Asian/Asian American (i.e., Asian), Hispanic/Latino, White, and Other Races (including Alaskan Native/American Indian, Pacific Islander, and multiracial students).

What is a “Control Variable”?

A control variable may influence outcomes in a study, but it is not a variable of interest. Control variables are usually held constant in statistical analyses so that connections between predictors of interest and the outcomes are free of their influence.

For example, household income may be connected to GPA – families with more resources may be able to hire tutors for their children, resulting in higher GPAs for children with higher family incomes. In this study, variables like household income were “controlled for” so that the effects of predictor variables on the outcomes of interest could be examined net of other influences.

¹³ See Appendix E: Associations between Sociodemographic Variables and Academic Outcomes for more.

¹⁴ Because the number of students identifying as transgender was fewer than 10, separate analysis was not conducted for this group to maintain anonymity.

¹⁵ Students entering K-12 schools in California are classified as English Learners (EL) if they speak a language other than English at home and score below a proficiency threshold on the California English Language Development Test (CELDT).

Schools

The literature shows a consistent association between school quality and student outcomes. For example, research has shown that the quality of teachers, per-pupil spending, resource equity, and school climate/culture all contribute to school quality and are associated with improved academic achievement, educational attainment, and long-term success for students.¹⁶

As such, we anticipate that the specific schools that students attended over the course of our 13-year window had some impact on their academic outcomes in this data set, as well. To control for variation in school characteristics, schools were included in analyses as a random-effect factor when possible.

ANALYTIC STRATEGY

Multiple analytic approaches were used to process these longitudinal data.

- Simple descriptive statistics and percentages provide illustrations of groups of students.
- Analyses of variance and chi-square tests were used to examine differences between groups.
- Correlations were used to examine the strength of connections between variables.
- And more advanced modeling techniques were also used to explore the complex relationships among predictors and outcomes, including:
 - Mixed-Effects Multi-Level Modeling (MLM)
 - Generalized Linear Modeling (GLM)
 - Structural Equation Modeling (SEM)

Appendix B: An Overview of Analytic Strategies provides additional information about the many statistical approaches used to analyze these longitudinal data.

General Approach

To see how school readiness is connected to later academic outcomes, a set of models was created to test the strength of influence of school readiness on standardized test scores in ELA

¹⁶ Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014). Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *American Economic Review*, 104(9), 2633-2679.

Jackson, C. K., Johnson, R. C., & Persico, C. (2016). The effects of school spending on educational and economic outcomes: Evidence from school finance reforms. *The Quarterly Journal of Economics*, 131(1), 157-218.

Reardon, S. F., Robinson-Cimpian, J. P., & Weathers, E. S. (2018). Patterns and trends in racial/ethnic and socioeconomic academic achievement gaps. *Annual Review of Sociology*, 44, 381-404

and Math over time, as well as the connection between school readiness at kindergarten and middle school and high school GPA.

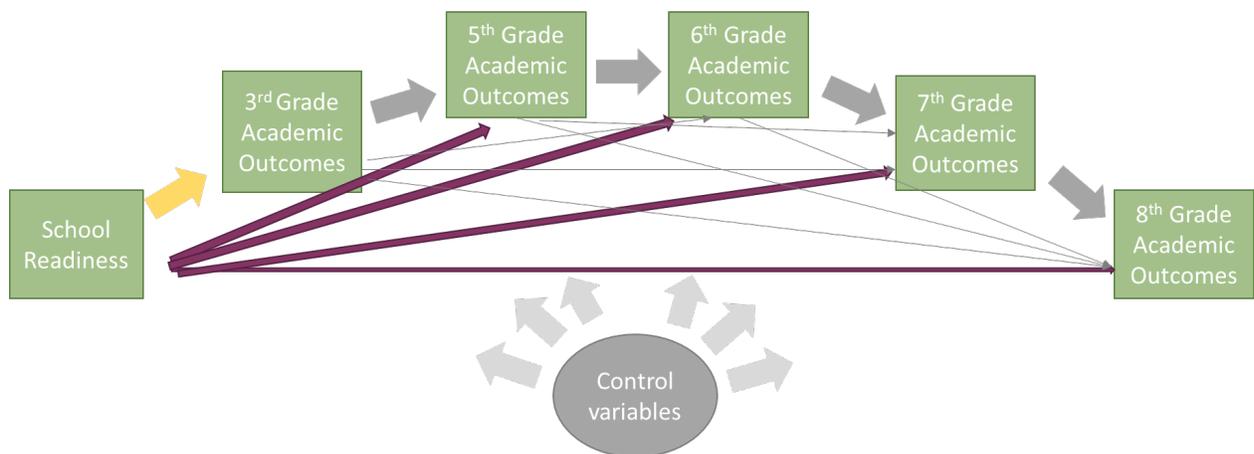
First, we explored whether children’s readiness in kindergarten was related to their performance on the earliest set of standardized test scores available – 3rd grade CST scores in ELA and Math. This connection is represented by the yellow arrow in the model below.

Because children’s academic journeys are cumulative — learning from earlier years builds to learning and understanding in later years — we would expect to see connections between standardized test scores across the years. A student’s performance on the 5th grade SBAC test in English Language Arts should be related to their performance on that same test in 6th grade, for example, and their 6th grade score should be related to their score in 7th grade, and so on. These connections are represented by the dark gray arrows in the model below.

The model we tested also allowed for possible connections between school readiness and later academic outcomes. These potential connections are represented by the magenta arrows in the model below.

Finally, in all the models tested, the set of control variables (race/ethnicity, gender, EL, special education, income, single parenting, and preschool experiences) were included so that associations between school readiness and academic outcomes observed are net of sociodemographic influences.

Figure 7. **A Conceptual Model to Test the Associations between School Readiness and Academic Outcomes**





Results

OVERVIEW OF THE 2009 COHORT

San Francisco Unified School District schools welcomed 4,722 new students into their kindergarten classrooms in 2009. The children in the 2009 Kindergarten Readiness sample closely matched the district population in terms of gender, age, and race. San Francisco is one of the most ethnically diverse areas of the country; the distribution of students in the district in 2009 was such that in a classroom of 20 children, about five children would be Chinese, about 5 would be Hispanic/Latino, 3-4 would be Caucasian, two would be African American, and the remainder would be Filipino, Southeast Asian, Pacific Islander, Middle Eastern/Arabic, Japanese or other Asian, and/or American Indian/Alaskan.

Based on findings from the 2009 readiness study, the cohort is characterized by the following:

- The basic physical needs of almost all children seem to have been met – children appeared healthy to teachers, the majority had access to pediatricians, and most had basic health screenings completed.
- According to teacher and parent reports, 8% of the children assessed in 2009 had a special needs/IEP designation upon kindergarten entry.
- Nearly half of children speak English most frequently at home. Cantonese and Spanish were spoken most often by 18% and 20% of students, respectively. Teachers estimated that the primary language development of 78% of students was on track or advanced.
- 83% of children had attended a preschool during the previous year, and preschool experience was associated with enhanced readiness.
- Over half of families reported that they read with their children for more than 5 minutes a day, five (or more) times a week. Families of preschool graduates read more frequently with their children than did families of other children.
- On average, children spent about 2.5 hours a day in non-educational “screen time”, watching TV or videos, or playing video games. While this is below the national average, “screen time” is negatively associated with readiness in *Kindergarten Academics*.

- Most parents felt confident about managing parenting demands and accessing social support, although significant demographic differences emerged: Hispanic/Latino parents and households earning less than \$32,000 a year report the lowest levels of coping.
- 19% of parents met criteria for serious mental illness (as measured by the K-6 scale¹⁷) and parental depression was associated with lower school readiness in children.

As assessed on the KOF across the four “Building Blocks” of readiness: *Self-Care & Motor Skills, Self-Regulation, Social Expression, and Kindergarten Academics*, over half of children in SFUSD (57%) entered kindergarten in 2009 as *Proficient Across Blocks* – near-proficient across all readiness skills. Eleven percent demonstrated readiness needs across blocks.

Seventy percent of kindergartners in 2009 met or exceeded teacher expectations for school readiness overall, though less than half (47%) met or exceeded the longitudinal standard that was calculated as the average readiness score of the 2009 kindergarten cohort members who went on to perform at or above proficiency in both math and English language arts as measured by standardized test scores.¹⁸

Children were most ready in *Kindergarten Academics*, with nearly 4 out of 5 students meeting or exceeding teachers’ expectations. Readiness scores were lowest for *Self-Regulation*, with 58 percent of children falling significantly below teachers’ desired level of proficiency.

Families were important, too. Children whose families scored higher on an index of risk factors (including teen motherhood, single parenthood, having no supports/services, having lost their job in the past year, and having moved 2 or more times since the child was born) demonstrated lower levels of school readiness than their peers from families with fewer risk factors.

However, net of risk factors, children whose families made greater use of local resources (using the public library, zoo, museums, parks, family resource centers, or *Raising a Reader*) scored higher in overall readiness than other children. Moreover, parents who reported higher levels of social support and coping also had kindergartners who tended to be more ready than their peers. These families felt more confident in their ability to help their child grow and develop; they reported a strong support system of family, friends, and community; they could more easily find someone to talk to when they needed advice or help; and they reported coping well with the day-to-day demands of parenting.

In sum, data show that over half of children entering SFUSD kindergarten classrooms in 2009 were well-rounded and well-prepared for kindergarten. However, about 43 percent of children

¹⁷ The Kessler Psychological Distress Scale (K6), designed by Ronald C. Kessler is a 6-item self-report measure of nonspecific psychological distress intended to be used as a quick tool to assess risk for serious mental illness in the general population.

¹⁸ See “Portrait of School Readiness 2009-10: San Francisco Unified School District for more on the longitudinal study standard and readiness in 2009. See also, findings from the “School Readiness in San Francisco, 2015-16” school readiness study in SFUSD using this benchmark that found that overall, 62% of students met or exceeded the longitudinal study standard.

need extra supports in their readiness skills. This longitudinal study will help shed light on how strengths and deficits in kindergarten play out over the K-12 trajectory.

HOW IS SCHOOL READINESS ASSOCIATED WITH STANDARDIZED TEST SCORES?

School Readiness and English Language Arts

The figure on the following page illustrates results of structural equation modeling (SEM) that explores connections between school readiness and student performance on English Language Arts standardized tests. The model shows that:

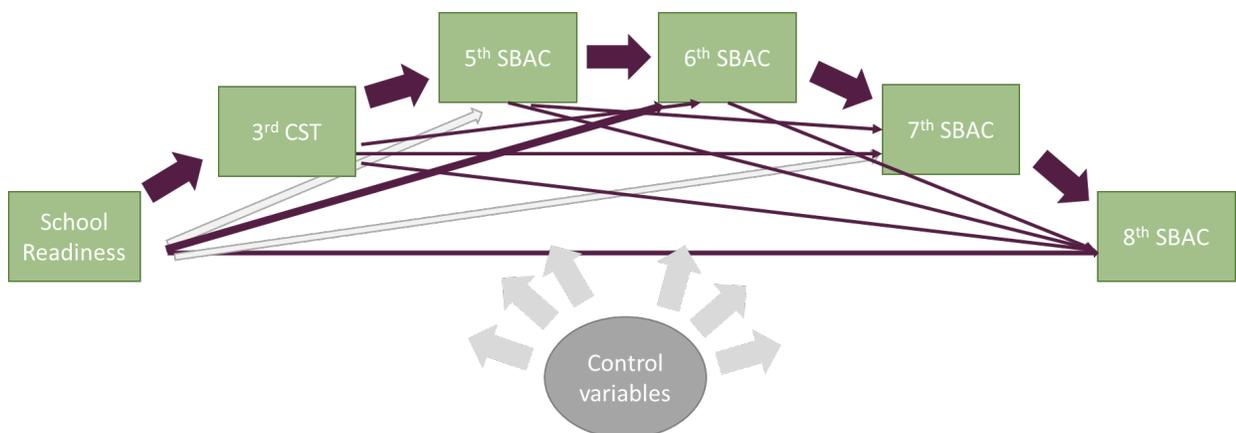
- **School readiness is significantly associated with 3rd grade ELA scores.** Children who were more ready for kindergarten in 2009 also tended to score higher on their ELA tests in 3rd grade.
- **Performance on tests in earlier grades predicts performance in later grades.** All earlier standardized test scores accounted for later scores, with associations between adjoining scores the strongest. Students with higher school readiness scores had higher 3rd grade ELA scores, and those who had higher 3rd grade ELA scores also had higher 5th grade ELA scores, and so on.
- **School readiness exerts direct effects on 6th grade ELA scores...** even after earlier scores were accounted for. However, direct effects of school readiness on the 5th grade and 7th grade ELA scores were not significant.

Takeaways

- Children who are more ready for kindergarten tend to score better on their 3rd grade ELA tests.
- School readiness remains predictive of 6th grade and 8th grade ELA scores, even after earlier scores and all control variables were accounted for.

Appendix I: Structural Equation Modeling (SEM) Results provides more analytic detail about this model.

Figure 8. Results of SEM for ELA



Note. N=301. Dark purple lines indicate significant associations between the outcomes, light gray lines indicate non-significant associations. Control variables include race/ethnicity, gender, EL status, special education, income, single parenting, and preschool experiences, some of which do have significant associations to outcomes. The direct association between school readiness and 8th grade ELA is negative, likely due to suppression and/or overfitting of the model. See Appendices for more detailed results.

Examining Readiness Building Blocks and English Language Arts

The model above shows that overall school readiness is associated with performance on ELA tests years later. The following set of analyses sought to determine whether a specific component of readiness — *Self-Care & Motor Skills*, *Social Emotional Skills (Self-Regulation & Social Expression)*, or *Kindergarten Academics* — was more closely connected to ELA performance, using Mixed-Effects Multi-Level Model (MLM) analyses. Again, we controlled for students’ sociodemographic factors.¹⁹

Each readiness building block was entered into the model individually (see the figure below). *Self-Regulation & Social Expression* and *Kindergarten Academics* were significant predictors for standardized ELA test scores across grades, even after controlling for demographics, socioeconomic status, schools, and preschool experience. *Self-Care & Motor Skills* was also associated with ELA test scores for grades 3, 5, 6, and 7, but not in 8th grade. (See Appendix H: Detailed Results of Mixed-Effects Multi-Level Models for detailed results).

Table 2. Significant Variables for the Standardized Scores of ELA

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
When Each Building Block was Entered Individually:					
Self-Care & Motor Skills	●●●	●●●	●●	●	
Self-Regulation & Social Expression	●●●	●●●	●●●	●●●	●
K-Academics	●●●	●●●	●●●	●●●	●●●
When All Building Blocks were Entered Together:					
Self-Care & Motor Skills					
Self-Regulation & Social Expression					
K-Academics	●●●	●●●	●●	●	●
Ns	407	386	334	334	324

Note. N=324-407. The following variables were entered as controls: gender, race/ethnicity, English Learner status, special education status, income, single parenthood, and preschool experience. The number of circles indicate the significance levels. ●p<.05, ●●p<.01, ●●●p<.001. The empty cells indicate that the associations were not significant.

To examine whether one building block drove these connections when all blocks were entered together, the models were re-run. When all building blocks were entered together, **only Kindergarten Academics predicted the standardized scores in all five grades**. These results

¹⁹ In these analyses, previous year scores were not entered into the model so as to avoid suppression effects, which can sometimes occur when predictors in a model are correlated.

indicate that although all building blocks were significant predictors for ELA scores, Kindergarten Academics was the strongest predictor among them. With each one-point increase in Kindergarten Academics (measured on a 4-point scale), standardized test scores increased 28 to 37 points, depending on the grade.

Do Less Ready Children Catch Up Over Time in ELA?

The models described thus far suggest that there are strong connections between school readiness and later academic outcomes in ELA. To investigate whether children who were less ready in kindergarten were able to catch up over time, we formed three Readiness Groups:²⁰

1. Children who received high scores on all building blocks were considered *Fully Ready* for kindergarten.
2. Those who received low scores on all building blocks were deemed *Not Ready*.
3. Those who presented a mixed pattern of readiness were *Partially Ready*.

Takeaways

Students who were more ready in kindergarten tended to maintain their higher academic standings throughout the years.

Students who were *Not Ready* in kindergarten tended to maintain the lowest scores and have the least score growth among their peers.

Because ELA standardized test scores tend to increase continuously over time, a Latent Growth Curve Model (LGCM) was used to fit the trajectories of ELA test scores based on the intercept and linear slope for each group (*Fully Ready*, *Partially Ready*, and *Not Ready*).

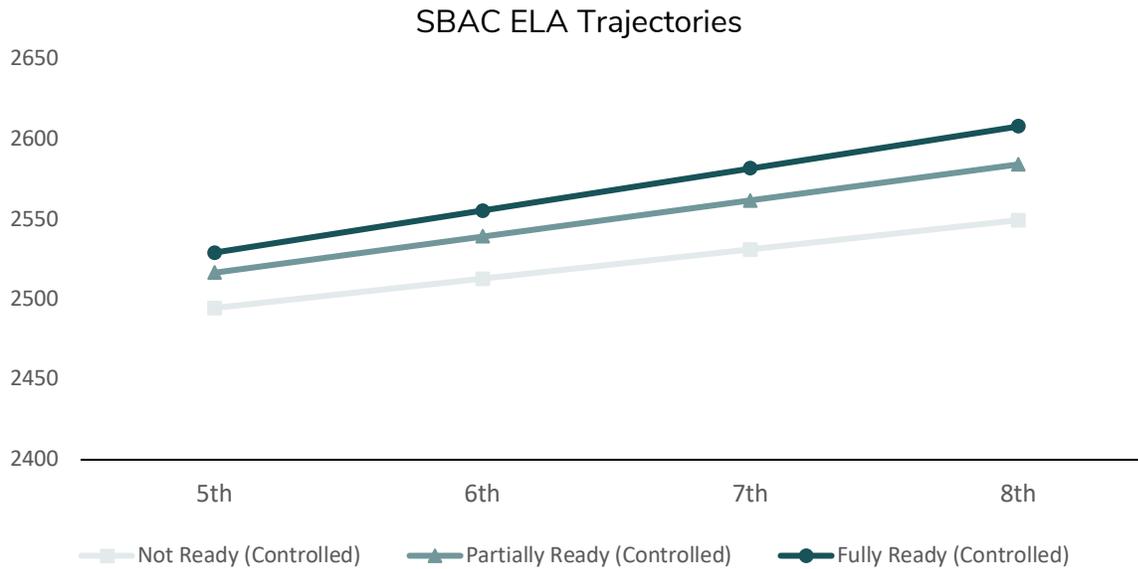
The following figure displays the average ELA score trajectories from 5th grade to 8th grade. The tests revealed significant differences in the intercepts and slopes between the readiness groups even after controlling for sociodemographic factors.²¹

Fully Ready students tended to maintain highest scores throughout the years (34 points higher than the average ELA score of *Not Ready* students in 5th grade after controlling for sociodemographic factors) and **increase most over the years** (about 26 points every year). In comparison, **Not Ready students tended to maintain lowest scores and increase least** (about 18 points every year). These results consolidate the findings from the SEM results that **students who were more ready in kindergarten tended to maintain their higher academic standings throughout the years.**

²⁰ See Appendix F: Readiness Building Blocks and Readiness Groups for more detail on how these readiness groups were determined.

²¹ See Appendix J: Latent Growth Curve Model (LGCM) Results for details.

Figure 9. **SBAC ELA Scores Trajectories by Readiness Group**



Note. N=272-289. The following variables were entered as controls: English Learner status and special education status (measured throughout the years from 2015 to 2018), gender, race/ethnicity, family income, single parenting, and ECE experiences (measured in 2009).

School Readiness & Mathematics

The figure below illustrates results of structural equation modeling that explores associations between school readiness and student performance on standardized math tests. The model shows that:

- As with ELA scores, overall school readiness is significantly associated with 3rd grade Math scores.** Children who were more ready for kindergarten in 2009 according to their teachers also tended to score higher on standardized math tests in 3rd grade.
- As with ELA, performance on math tests in earlier grades predicts performance in later grades.** All earlier standardized scores accounted for later standardized scores, with associations between adjoining scores the strongest. Students with higher kindergarten readiness scores had higher 3rd grade Math test scores, and those who had higher 3rd grade Math scores also had higher 5th grade Math scores, and so on.
- School readiness remains associated with 5th, 6th, and 7th grade Math scores ...** even after earlier scores were accounted for. While students who were more ready for

Takeaways

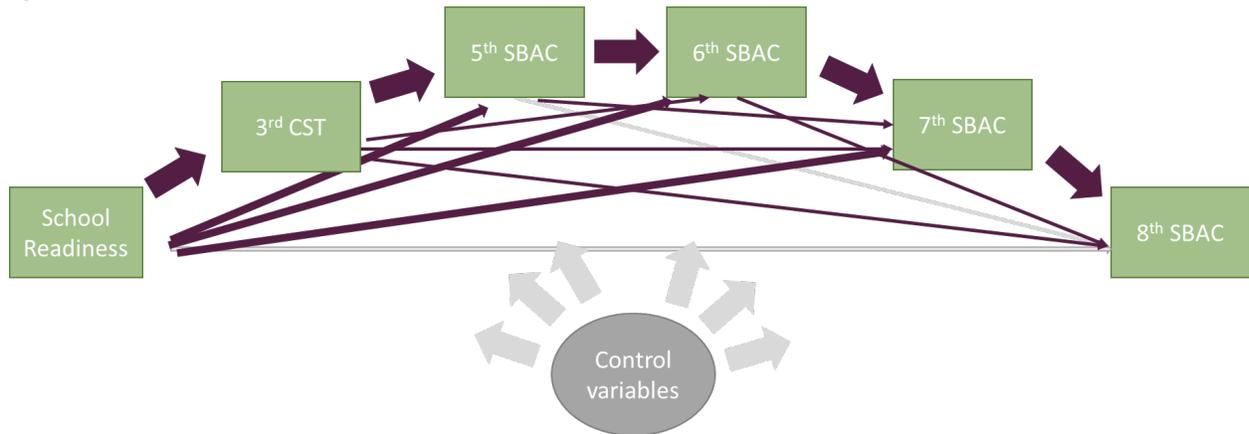
Children who are more ready for kindergarten tend to score better on their 3rd grade Math tests.

School readiness remains tied to 5th, 6th, and 7th grade Math scores, even after earlier Math scores and all control variables were accounted for.

kindergarten tended to continue having higher math scores in later grades through having higher math scores in earlier grades, there were still elements of school readiness that additionally explained performance on math tests through the years.

(See Appendix I: Structural Equation Modeling (SEM) Results for details).

Figure 10. **School Readiness Is Connected to Later Math Test Scores**



Note. N=301. Dark purple lines indicate significant associations between the outcomes and light gray lines indicate non-significant associations. Control variables include race/ethnicity, gender, EL status, special education, income, single parenting, and preschool experiences. See Appendices for detailed results.

Examining Readiness Building Blocks and Mathematics

The model above shows that school readiness is associated with performance on math tests years later. The following set of analyses sought to determine whether a specific component of readiness — *Self-Care & Motor Skills*, *Self-Regulation & Social Expression*, or *Kindergarten Academics* — had greater impact on later math performance, using MLM analyses.²²

Takeaways

Students who were more academically ready for kindergarten performed better in standardized math tests through 7th grade.

After controlling for students' sociodemographic factors, all building blocks were significant predictors of standardized math scores measured in 3rd, 5th, 6th, 7th, and 8th grades (see Appendix H: Detailed Results of Mixed-Effects Multi-Level Models for details). To see whether one building block was stronger than the others, all three building blocks were entered into the model together, and only *Kindergarten Academics* predicted math scores in 3rd, 5th, 6th, and 7th grades. Students who were more academically ready for kindergarten achieved higher math scores through 7th grade. With each one-point increase in *Kindergarten Academics* (measured

²² In these analyses, previous year scores were not entered into the model so as to avoid suppression effects, which can sometimes occur when predictors in a model are correlated.

on a 4-point scale), standardized test scores increased about 38 to 43 points, depending on the grades.

Table 3. Significant Variables for the Standardized Scores of MATH

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
When Each Building Block was Entered Individually					
Self-Care & Motor Skills	●●●	●●●	●●●	●●	●●
Self-Regulation & Social Expression	●●●	●●●	●●●	●●●	●●●
K-Academics	●●●	●●●	●●●	●●●	●●●
When All Building Blocks were Entered Together					
Self-Care & Motor Skills					
Self-Regulation & Social Expression					
K-Academics	●●●	●●●	●●●	●●	
Ns	407	386	334	334	324

Note. The following variables were entered as controls: gender, race/ethnicity, English Learner status, special education status, income, single parenthood, and preschool experience. The number of circles indicate the significance levels. ●p<.05, ●●p<.01, ●●●p<.001. The empty cells indicate that the associations were not significant.

Trajectories of Fully/Partially/Not Ready Children in Math

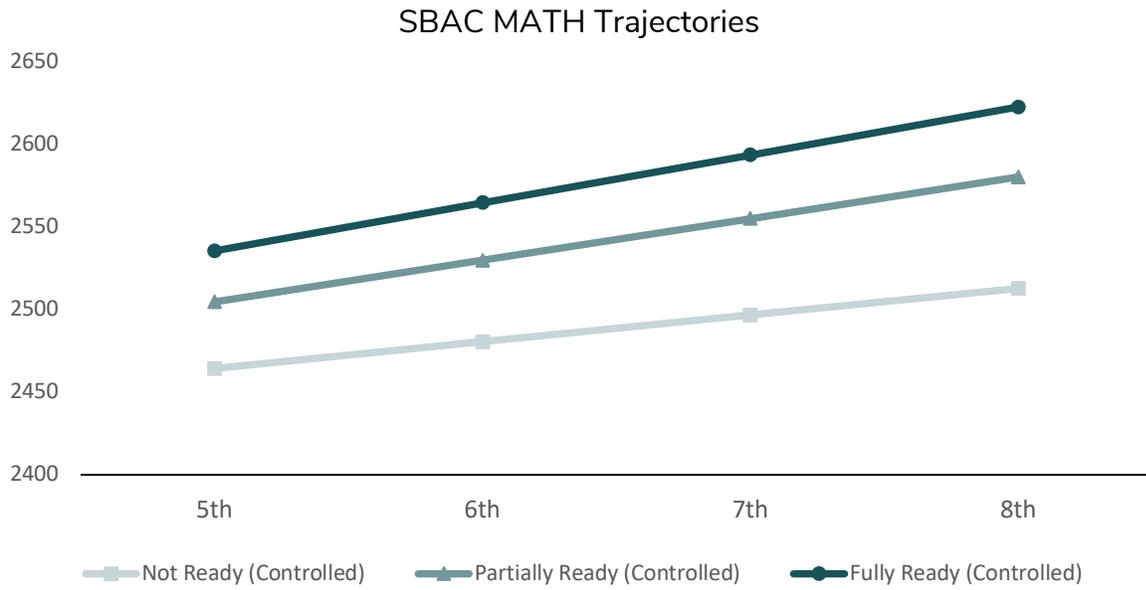
We also explored the trajectories of Fully, Partially, and Not Ready children in math. Again, LGCM was used to fit trajectories of math scores by readiness group, and differences in intercept and slope were tested. The figure below displays the average math score trajectories from 5th to 8th grade after

controlling for sociodemographic variables. The tests revealed significant differences both in the intercepts and slopes between the readiness groups (see Appendix J: Latent Growth Curve Model (LGCM) Results for details). This means that students who entered kindergarten **Fully Ready tended to maintain highest scores throughout the years and accelerated the most while Not Ready students maintained lowest scores and increased least.** The difference between the Fully Ready group and the Not Ready group was 72 points in 5th grade and 110 points in 8th grade (controlling for sociodemographic characteristics). These results imply that readiness groups determined by the scores in building blocks not only predicted the students' math scores in 5 years but also their progress over the next 4 years.

Takeaways

Fully Ready students maintained the highest math scores throughout the years and accelerated faster than Not Ready students.

Figure 11. SBAC MATH Scores Trajectories by Readiness Group



Note. N=272-289. The following variables were entered as controls: English Learner status and special education status (measured throughout the years from 2015 to 2018), gender, race/ethnicity, family income, single parenting, and ECE experiences (measured in 2009).

School Readiness and GPA

Next, associations between school readiness, middle school GPA, and high school GPA were examined using structural equation modeling. School readiness was significantly associated with middle school GPA, even after control variables were accounted for. Children who were more ready for kindergarten also tended to have higher middle school GPAs, whereas children who were less ready for kindergarten tended to have lower middle school GPAs.

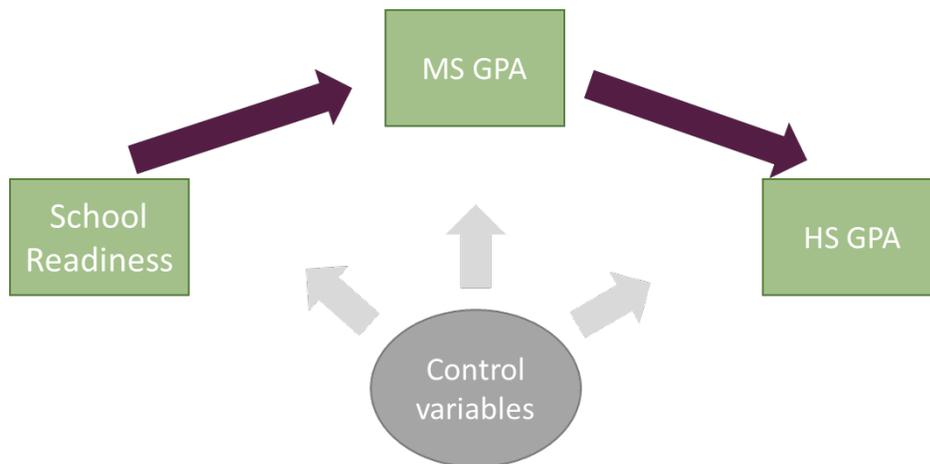
Takeaways

The more students were ready in the beginning of kindergarten, the higher their GPAs were throughout middle school and high school.

We did not find an independent relationship between school readiness and high school GPA.

Middle school GPA fully mediated the association between school readiness and high school GPA (see Appendix I: Structural Equation Modeling (SEM) Results for more detail).

Figure 12. Results of SEM for GPA



Note. N=291. Dark purple lines indicate significant associations between the outcomes. Control variables include race/ethnicity, gender, and income. Some control variables are significantly associated with outcomes. See Appendices for full results.

Readiness Building Blocks and GPA

Simple correlations suggested that the more students were ready in the beginning of kindergarten, the higher their GPAs were throughout middle school and high school (see [Appendix F](#)). Follow-up MLM analyses (see Appendix H: Detailed Results of Mixed-Effects Multi-Level Models for detailed results)

demonstrate that **overall school readiness was still a significant predictor for middle school GPA — but not high school GPA — after controlling for sociodemographic factors.**

Take Aways

Kindergarten Academics was a significant predictor for middle school GPA, whereas only *Self-Regulation & Social Expression* was a significant predictor for high school GPA.

Interestingly, the follow-up analyses of building blocks revealed that *Kindergarten Academics* was a significant predictor for middle school GPA, whereas only *Self-Regulation & Social Expression* was a significant predictor for high school GPA. In middle school, with each one-point increase in *Kindergarten Academics* measured on a 4-point scale, GPA increased by 0.17 points. In high school, with each one-point increase in *Self-Regulation & Social Expression*, GPA increased by 0.14 points. These results imply that **being academically ready was important for GPA in middle school, while self-regulation skills were more important for GPA in high school.**

Table 4. Significant Variables for the Standardized Scores of ELA

	Average GPA in Middle School (6 th -8 th grade) (n=346)	Average GPA in High School (9 th -12 th grade) (n=306)
When Each Building Block was Entered Individually		
Self-Care & Motor Skills	●●	
Self-Regulation & Social Expression	●●●	●
K-Academics	●●●	
When All Building Blocks were Entered Together		
Self-Care & Motor Skills		
Self-Regulation & Social Expression		●
K-Academics	●	
Ns	346	306

Note. The following variables were entered as controls: gender, race/ethnicity, English Learner status, special education status, income, single parenthood, and preschool experience. The number of circles indicate the significance levels. ●p<.05, ●●p<.01, ●●●p<.001. The empty cells indicate that the associations were not significant.

WHAT OTHER FACTORS ARE ASSOCIATED WITH LATER ACADEMIC OUTCOMES?

Using the LGCM framework, other factors measured in 2009 using the PIF and KOF were tested for associations with later academic outcomes. These factors included **family engagement, parental depression, parents' support and coping, children's socioemotional development, screen time, primary language, and primary language development**. Given that the associations of predictors with academic outcomes were similar across years, trajectories of SBAC ELA scores, SBAC Math scores, and GPA over the years were tested against these factors (Appendix L: LGCM Results of All Factors presents the final models for SBAC ELA scores, SBAC Math scores, and GPA). In the following sections, we discuss each factor.

Family Engagement in Pre-Kindergarten and Later Academic Outcomes

As their children were entering kindergarten, families provided information on levels of family engagement based on four questions:

- How did you prepare your child for kindergarten before the first day of school?
- In a typical week, how often do you or any other family member do the following things with your child?
- In the last year, what types of local family resources have you used?
- What kinds of parenting programs, services, or supports have you received?

25% High Engagement Families

One in four families in 2009 were High Engagement Families. These families had more social support, were more likely to use Family Resource Centers and take parent education classes. They also engaged in more activities like reading, singing, and doing K transition activities with their children at least 5 times a week.

Takeaways

Students whose families were highly engaged during childhood tended to have better academic outcomes through high school. High levels of family engagement were associated with higher ELA scores, higher MATH scores, and higher GPAs ... even when sociodemographic factors were controlled.

The answers to these four question sets were used in a cluster analysis of family engagement, which revealed three types of families: *High*, *Moderate*, and *Low Engagement Families*. One in four families (25%) fell into the **High Engagement** category; *High Engagement Families* tended to do a variety of activities (on average, 5-6 times a week per activity type) and used more community resources with their children, and more of these families reported getting social support and participating in parent education classes than the other groups (see detailed descriptions in Appendix K: Family Engagement **Error! Reference source not found.**).

Moderate Engagement Families took part in kindergarten preparation activities by attending a parent meeting or visiting the school with their child before kindergarten entry, but they tended to do activities with their children less often (3-5 times a week per activity type) than *High Engagement Families*. **Low Engagement Families** reported the lowest frequency of activities with their children (1-3 times a week per activity type). Over half of the parents participated in WIC support (55%) and only a quarter said they could get help from extended families (26%).

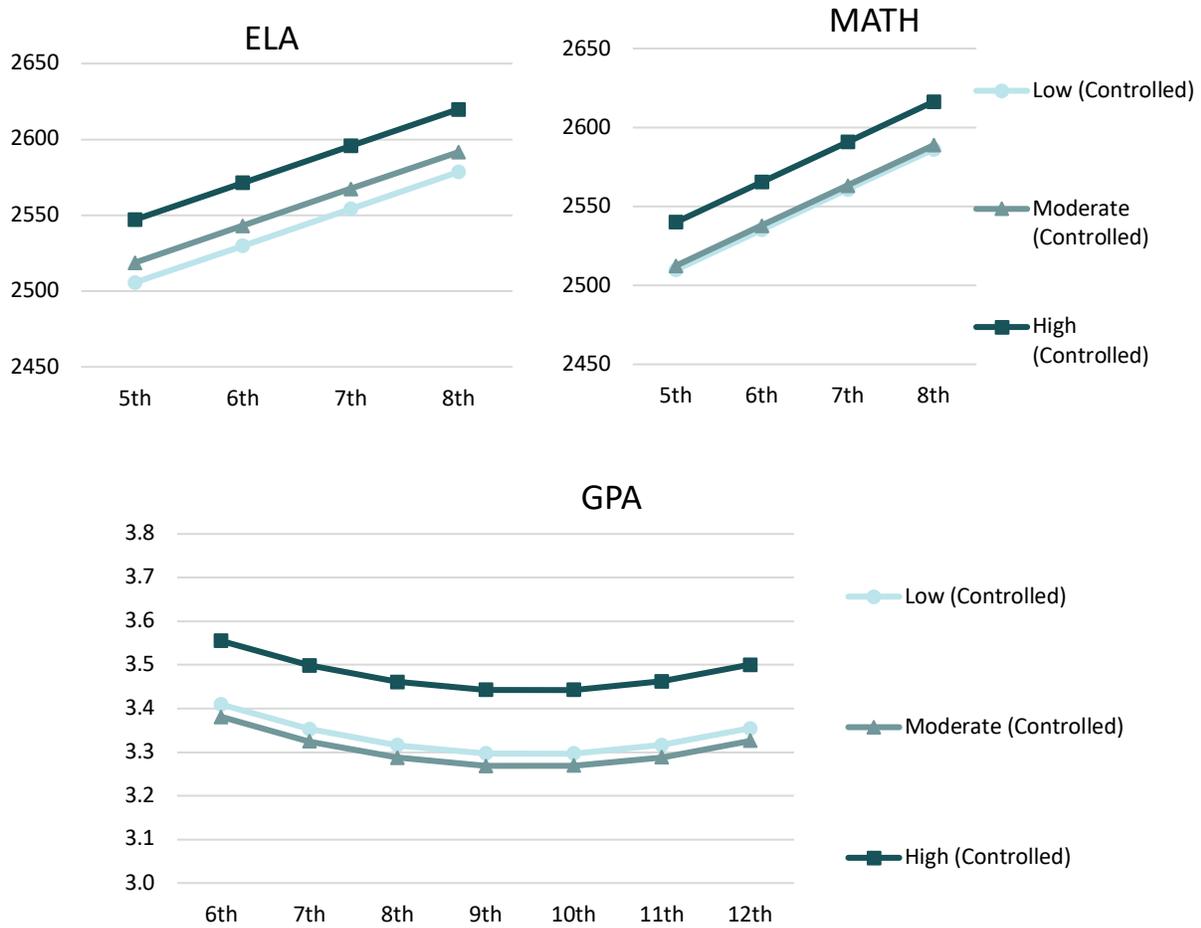
Family engagement was significantly associated with academic outcomes, even after controlling for sociodemographic factors.²³ **Children from High Engagement Families had higher ELA scores (5th through 8th grades), higher MATH scores (5th through 8th grades), and higher GPAs (6th through 12th grades).** High levels of family engagement were associated with a 41-point increase in students' ELA scores, a 30-point boost for Math scores, and 0.15-point boost in GPA (after controlling for other factors), compared to students from low-engagement families. However, there were no significant differences in slopes when all other factors were controlled. That is, these benefits confer an early advantage that does not appear to propel students onto steeper growth trajectories, as is illustrated in the figures on the following page. These results imply that **students whose families were highly engaged during childhood tended to have better academic outcomes through high school.**

These benefits seemed to only accrue when family engagement levels were high. Academic outcomes for children from *Moderate Engagement Families* were similar to outcomes of children from *Low Engagement Families*.

The following figures show the trajectories of student scores over time.

²³ See Appendix J: Latent Growth Curve Model (LGCM) Results for details about the overall model.

Figure 13. **SBAC ELA, SBAC MATH, and GPA Trajectories by Level of Family Engagement**



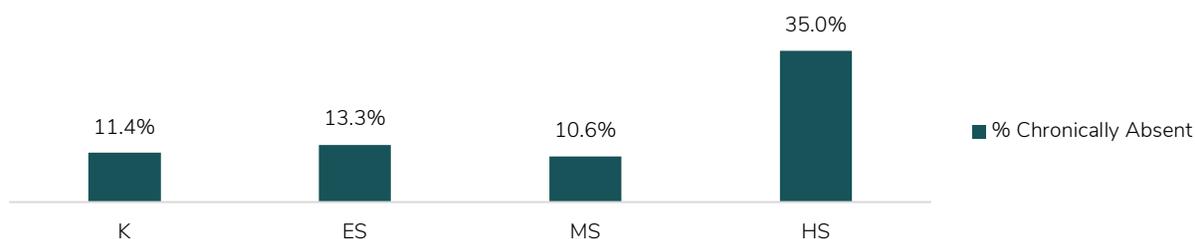
Note. N=272-289. Scores were estimated given the sociodemographic factors were considered equal and on the average.

WHAT FACTORS ARE ASSOCIATED WITH ATTENDANCE?

Chronic absenteeism refers to missing 10% or more excused or unexcused days of school in one school year. Chronic absenteeism is associated with poor academic outcomes and school engagement.²⁴ In kindergarten, 11.4% of the sample was chronically absent. In high school, 35% of students were chronically absent in at least one of the school years between 9th and 12th grade.

Chronic absenteeism also tends to repeat. Among those who were chronically absent at least one year in elementary school, over half had been chronically absent in kindergarten. Moreover, among students who were chronically absent in middle school, 7 in 10 had previously been chronically absent in kindergarten or elementary school.

Figure 14. **Percent Chronically Absent One or More School Years, by School Level**



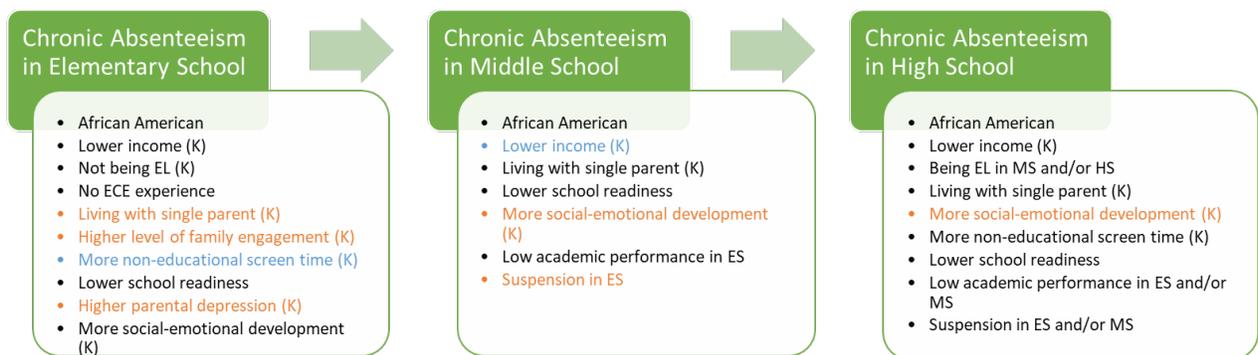
N=405-728.

The figure below summarizes factors directly associated with chronic absenteeism in elementary, middle, and high school. Chronic absenteeism was strongly associated with race/ethnicity, living with a single parent, school readiness, social-emotional development, academic performance, and suspension throughout the academic journey,

Other factors were also related to chronic absenteeism, depending on grade level. In elementary school, chronic absenteeism was associated with not being an English learner, high levels of family engagement, and higher parental depression. Further analyses revealed that family engagement levels were not associated with unexcused chronic absenteeism. Rather, families with higher levels of engagement had their children miss more than 10% of class time for excused reasons. Higher depression was also not linked to unexcused chronic absenteeism. Additionally, more non-educational screen time in kindergarten was linked to a higher incidence of unexcused chronic absenteeism in elementary and high school. Social-emotional development was only associated with unexcused chronic absenteeism in elementary school, but not in middle or high school.

²⁴ Gottfried, M. A. (2014). Chronic absenteeism and its effects on students' academic and socioemotional outcomes. *Journal of Education for Students Placed at Risk*, 19(2), 53-75.

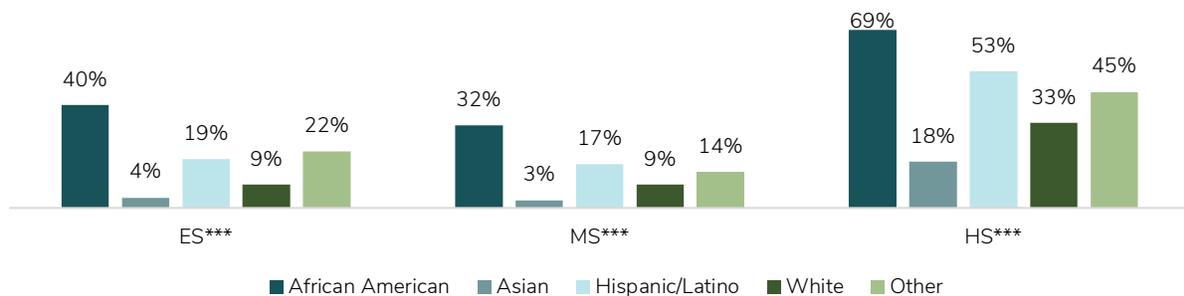
Figure 15. Factors Significantly Associated with Chronic Absenteeism



Note. N=310-686. Factors in black indicate significant associations with both chronic absenteeism and unexcused chronic absenteeism. Factors in orange indicate significant associations with chronic absenteeism only. Factors in blue indicate significant associations with unexcused chronic absenteeism only. (K) indicates measures that were taken at kindergarten entry.

The figure below shows the rate of chronic absenteeism by race/ethnicity and school level. African American students experience the highest percentages of chronic absenteeism while Asian students showed lowest percentage of chronic absenteeism throughout school levels.

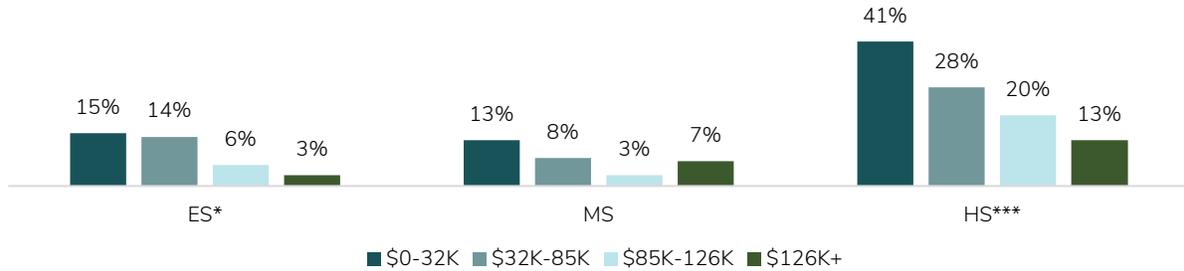
Figure 16. Percent Chronically Absent by Race/Ethnicity



N=429-657. ***p<.001.

There were significant differences in chronic absenteeism by family income in kindergarten. Family income measured at kindergarten was related to chronic absenteeism far down the educational road, with the differences becoming larger in high school.

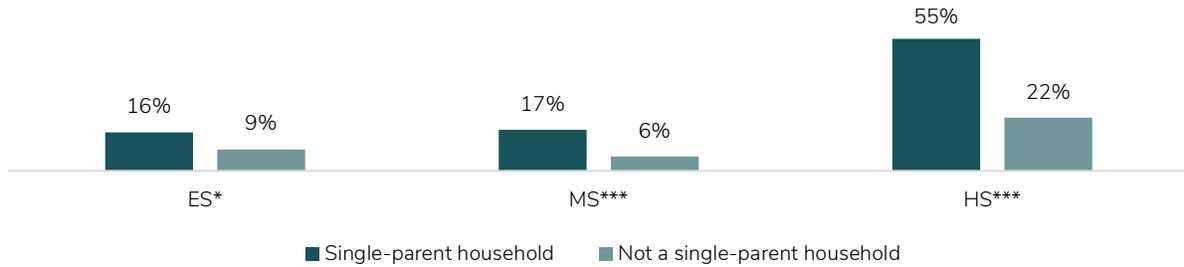
Figure 17. **Percent Chronically Absent by Family Income (K)**



N=334-518. *p<.05. ***p<.001.

Single parenthood in kindergarten also was related to students' attendance over time. More than half of those who lived with a single parent in kindergarten were chronically absent at least one year in high school.

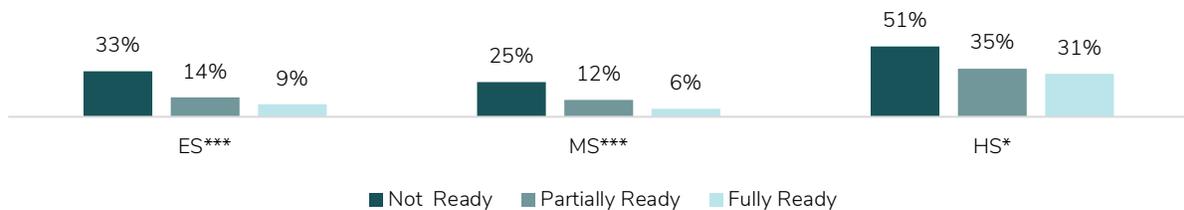
Figure 18. **Percent Chronically Absent by Single Parenthood (K)**



N=355-550. *p<.05. ***p<.001.

Chronic absenteeism was also associated with school readiness, as shown below. Students who were not ready for kindergarten were more likely than their peers to be chronically absent in elementary, middle, or high school.

Figure 19. **Percent Chronically Absent by School Readiness**



N=445-683. *p<.05. ***p<.001.

WHAT FACTORS ARE ASSOCIATED WITH SUSPENSIONS?

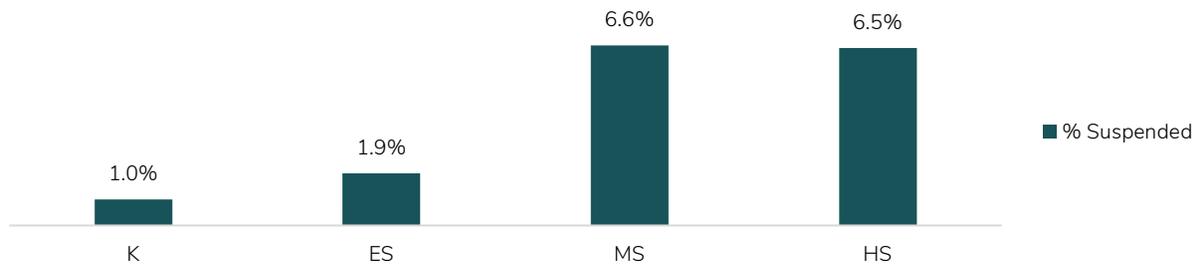
No students in the Kindergarten Readiness Cohort were expelled from school, and therefore, only suspensions were used for behavioral outcomes. The following figure shows the percentages of students suspended in kindergarten, elementary, middle, and high school.

Suspensions also tended to repeat. For example, in high school, 6.5% of students were suspended at least once. Almost half of those suspended in high school had previously been suspended in either middle school or elementary school.

Takeaways

Children who were not ready for kindergarten were much more likely than their peers to be suspended in elementary, middle, and high school. Low academic performance and chronic absenteeism were among other factors that predicted later suspensions.

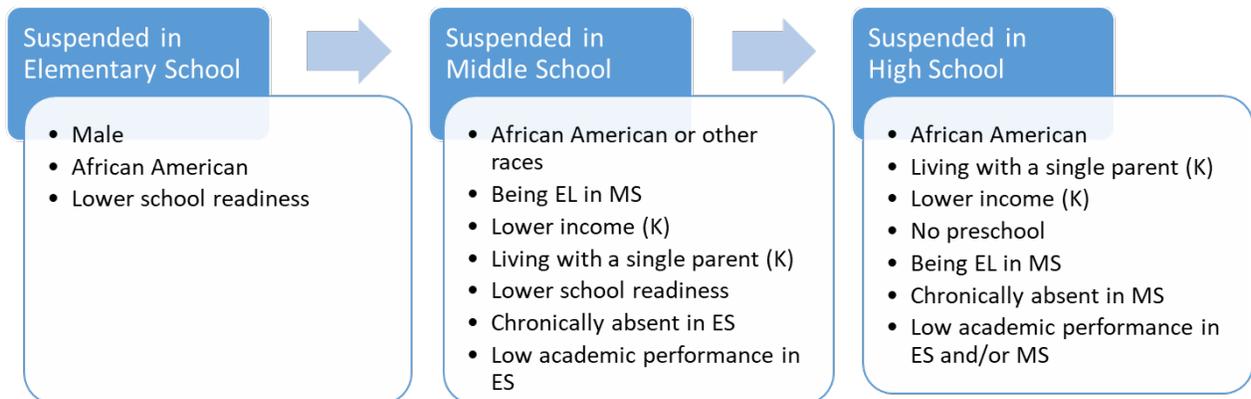
Figure 20. Percent Suspended, by School Level



N=446-729.

Multiple factors were associated with suspensions, as summarized in the figure below. Suspension in elementary school was associated with being male, African American, and having lower readiness scores. Like the results of chronic absenteeism, single parenting and low family income in kindergarten were also associated with later suspension in middle and high school. Low academic performance and chronic absenteeism also predicted later suspension.

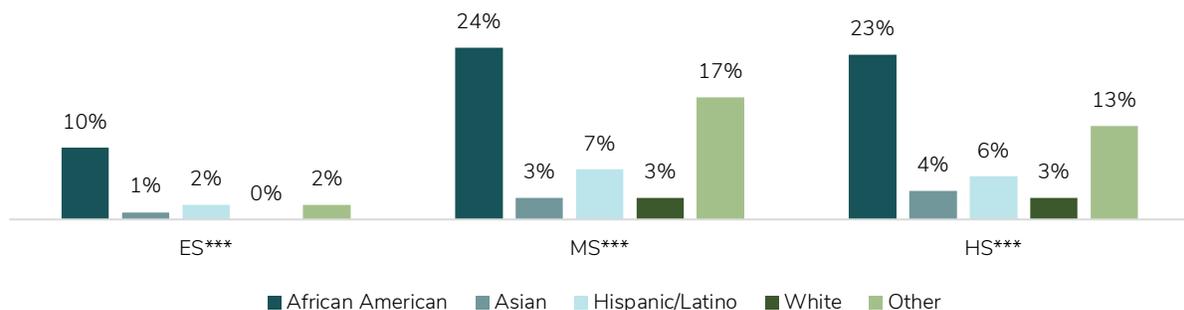
Figure 21. **Factors Significantly Associated with Suspension**



Note. N=355-729.

The figure below shows the percentage of students suspended in elementary, middle, and high school as a function of race/ethnicity. African American students experienced the highest suspension rates throughout the years, while Asian and White students had the lowest suspension rates.

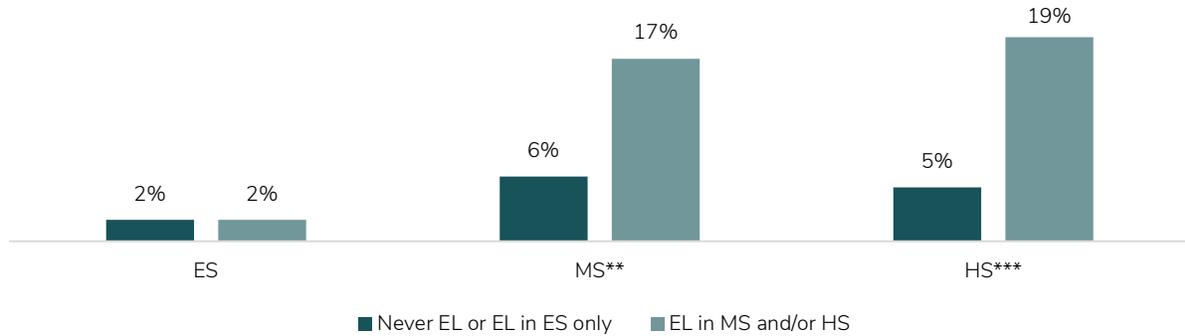
Figure 22. **Race/Ethnicity Comparisons for Suspension**



N=429-657

EL status was associated with suspensions as well. Those who still had an English Learner designation in middle school were more likely to be suspended in middle and high school.

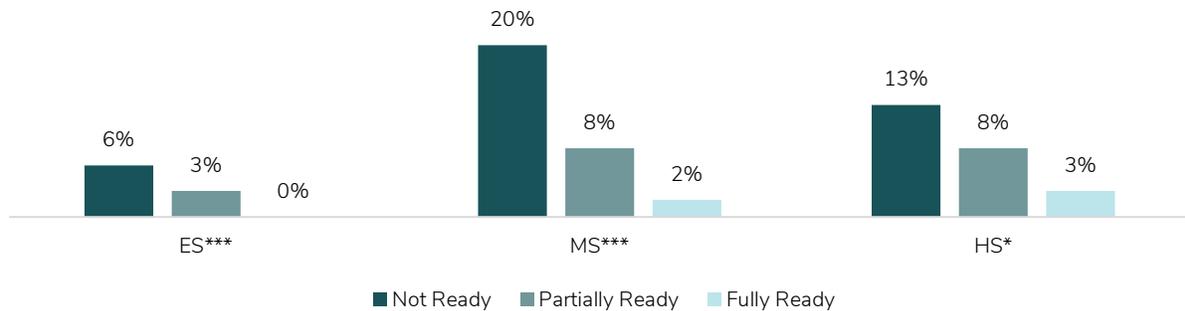
Figure 23. **EL Status Change and Suspension**



N=432-509

School readiness that was measured in kindergarten predicted suspensions in elementary, middle, and high school. Those who were not ready were more likely to be suspended in the future.

Figure 24. **Percent Suspended by Readiness**



N=445-683

WHO GRADUATES HIGH SCHOOL ON TIME?²⁵

The sample in this study included students who were still in SFUSD in 2022. Those who transferred out of the school district before the 12th grade were not included in the analysis. In addition, no information was available as to whether students dropped out. In sum, this section compares those who graduated on time to those who repeated grade(s) among those whose data were available through the 12th grade. Those who transferred out but moved back in were also included, provided their graduation data were available.

Takeaways

90% of students in the Kindergarten Readiness Cohort graduated on time. Almost all *Fully Ready* students graduated on time, whereas only 64% of *Not Ready* students graduated on time.

The figure below summarizes significant predictors for on-time graduation. On-time graduation was highly associated with sociodemographic variables including race/ethnicity, special education status, and EL status. Family factors at kindergarten such as single parenthood, family income, and parents' coping and support were also associated with on-time graduation. Primary language development, school readiness, and ECE attendance were also predictors of graduating on time.

Figure 25. **Significant Predictors for On-Time Graduation**

Sociodemographic Factors

- Race/Ethnicity (Asian, White, Other > Hispanic/Latino, African American)
- Not in special education
- Never EL or EL in ES only

Family Factors

- Not living with a single parent (K)
- Lower income (K)
- Higher parental coping & support (K)

School Readiness

- More ready for kindergarten
- Primary language development on track
- Attended ECE

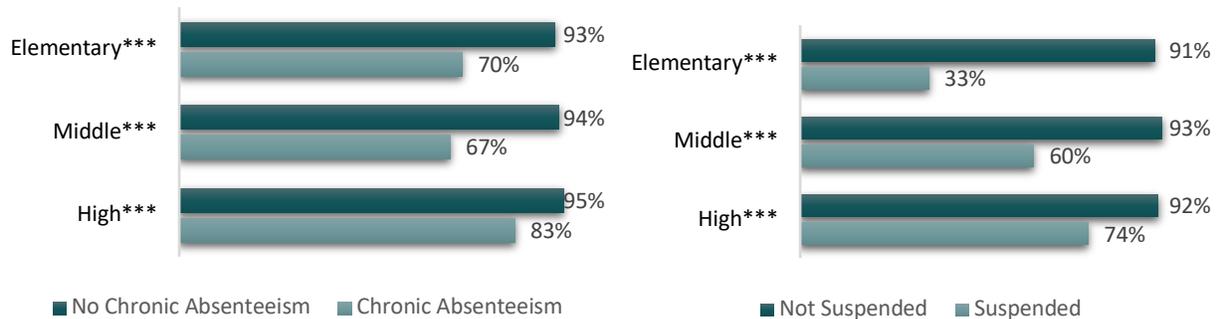
School Engagement

- Not chronically absent
- Not suspended

²⁵ Note that the 90% graduation rate reported is calculated differently than a typical graduation rate calculation which reflects the percent who graduated among the 12th grade class. Our calculation reflects the percentage who graduated on time among the 2009 KOF cohort whose data were available through 2022.

As might be expected, those who were chronically absent or who were suspended were less likely to graduate on time. The figure below shows what percentages of students graduated on time or repeated grades by school level.

Figure 26. **Percent of Students who Graduated on Time by Chronic Absenteeism and Suspension**



Note. N=297-430. *** p<.001.

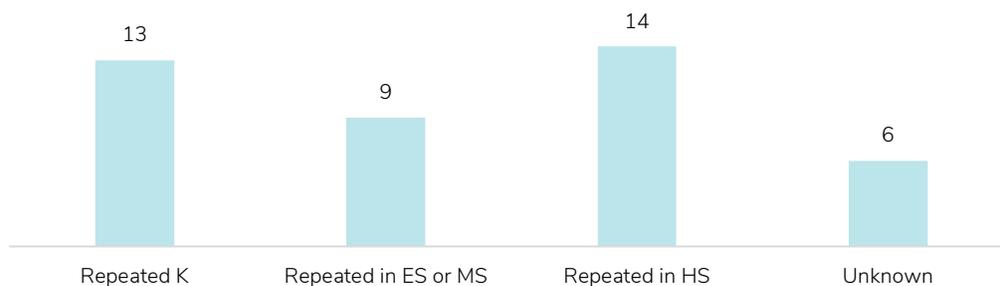
Who Repeated a Grade?

In the Kindergarten Readiness Cohort, 42 students did not graduate on time, having repeated grade(s) at some point. Thirteen students repeated kindergarten, and nine students repeated a grade in elementary school or middle school; all of these 22 students were in 11th grade in 2021-2022. Fourteen additional students either repeated grade(s) in high school or had not complete their senior year in 2021-2022.

Takeaways

Of those who did not graduate on time, students who were *Not Ready* for kindergarten tended to repeat a grade earlier in their schooling; after repeating that early grade they seemed to be on track to graduate. Those who were *Partially or Fully Ready* for kindergarten but did not graduate on time tended to repeat a grade in high school.

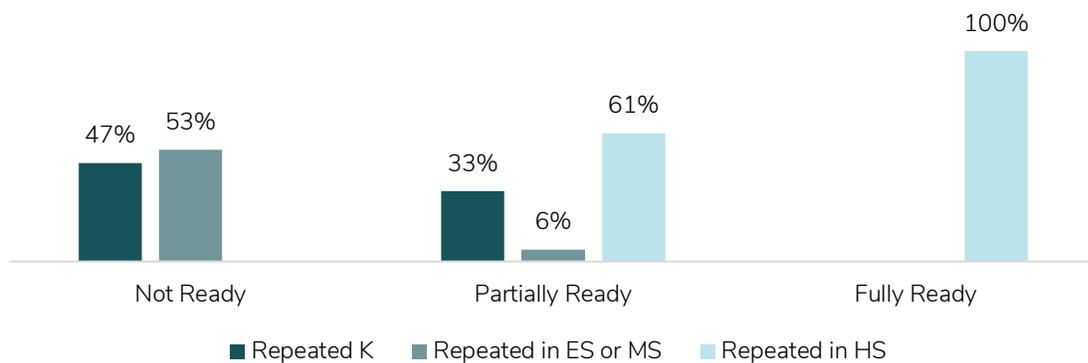
Figure 27. **When Students Repeated a Grade**



N=42.

There were significant differences in when students repeated grades by their readiness group. Among those who repeated a grade and were *Not Ready* in kindergarten, 47% repeated kindergarten and 53% repeated a grade in elementary school, whereas those who repeated a grade but were *Partially* or *Fully Ready* in kindergarten tended to repeat a grade in high school. This result suggests that students who were *Not Ready* in kindergarten tended to repeat grades earlier in their schooling, but after repeating a grade they were back on track to graduation— all students who had repeated in K, ES, or MS were in the 11th grade in 2022, which means that they repeated a grade only once.

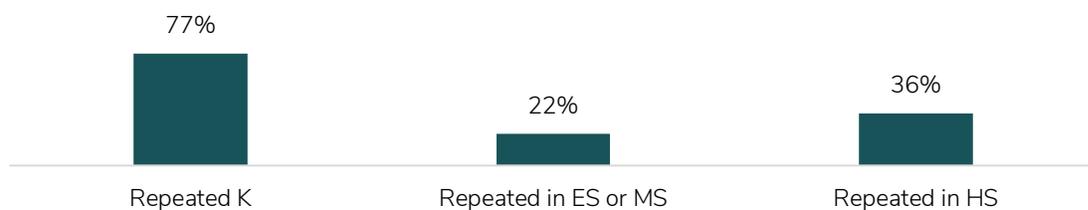
Figure 28. **Grade of Repetition by Readiness Group**



Note. N=36 (Not Ready=15; Partially Ready=18; Fully Ready=3). Differences were statistically significant. ***p<.001.

Appendix N: Demographic Profiles of Students Who Repeated a Grade shows differences in demographic profiles depending on when students repeated a grade. Findings suggest that **repeating kindergarten is associated with not being ready for kindergarten and having difficulties with English, whereas repeating later grades is associated with suspensions.** In the figure below, among those who repeated kindergarten, 77% were EL in kindergarten, whereas 22% of those who repeated a grade in elementary school or middle school and 36% of those who repeated a grade in high school were EL in kindergarten.

Figure 29. **Percent of Those who Repeated a Grade who Were English Learners in Kindergarten**

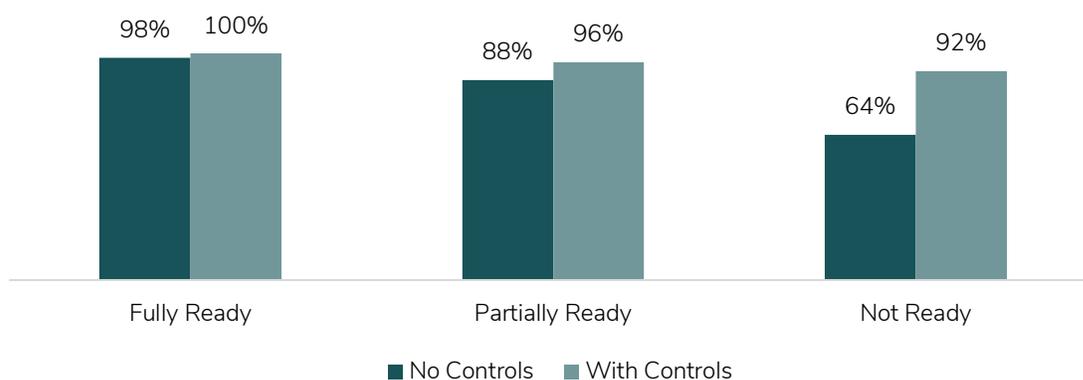


Note. N=36 *p<.05.

Who Beat the Odds?

In this study, school readiness was a strong predictor for academic outcomes, behavioral outcomes, and graduation. **Almost all Fully Ready students graduated on time, compared to only 64% of Not Ready students who did so.** When the sociodemographic variables, attendance, and suspensions were accounted for, readiness remained a significant predictor of on-time graduation (see [Appendix O: GLM Results for Graduation on Time](#) for details).

Figure 30. **On-Time Graduation by Readiness Group**

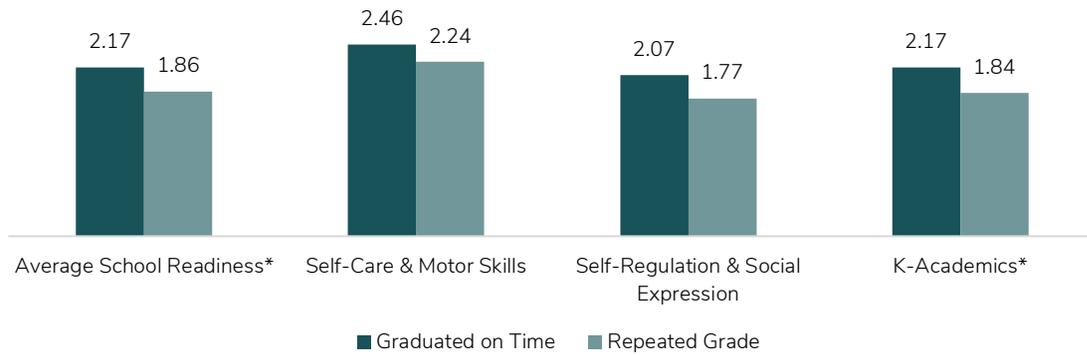


Note. N=429. The differences are statistically significant at $p < .01$. For the control variables, gender, race/ethnicity, English Learner status (K), Special Education status (K), family income (K), single parenting (K), ECE experience, having been suspended at least once, and having been chronically absent at least one year were used.

Of the 75 students who were considered Not Ready in 2009, graduation information was available for 50 students. As illustrated in the figure above, with statistical controls in place, the Not Ready group graduates on time at a rate nearly on par with the Fully Ready group. To examine this further, we took a closer look at students who were Not Ready at kindergarten but who nonetheless graduated on time. How were these students who “beat the odds” different from their Not Ready peers who did not graduate on time? [Appendix P: A Closer Look at Not-Ready Students Who Beat the Odds](#) shows the variety of family and demographic factors we explored to find out what distinguished these two groups of students. The only significant difference between Not Ready students who graduated on time and those who repeated a grade was their suspension history. **Half of Not Ready students who repeated a grade had been suspended at least once, whereas only 22% of Not Ready students who graduated on time had been suspended.**

We also investigated the school readiness and building block scores of these two groups of students. Even though teachers considered all these students not ready for kindergarten, the patterns of their building block scores were different. Not Ready students who graduated on time tended to have higher overall readiness scores and higher Kindergarten Academics scores than did their counterparts.

Figure 31. **School Readiness Differences among Not Ready Students by On-Time Graduation**



Note: Ns=50. Scores can range from 1 to 4.

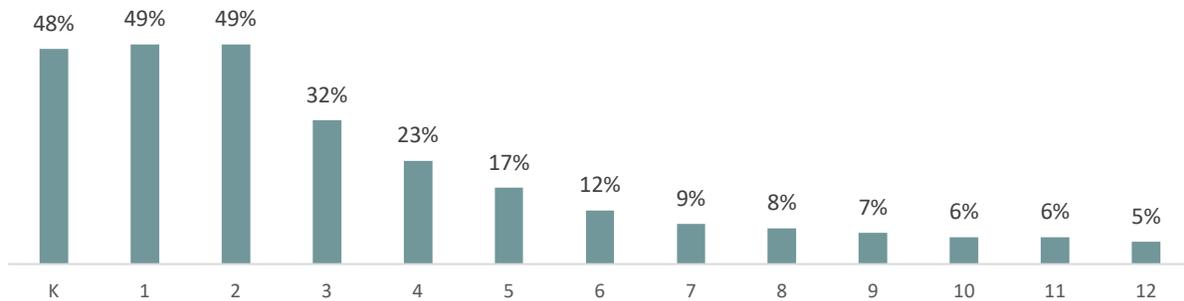
A FOCUS ON ENGLISH LEARNERS, RACE & ETHNICITY

English Learner Status Background and Changes

Students entering K-12 schools in California are classified as English Learners (EL) if they speak a language other than English at home and score below a proficiency threshold on the California English Language Development Test (CELDT). EL status is intended to be temporary. Each Local Educational Agency (LEA) establishes a locally-approved reclassification process. When students demonstrate sufficient English language proficiency according to those criteria, a student's designation changes to Reclassified Fluent English Proficient (RFEP).²⁶

Almost half of the 2009 cohort was designated as EL in kindergarten (48%). Beginning in 3rd grade, this percentage decreased as more students were reclassified each year. These reclassification changes mostly occurred during elementary school. In the 12th grade, only 5% of the cohort was still identified as EL.

Figure 32. **English Learner Percentages by Grade**

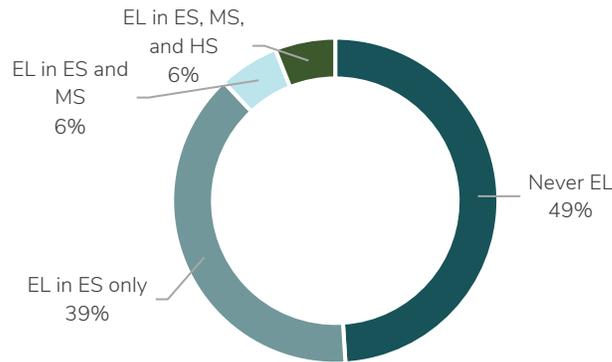


N=459-729.

The next figure summarizes these changes among the subset of 512 students whose EL status was available throughout elementary, middle, and high school. About half of the 2009 cohort were never EL, 39% were reclassified as RFEP in elementary school and 6% turned from EL to English speakers in middle school. Yet, another 6% were still classified as EL at high school entry.

²⁶ See California Department of Education (cde.ca.gov).

Figure 33. English Learner Status Changes by School Level

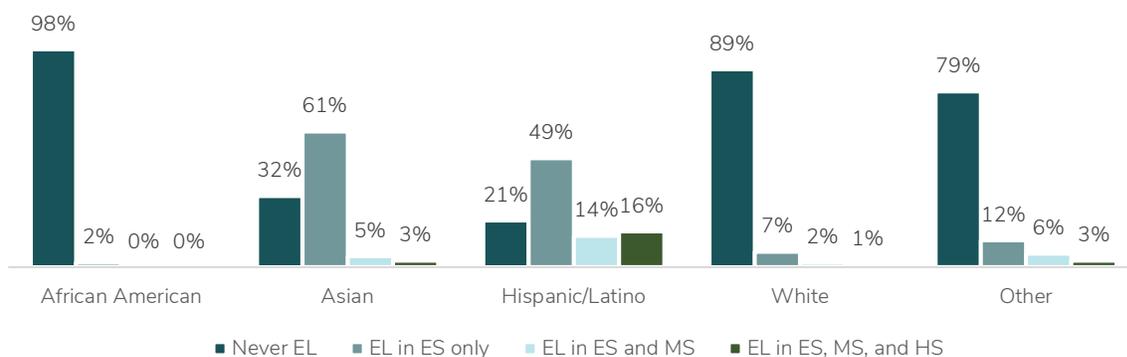


N=512

[Appendix Q](#) describes the details of these different groups of students. Most EL students were Asians speaking Cantonese or other Asian languages, and Hispanic/Latino students speaking Spanish as their primary languages. Asian students tended to become English speakers in elementary school; 93% of Asian students were no longer EL in middle school. Hispanic/Latino students tended to stay EL for a longer time; 70% of Hispanic/Latino students were no longer EL in middle school.

There were clear differences between those who were reclassified as English speakers in elementary and those who remained EL until middle school. Those who were still EL in middle and/or high school were much more likely to be from very low-income families (more than 85% of their families earned \$32,000 or less in kindergarten), have had single parents at kindergarten entry, have no preschool experiences, have been from families with low engagement at kindergarten entry, and have special education needs. At kindergarten entry, their parents also reported higher levels of depression, low support and coping confidence, and low social-emotional development levels among their children.

Figure 34. EL Status Change by Race/Ethnicity

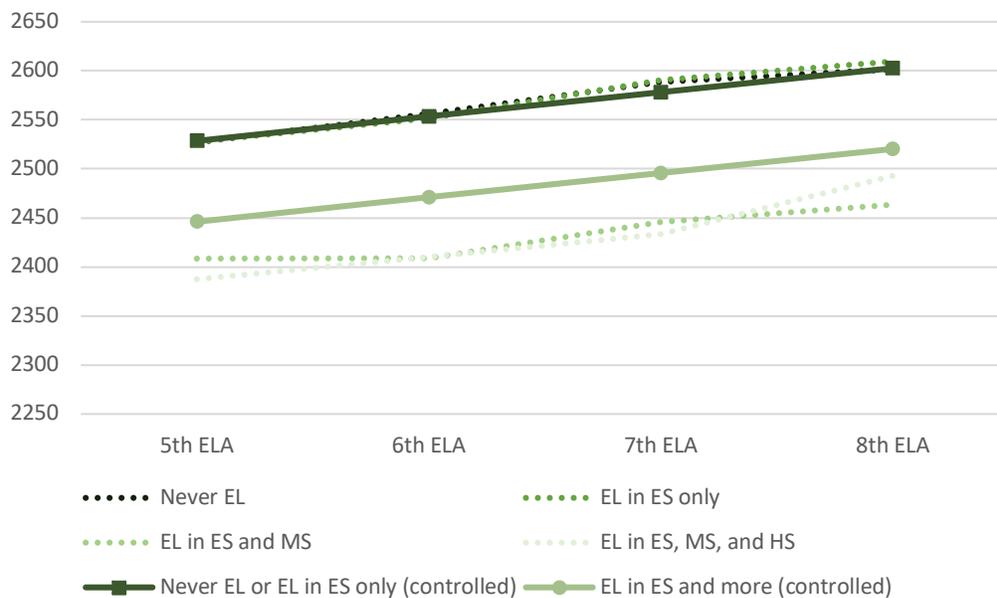


N=494.

The differences between these groups were more distinct in their academic outcomes. The following figures show standardized test scores and GPA over the grades, both in their unadjusted scores and their estimated scores that controlled for sociodemographic factors.

The raw scores (dotted lines) show that while there were no differences between those who were never designated EL and those who were EL in elementary only and between those who were EL until middle school and those who were EL until high school, the first two groups and the last two groups were clearly different in their performance on ELA and Math test scores. As such, these groups were combined for the following trajectory models. The estimated ELA scores suggest that **even after controlling for sociodemographic factors, a significant gap in ELA scores persists across grades** between those who were never EL or were EL in elementary only and those who were EL for a longer time (about 83 points in each grade). However, there was no significant slope difference, suggesting that these two groups of students progressed in their language arts scores at even paces.

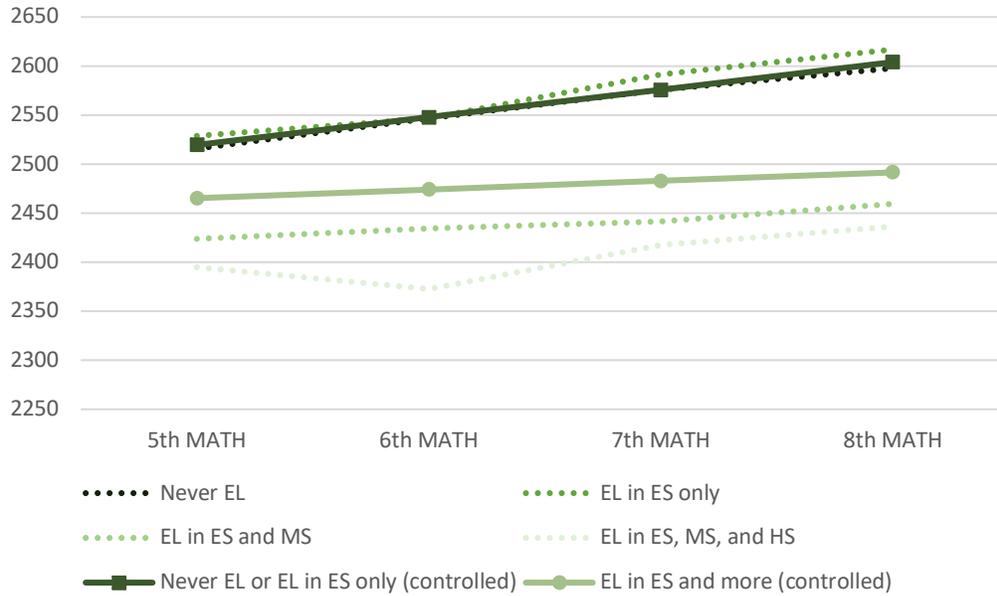
Figure 35. **SBAC ELA Trajectories by EL Status Change**



Note. N=430-467 for raw scores. N=339 for the trajectory model. The model controlled for gender, race/ethnicity, special education status (K), family income (K), single parenting (K), and ECE experience.

For math, the gap between the groups was smaller after controlling for sociodemographic factors in the 5th grade (about 54 points), but the gap between the two groups tended to widen over time. Each year, the “EL in MS+” group gained about 9 points whereas the increment for the “never EL or EL in ES only” group was 28 points. By the 8th grade, the estimated gap between the groups had grown to 112 points. **Those who had an EL designation for a longer time saw slower growth in mathematics through middle school.**

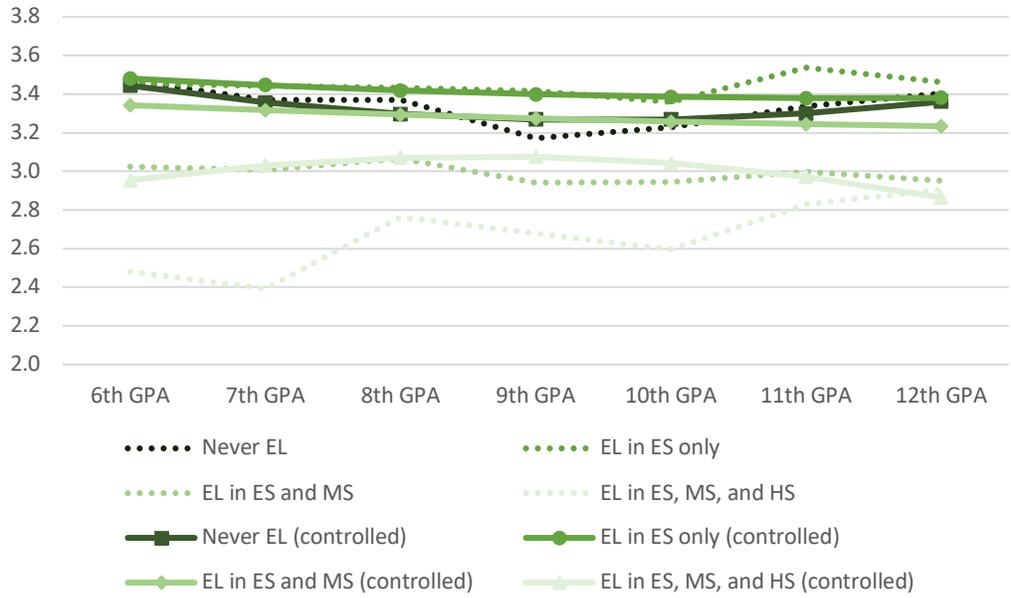
Figure 36. **SBAC Math Trajectories by EL Status Change**



Note. N=431-464 for raw scores. N=340 for the trajectory model. The model controlled for gender, race/ethnicity, special education status (K), family income (K), single parenting (K), and ECE experience.

GPA in each grade also varied by EL status change. Those who were EL in elementary only and then reclassified had the highest GPAs, whereas students who were EL through high school had the lowest GPAs. After adding the control variables, the gaps between the groups would be smaller for those who were never EL, those who were EL in elementary, and those who were EL in middle school as well, but the estimated GPA of those who were EL across ES/MS/HS was significantly lower across all grades.

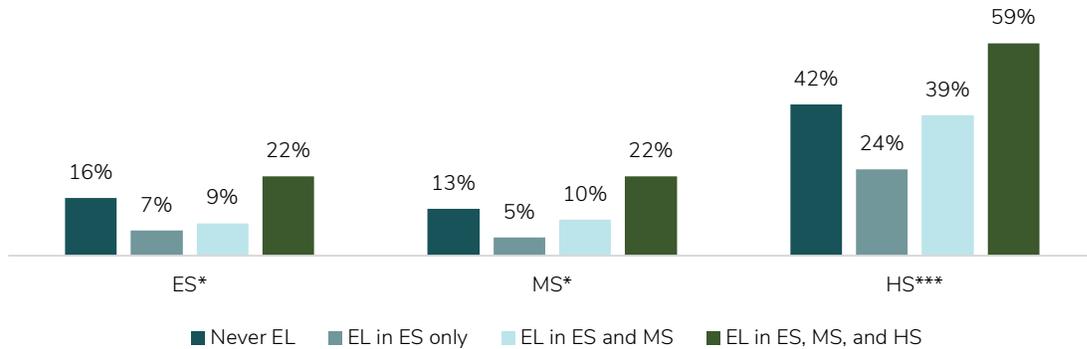
Figure 37. GPA Trajectories by Timing of EL Status Change



Note. N=383-452 for raw scores. N=347 for the trajectory model. The model controlled for gender, race/ethnicity, special education status (K), family income (K), single parenting (K), and ECE experience.

There is much variation among EL students in their absences and suspensions as well. Those who were EL through high school had the most chronic absenteeism at each school stage, whereas those who were EL in elementary only experienced the least chronic absenteeism. In high school, 59% of those who were EL across ES/MS/HS were identified as chronically absent in at least one year.

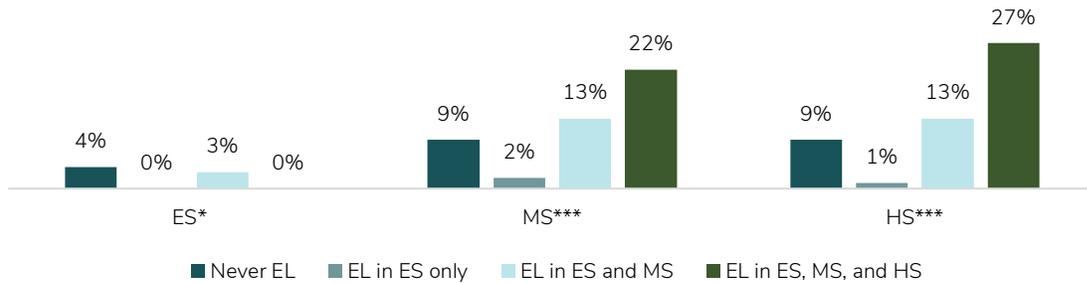
Figure 38. **Chronic Absenteeism by Timing of EL Status Change**



N=432-509

Similar patterns were shown for suspensions. Of students who remained EL in high school, 27% were suspended at least once in high school.

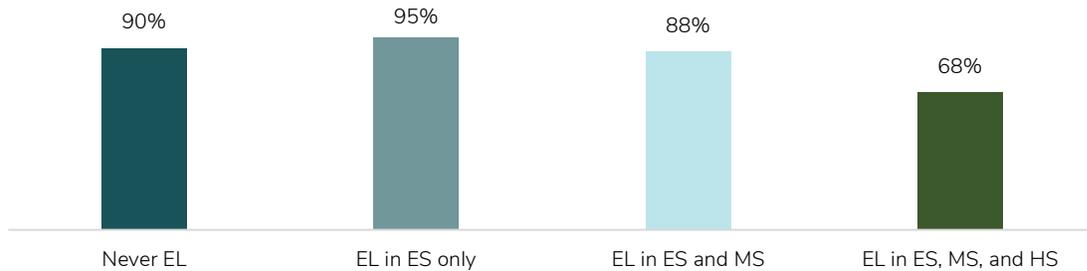
Figure 39. **Suspension by Timing of EL Status Change**



N=432-509.

The percent of students who graduated on time was also significantly different among these groups, with students who remained EL in high school least likely to graduate on time (68%).

Figure 40. **On Time Graduation by Timing of EL Status Change**



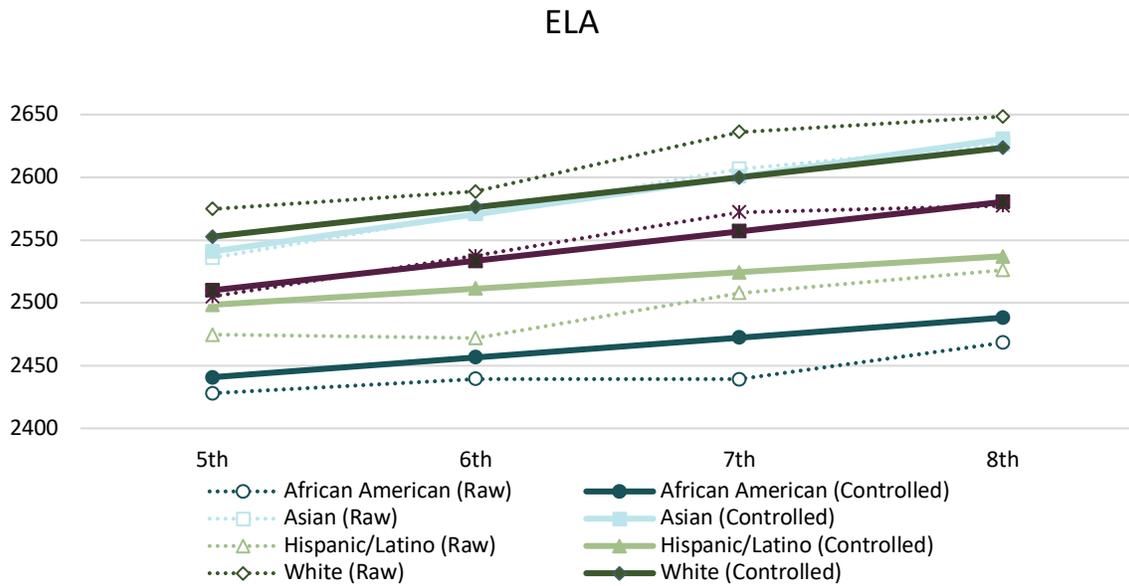
N=415. Differences were significant at *** $p < .001$.

Race/Ethnicity and Language

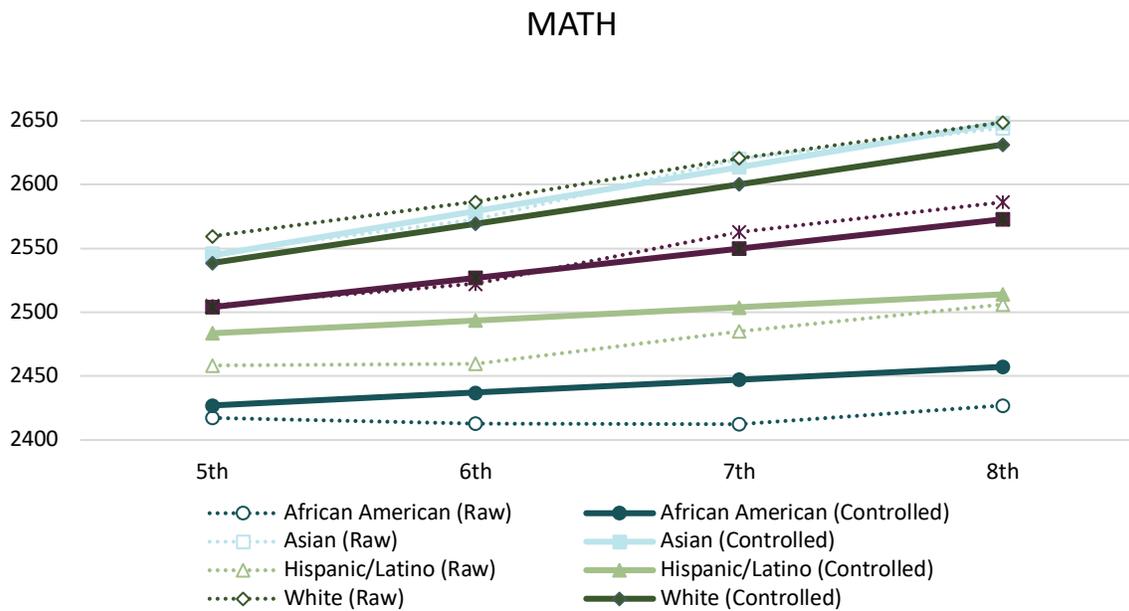
Throughout these analyses there were consistent findings that race/ethnicity and primary language were strongly associated with academic outcomes. The figures below depict the raw scores of these academic outcomes, as well as scores when other sociodemographic factors including gender, EL status, special education status, family income, single parenting, and ECE experiences were controlled for. After controlling for these sociodemographic differences, the gaps between different racial/ethnic groups became smaller but were still significant.

The trajectories of students' progress in achievement also grew at different rates; there were significant slope differences between racial/ethnic groups. For all three outcomes (ELA, math, and GPA), Asian and White students had similar scores across the grades, followed by students of other race/ethnicity, Hispanic/Latino students, and African American students. In addition, Asian and White students showed the steepest gains in scores, whereas Hispanic/Latino and African American students showed more gradual increases for ELA and Math. Note that African American students' math scores barely increased between 5th to 8th grade, indicating a widening of the achievement gap and pointing to an urgent need for much more focused support to redress racial/ethnic disparities.

Figure 41. ELA and Math Scores by Race



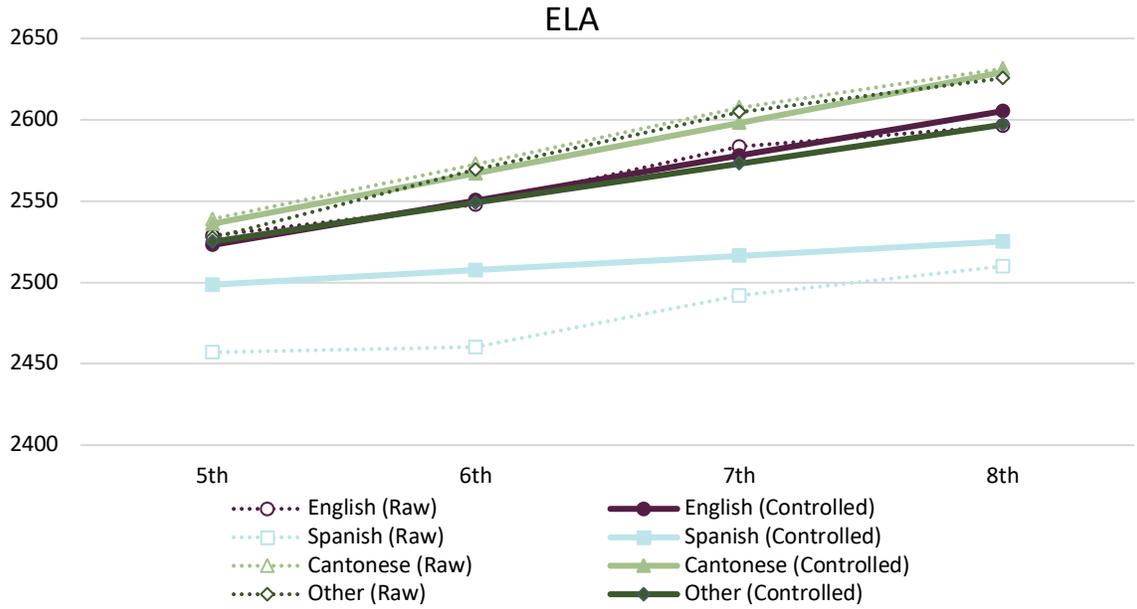
Note. N=403. Scores were estimated given the sociodemographic factors were considered equal and on the average.



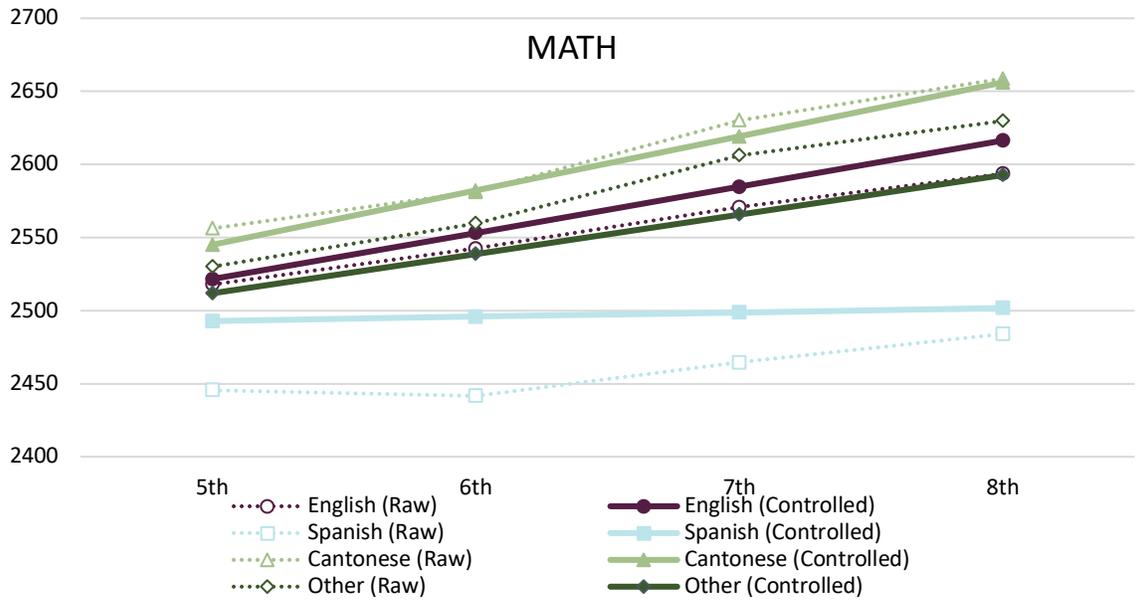
Note. N=404. Scores were estimated given the sociodemographic factors were considered equal and on the average.

When looking at the scores by primary language in kindergarten, the gaps between Spanish speakers and other language speakers grew during middle school. Spanish speakers' math scores barely increased during middle school. These findings also raise an urgent call to action.

Figure 42. ELA and Math Scores by Primary Language



Note. N=403. Scores were estimated given the sociodemographic factors were considered equal and on the average.



Note. N=404. Scores were estimated given the sociodemographic factors were considered equal and on the average.



Summary and Conclusions

School readiness matters for students who attend San Francisco Unified School District (SFUSD) schools. Not only are SFUSD children better prepared for school when they have developed the foundational skills that will support their kindergarten success, but school readiness accrues benefits through to high school graduation in a variety of ways. The more ready a child was in kindergarten, the higher their performance on standardized English Language Arts (ELA) and Math tests, the higher their grade point average in middle school, and the more likely they were to ultimately graduate high school on time, even after controlling for many sociodemographic and school factors. These findings suggest that all efforts should be made to deliver children to kindergarten ready to learn.

Children who are ready for school start at a distinct advantage that persists throughout their SFUSD K-12 journey. Results from this study find that students with higher levels of school readiness start at a more advanced position, and their academic achievement trajectory grows from this higher starting point. The elevated starting point that *Fully Ready* students are equipped with continues to support their achievement into the 8th grade, such that, in some cases, even if their achievement showed no growth over the years, their scores would still exceed that of *Not Ready* students whose performance has improved over the grades. **This is how school readiness matters.**

Importantly, our findings suggest that it is very difficult and highly unlikely to catapult from one trajectory to a more successful trajectory. Children who are less ready at kindergarten don't score as highly on early standardized tests, and it does not appear to be the case that they catch up over the course of their school journeys. Although these children do improve in test scores over time, so too do the children who arrived at school ready to go. Trajectories between ready and less ready children remain parallel. Although all trajectories demonstrate some

upward slope in growth, gaps that existed in early years between children more and less ready for school persist as they advance to much later years in school.

In some cases, the achievement paths further diverge between ready and not ready students widen over time, and some gaps observed for students of different races/ethnicities and primary languages widen over time. In short, it's exceedingly unlikely for student performance to switch paths and change slopes. Given the intransigence of the slopes, the **best intervention is to raise the starting point and provide effective supports before children even enter the K-12 system, placing a spotlight on the importance of early education experiences.**

And yet, findings also highlight the importance of family engagement in supporting young students on their academic paths. **Students whose families were highly engaged with them in early childhood tended to have better academic outcomes through high school.** "High Engagement Families" spent more time with their children engaged in a variety of activities (on average, 5-6 times per week per activity type) and visiting community resources (e.g., Family Resource Centers, libraries, parks, etc.) with their children. These families also reported higher levels of coping and social support and participating in parent education classes or support groups than the other family groups. Children from "High Engagement Families" achieved higher standardized test scores in ELA and Math in 5th through 8th grades, and they also received higher grades in 8th through 12th grades as compared with their peers who had lower levels of engagement with their families at the start of kindergarten.

Some student characteristics that were treated as control variables in this study warrant additional comment. Details contained in the Appendices illustrate fairly consistent, systematic differences in achievement by race/ethnicity, gender, English learner status, special needs status, household income, and whether the student's household was headed by a single parent in kindergarten. These findings indicate that particular attention must be paid to address the educational and perhaps basic needs that students and families present with in order that all students might thrive. Findings suggest that boys may need something different from girls; Asian students may need something different from what Black/African American students need; lower-income households may have different needs than other households. **Without a focus on equity, the gaps observed can only persist, if not widen.**

Taken together, these findings demonstrate the importance of early investments in preschool and other early childhood enrichment and highlight the critical role parents and caregivers play in setting up children for lifelong success. These findings also highlight the challenge of the intransigence of these trajectories, which may point to the need for more intensive interventions during the school day and in out-of-school time programming to help students who enter school less ready to jump to a higher trajectory that will set them up for great success and achievement in the long run.



Appendices

APPENDIX A: ABOUT THE RESEARCHERS

Clarity Social Research Group (Clarity) was founded in 2012 and grew from prior experiences in research and non-profit consulting that left us wanting for greater impact on issues of social justice and equity. Clarity is a small woman- and minority-owned organization, dedicated to uplifting vulnerable voices seldom heard and contributing to upstream, broad-based, inclusive, and community-supportive efforts. Led by founder and CEO Penelope Huang, PhD, Clarity's consultants share broad and deep experience partnering with government agencies, foundations, non-profits, and community-based organizations in program evaluation, needs assessment, and strategic planning.

For questions about this report, please contact:

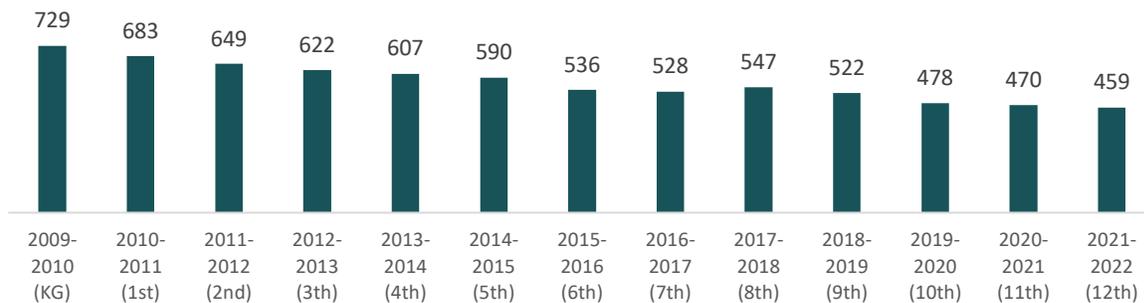
Clarity Social Research Group
Penelope M. Huang – Ph.D., Founder & CEO
Lynne Mobilio – Ph.D., Senior Associate
Yoonyoung Kwak – Ph.D., Senior Data Specialist
Kristina Kelly – Ph.D., Senior Consultant

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APPENDIX A: WHO TRANSFERRED OUT OF SFUSD?

Of the 742 students who were assessed in 2009 as part of the Kindergarten Readiness Study, SFUSD administrative data were available for 729 students. The figure below shows the number of students whose data were available throughout the 13 years. In sum, 403 students stayed in SFUSD during the 13 years, whereas 270 students transferred out of SFUSD. The remaining 56 students for whom data were available in 2022 had transferred out and then transferred back into SFUSD.²⁷

Figure A. Sample Retention



Note. The grades in parentheses indicate the grades of the students on track to graduate in Spring 2022.

We explored whether there were significant differences between students who stayed in SFUSD between kindergarten and senior year of high school versus students who transferred out of the district. The first figure below provides a demographic profile of each group. Those who transferred out of SFUSD were more likely to be: White, speak English, be in general education, and have families with higher income. Additionally, students who transferred tended to have higher earlier standardized scores before leaving SFUSD than those who stayed in SFUSD. However, those who left SFUSD during high school tended to have a lower high school GPA before leaving as compared to students who stayed in the district.

²⁷ Students who left SFUSD might be a combination of those who voluntarily transferred out of the district, as well as those who may have dropped out of school. Students' reasons for leaving the district were not available.

Table A. Demographic Comparisons between Students who Stayed in SFUSD and Students who Transferred Out

	Stayed in SFUSD	Transferred Out
GENDER	459	270
Female	50.5%	52.2%
Male	49.2%	47.4%
Other	0.2%	0.4%
ETHNICITY***	444	252
African American	7.7%	10.7%
Asian	43.0%	30.6%
Hispanic/Latino	26.6%	26.6%
White	15.3%	25.8%
Other	7.4%	6.3%
PRIMARY LANGUAGE (K)***	459	270
English	44.2%	60.4%
Spanish	21.4%	17.8%
Cantonese	23.7%	10.0%
Other	10.7%	11.9%
ENGLISH LEARNER (K)***	459	270
English Learner	54.2%	38.1%
Non-English Learner	45.8%	61.9%
SPECIAL EDUCATION STATUS*	459	270
Special Education Student	9.6%	5.6%
Not a Special Education Student	90.4%	94.4%
SCHOOL READINESS	455-459	265-270
Overall Average	3.29	3.35
Self-Care & Motor Skills	3.50	3.55
Self-Regulation & Social Expression	3.22	3.28
K-Academics	3.32	3.40
SINGLE PARENTING (K)	364	221
Not Single Parenting	71.2%	75.1%
Single Parenting	28.8%	24.9%
FAMILY INCOME (K)***	343	205
\$0-\$31,999	46.1%	32.2%
\$32,000-\$84,999	27.1%	33.2%
\$85,000-\$125,999	13.7%	11.2%
\$126,000+	13.1%	23.4%
ECE EXPERIENCE ***	459	270
No Preschool	15.3%	17.8%
PFA	45.3%	27.8%
Other Preschool	39.4%	54.4%
FAMILY ENGAGEMENT**	314	191
Low Engagement	40.8%	28.8%
Moderate Engagement	37.9%	40.3%
High Engagement	21.3%	30.9%
OTHER FAMILY OR CHILD FACTORS	354-373	218-228
Social Emotional Development***	2.89	3.03
Parental Depression	1.66	1.64
Parental Coping & Support	3.54	3.59

Note. Among those who stayed in SFUSD, 56 students transferred out of SFUSD, but transferred back to SFUSD before 2021-2022.

We also explored differences on key outcome measures between students who stayed in SFUSD and those who transferred out over the course of the 13 years. Students who transferred out of SFUSD tended to have higher standardized scores than those who stayed in SFUSD, but those who left SFUSD during high school tended to have lower high school GPA before leaving. There were no significant differences for suspensions or for chronic absenteeism.

Table B. There were no differences between those who remained in SFUSD and those who transferred out on key outcome measures.

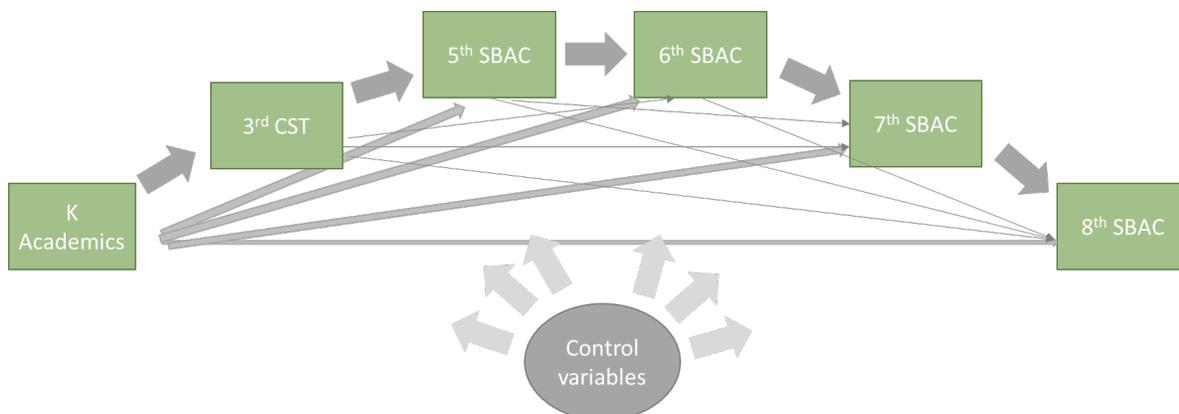
ELA	Stayed in SFUSD	Transferred Out
ELA	380-418	70-162
CST 3 rd *	358.7	375.1
SBAC 5 th **	2510.5	2536.8
SBAC 6 th *	2535.4	2560.0
SBAC 7 th	2571.2	2589.0
SBAC 8 th	2590.2	2600.2
MATH	382-419	69-164
CST 3 rd	422.5	433.3
SBAC 5 th	2509.6	2524.6
SBAC 6 th	2530.3	2532.4
SBAC 7 th	2566.7	2576.4
SBAC 8 th	2590.4	2605.4
GPA	397-415	25-89
Middle School GPA (6 th – 8 th)	3.35	3.42
High School GPA (9 th – 12 th) ***	3.27	2.80
SUSPENSION	420-456	26-230
Suspended in ES	1.8%	2.2%
Suspended in MS	6.9%	5.3%
Suspended in HS	6.4%	7.7%
CHRONIC ABSENTEEISM	420-456	26-230
Chronically absent in ES	12.1%	15.7%
Chronically absent in MS	9.4%	16.0%
Chronically absent in HS	34.8%	38.5%

APPENDIX B: AN OVERVIEW OF ANALYTIC STRATEGIES

Depending on the research questions, different sets of analyses were conducted. To find appropriate procedures, types of variables and their distributions were considered. The following analytic methods were used across research questions.

1. **Descriptive Statistics/Frequencies:** Averages for continuous variables or frequencies for categorical variables were calculated.
2. **ANOVA or Pearson's Chi-Squared Test:** These are statistical tests for group differences. ANOVA was conducted for continuous outcomes and chi-squared test was used for categorical outcomes.
3. **Pearson Correlations:** This shows the associations between two continuous variables.
4. **Mixed-Effects Multi-Level Model (MLM):** For multi-level data (for example, when students are nested in schools), mixed-effects multi-level model was used. This analysis tests the associations between the focal variables after accounting for control variables and schools.
5. **Generalized Linear (Mixed) Model (GLM):** This analysis was used when the outcome variable was binary (i.e., graduation on time, chronic absenteeism, and suspension.)
6. **Structural Equation Model (SEM):** SEM was used to explore the associations between school readiness and later academic outcomes. While the same control variables (race/ethnicity, gender, EL, special education, income, single parenting, and preschool experiences) were still included in the models, it was tested whether school readiness was directly associated with later academic outcomes after considering the earlier scores or whether the earlier scores fully mediated the associations. The results showed whether the mediator fully explained the associations between the independent variable and the dependent variable.

Figure B. A Conceptual SEM to Test the Associations between K-Academics and the Standardized Scores



7. **Latent Growth Curve Model (LGCM):** This analysis was used for the SBAC scores and GPA. SBAC scores tended to increase over the grades and GPA tended to decrease and increase. LGCM fitted the SBAC scores linearly and GPA with quadratic terms. This analysis allowed us to test what factors were associated with the intercept and the trajectories.

APPENDIX C: METHODOLOGICAL DETAILS OF THE ORIGINAL 2009 KINDERGARTEN READINESS STUDY

In 2009, a **random sample** of 42 elementary schools across SFUSD was chosen for participation in the SFUSD Kindergarten Readiness Study. Within each school, a kindergarten teacher was selected (at random) to participate in the assessment, with the condition that no first-year teachers were eligible to participate. In all, 751 children from 42 classrooms in 41 schools in the San Francisco Unified School District were assessed.

With a sample size of 751 and a population size of 4,722 entering kindergarten students in SFUSD, **the margin of error for this study is no greater than 3.28 percent**. Taking sampling error into account, the margin of error means that we are 95 percent confident that the true finding in the population would vary by no more than +/- 3.28 percent from the corresponding finding based on the sample.

It is important to note that this research was designed and implemented to adhere to the highest federal research standards as well as California Education Codes 49076.b.5 and 49074. For instance, students' names were not indicated on any assessment forms; instead, the researchers used unique identifiers based on a combination of students' initials, birthdates, and gender. These identifiers enabled the research team to communicate with teachers about particular assessment forms, if there was missing or illegible information, without compromising students' anonymity in the study.

Teacher observation was selected as the most appropriate, valid, and reliable method of assessing the kindergarten readiness of students. To increase the validity and reliability of teacher observations, **all teachers were trained** on how to administer the Kindergarten Observation (KOF) and Parent Information Forms (PIF). Teachers were able to complete most of the items on the KOF through simple, passive observation of the children in their classrooms. A few items, however, did require one-on-one, teacher-child interaction.

Passive parental consent was obtained, and the consent rate was high across all participating schools (90% on average). Voluntary completion of the Parent Information Form was also high, with 83 percent of parents completing the PIF (83% response rate).

A full report of these findings can be accessed in the report entitled "Portrait of School Readiness 2009-10: San Francisco Unified School District" upon request to the San Francisco Department of Early Childhood.

APPENDIX D: 2009 KINDERGARTEN READINESS SAMPLE VS. PEERS

To ensure that our sample of students who entered kindergarten in 2009 was a close reflection of students overall who entered the district that year, we compared our sample of children who were assessed on the Kindergarten Observation Form (KOF Sample) to other children starting kindergarten in SFUSD that year (Non-KOF Sample). To the extent that these two groups mirror each other on important demographic variables, we can have confidence that findings based on the KOF Sample can be generalized to the broader population of SFUSD students. There were no differences between KOF and Non-KOF Samples on demographic variables.

As the following tables illustrate, there were no differences between the KOF Sample and Non-KOF Samples for gender, ethnicity, English Learner status, homeless status, or Special Education status. Similar proportions of our KOF sample and the Non-KOF sample moved in and out of SFUSD during their K-12 journeys. Moreover, similar percentages of each sample graduated on time.

Table C. Comparing KOF and Non-KOF Sample Demographics

	KOF Sample N=729	Non-KOF Sample N=3993	All 2009 Kindergarten Students N=4722
GENDER			
Female	51.2%	48.6%	49.0%
Male	48.6%	51.1%	50.7%
Other	0.3%	0.3%	0.3%
ETHNICITY			
African American	8.4%	9.0%	8.9%
American Indian or Alaskan Native	0.5%	0.4%	0.4%
Asian	32.0%	34.7%	34.3%
Filipino	4.8%	3.8%	4.0%
Hispanic/Latino	25.4%	25.5%	25.5%
Pacific Islander	0.7%	1.0%	1.0%
White	18.2%	14.8%	15.3%
Two or more races	5.5%	7.0%	6.7%
Unknown	4.5%	3.8%	3.9%
ENGLISH LEARNER			
English Learner	48.3%	51.2%	50.8%
Non-English Learner	51.7%	48.8%	49.2%
HOMELESS STATUS			
Homeless in Kindergarten	1.1%	1.1%	1.1%
Not Homeless in Kindergarten	98.9%	98.9%	98.9%
SPECIAL EDUCATION STATUS			
Special Education Student	8.1%	7.9%	8.0%
Not a Special Education Student	91.9%	92.1%	92.0%
REMAINED IN SFUSD K-12th			
Remained in SFUSD K-12 th Grade	55.3%	55.3%	55.3%
Moved out of SFUSD after Kindergarten	37.0%	37.1%	37.1%
Moved out and then back in to SFUSD	7.7%	7.6%	7.6%

There were no differences between KOF and Non-KOF Samples on Outcomes

	KOF Sample	Non-KOF Sample	All 2009 Kindergarten Students
ELA	454-579	2391-3170	2845-3749
CST 3 rd	363.3	361.3	361.6
SBAC 5 th	2516.7	2515.1	2515.3
SBAC 6 th	2539.8	2535.4	2536.1
SBAC 7 th	2574.3	2571.1	2571.6
SBAC 8 th	2591.7	2587.9	2588.5
MATH	451-583	2385-3195	2836-3778
CST 3 rd	425.5	426.5	426.3
SBAC 5 th	2513.1	2514.6	2514.4
SBAC 6 th	2534.3	2532.4	2532.7
SBAC 7 th	2568.4	2568.6	2568.5
SBAC 8 th	2592.7	2590.6	2591.0
GPA	439-486	2401-2647	2840-3133
Middle School GPA (6 th – 8 th)	3.36	3.34	3.35
High School GPA (9 th – 12 th)	3.23	3.25	3.24
SUSPENSION	729	3992	4721
Suspended at least once	8.2%	7.3%	7.5%
Never suspended	91.8%	92.7%	92.5%
CHRONIC ABSENTEEISM	729	3988	4717
Chronically absent at least one year	32.0%	35.6%	35.0%
Never chronically absent	68.0%	64.4%	65.0%
GRADUATION RATE	419	2288	2707
Graduated on time	91.9%	90.2%	90.4%
Did Not Graduate	8.1%	9.8%	9.6%

APPENDIX E: ASSOCIATIONS BETWEEN SOCIODEMOGRAPHIC VARIABLES AND ACADEMIC OUTCOMES

The results indicate that academic outcomes differed by the sociodemographic variables listed below.

ELA scores differed by:

- gender (female students had higher scores than male students)
- race/ethnicity (White students had higher scores than African American or Hispanic students)
- English Learner status (English speaking students had higher scores than English Learners)
- special education status (students in general education had higher scores than students in special education)
- family income (higher income was associated with high scores until \$85,000-\$125,999), ECE experiences (student attended other type of preschool than PFA had highest scores), and
- single parenting (students with double parents had higher scores than students with single parents).

For Math scores, these differences were similar, but weaker associations were found between male and female students and between English speakers and English learners for some years.

For GPA, the differences were also similar, but English Learner status was not a significant predictor.

For chronic absenteeism, there were no significant differences by gender or special education status. However, the differences by race/ethnicity, income, and single parenting were large.

Suspension was also predicted by all of these variables except for ECE experiences.

	Gender			Race/Ethnicity						English Learner Status in 2009			Special Education Status in 2009		
	Male	Female	p	African American	Asian	Hispanic/Latino	Other	White	p	Not EL	EL	p	Not special education	Special education	p
CST ELA 3 rd	353	373	***	327	376	322	369	400	***	383	343	***	367	302	***
SBAC ELA 5 th	2505	2527	**	2428	2536	2475	2505	2575	***	2533	2500	***	2524	2423	***
SBAC ELA 6 th	2525	2554	**	2439	2571	2472	2537	2589	***	2559	2521	***	2549	2434	***
SBAC ELA 7 th	2556	2591	***	2439	2607	2508	2572	2636	***	2591	2558	**	2584	2442	***
SBAC ELA 8 th	2570	2612	***	2468	2626	2526	2577	2648	***	2603	2581	*	2601	2470	***
CST MATH 3 rd	417	433	*	341	461	370	429	456	***	435	416	*	431	338	***
SBAC MATH 5 TH	2513	2514		2417	2546	2458	2505	2560	***	2522	2504	*	2519	2434	***
SBAC MATH 6 TH	2529	2539		2413	2573	2460	2522	2587	***	2549	2520	**	2542	2437	***
SBAC MATH 7 TH	2560	2576		2412	2620	2485	2563	2621	***	2579	2558		2577	2462	***
SBAC MATH 8 TH	2579	2605	*	2427	2644	2506	2586	2649	***	2601	2584		2602	2473	***
Middle School GPA	3.21	3.51	***	2.73	3.62	2.94	3.35	3.65	***	3.42	3.31		3.39	3.12	*
High School GPA	3.10	3.39	***	2.48	3.58	2.83	3.16	3.51	***	3.19	3.29		3.27	2.94	**
Chronic Absenteeism	34%	30%		71%	18%	43%	43%	25%	***	36%	27%	**	31%	39%	
Elementary	13%	13%		46%	4%	19%	22%	9%	***	17%	9%	**	13%	19%	
Middle	10%	11%		32%	3%	17%	14%	9%	***	13%	8%		10%	16%	
High	38%	32%		69%	18%	53%	45%	33%	***	42%	29%	**	35%	36%	
Suspension	11%	6%	*	31%	5%	8%	16%	4%	***	10%	6%	*	8%	15%	*
Elementary	3%	1%	**	10%	1%	2%	2%	0%	***	3%	1%	*	2%	5%	
Middle	8%	6%		24%	3%	7%	17%	3%	***	8%	5%		6%	9%	
High	8%	5%		23%	4%	6%	13%	3%	***	9%	5%		7%	5%	
Graduation on Time	87%	92%		77%	96%	80%	94%	92%	***	88%	91%		92%	68%	***

	Family Income in 2009					ECE Experiences				Single Parenting Status in 2009		
	\$0-\$31,999	\$32,000-\$84,999	\$85,000-\$125,999	\$126,000+	p	No preschool	PFA	Other preschool	p	Not single parenting	Single parenting	p
CST ELA 3 rd	341	371	410	402	***	346	355	377	***	383	333	***
SBAC ELA 5 th	2482	2522	2582	2580	***	2492	2507	2535	***	2540	2480	***
SBAC ELA 6 th	2508	2536	2603	2597	***	2520	2524	2562	***	2569	2481	***
SBAC ELA 7 th	2535	2578	2643	2649	***	2549	2563	2596	***	2604	2517	***
SBAC ELA 8 th	2558	2594	2653	2662	***	2571	2583	2608	*	2621	2529	***
CST MATH 3 rd	401	438	483	461	***	394	426	437	**	452	384	***
SBAC MATH 5 TH	2481	2515	2571	2571	***	2491	2505	2529	***	2539	2468	***
SBAC MATH 6 TH	2496	2538	2607	2607	***	2508	2520	2558	***	2569	2471	***
SBAC MATH 7 TH	2521	2577	2650	2642	***	2532	2555	2597	***	2605	2500	***
SBAC MATH 8 TH	2550	2597	2667	2684	***	2561	2588	2610	*	2631	2516	***
Middle School GPA	3.18	3.46	3.77	3.71	***	3.27	3.29	3.48	**	3.56	3.09	***
High School GPA	3.07	3.34	3.74	3.63	***	3.07	3.18	3.40	***	3.47	2.96	***
Chronic Absenteeism	41%	27%	21%	10%	***	46%	31%	27%	***	22%	46%	***
Elementary	15%	14%	6%	3%	*	24%	9%	13%	***	9%	16%	*
Middle	13%	8%	3%	7%		17%	8%	11%		6%	17%	***
High	41%	28%	20%	13%	***	39%	36%	32%		22%	55%	***
Suspension	12%	8%	1%	2%	**	12%	10%	6%		5%	13%	***
Elementary	1%	2%	0%	0%		1%	3%	2%		1%	3%	
Middle	9%	4%	2%	2%	*	7%	9%	4%		4%	10%	*
High	8%	7%	0%	3%		10%	9%	3%	*	3%	12%	***
Graduation on Time	85%	97%	98%	98%	***	80%	90%	93%	**	96%	83%	***

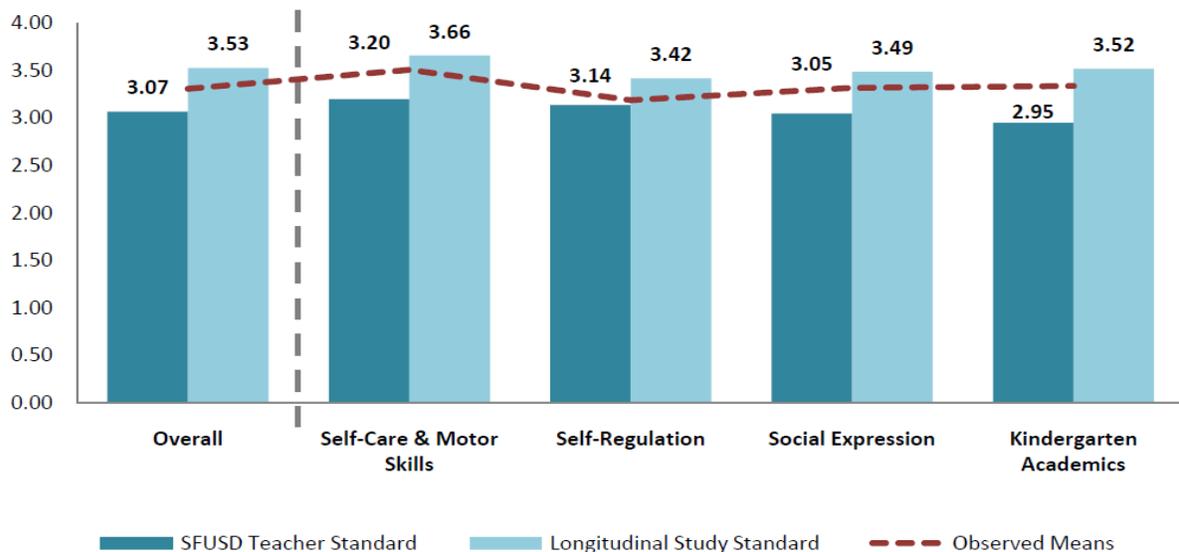
Note. p indicates the levels of significance for group difference tests. *p<.05. **p<.01. ***p<.001.

APPENDIX F: READINESS BUILDING BLOCKS AND READINESS GROUPS

In the 2009 study, there were four building blocks of readiness: *Self-Care & Motor Skills*, *Self-Regulation*, *Social Expression*, and *Kindergarten Academics*. *Self-Care & Motor Skills* are the foundational skills to the other building blocks on which use of small manipulatives, general coordination, and basic self-care techniques are assessed. *Self-Regulation* indicates the ability to regulate behaviors such as comforting oneself or cooperative play with others. *Social Expression* skills include showing empathy, and symbolic play. Lastly, *Kindergarten Academics* measure early academic skills such as counting numbers, recognizing letters and shapes, and writing one's own name.

In the 2009 study, teachers completed a Teacher Survey in which they rated the same KOF items based on what they believed students should achieve to be considered “Ready” for kindergarten. In the figure below, the darker columns are the mean scores of these ratings for each building block (i.e., Teacher Standard.) In the present study, scores over Teacher Standard scores in each building block were considered Ready for that building block. When a student was Ready for all four building blocks, he/she was considered *Fully Ready*. When a student was Ready for at least one building block, but not all four building blocks, he/she was considered *Partially Ready*. When a student was not Ready for all four building blocks, he/she was considered *Not Ready*. **Of 725 whose KOF scores were available, 10% were Not Ready, 45% were Partially Ready, and 45% were Fully Ready.**

Figure C. Longitudinal Study Standard



Source: SFUSD (2009). Portrait of School Readiness 2009-10: San Francisco Unified School District.

The Longitudinal Study Standard – In 2009 a Longitudinal Study Standard was created based on the kindergarten readiness scores of a group of children who, as of third grade, were academically successful by linking the kindergarten readiness assessments of children in San Mateo County (2001-2003) to their third-grade STAR test scores.²⁸ To create the Longitudinal Study Standard for SFUSD, third-grade children who scored at the *Proficient* or *Advanced* levels on their English Language Arts and Mathematics STAR tests were first identified. Kindergarten readiness scores for this group of academically successful children were then calculated to represent the Longitudinal Study Standard, reflecting the kindergarten readiness of children who went on to academic success in third grade.²⁹

The dashed line represents the observed mean scores of SFUSD children in the 2009 school readiness assessment, which shows that on average, children are meeting SFUSD teacher expectations. However, average observed scores fall short of the Longitudinal Study Standard averages. These findings suggest that students can meet their SFUSD teacher expectations, but still not achieve longer-term success as defined by the Longitudinal Study Standard.

²⁸ The full report entitled *Does Readiness Matter? How Kindergarten Readiness Translates Into Academic Success* can be downloaded from www.appliedsurveyresearch.org.

²⁹ To allow for variation in performance, one standard deviation below the average K-readiness score was used as the Longitudinal Study Standard benchmark.

APPENDIX G: CORRELATIONS BETWEEN SCHOOL READINESS, PIF VARIABLES, STANDARDIZED SCORES AND GPA

	CS ELA 3	SBAC ELA 5	SBAC ELA 6	SBAC ELA 7	SBAC ELA 8	CS MATH 3	SBAC MATH 5	SBAC MATH 6	SBAC MATH 7	SBAC MATH 8	Middle School GPA	High School GPA
Readiness Average	0.36	0.37	0.40	0.38	0.32	0.36	0.42	0.43	0.37	0.34	0.40	0.31
Self-Care & Motor Skills	0.21	0.24	0.28	0.24	0.19	0.24	0.30	0.29	0.24	0.25	0.29	0.21
Self-Regulation & Social Expression	0.30	0.32	0.33	0.33	0.28	0.29	0.35	0.35	0.30	0.28	0.34	0.26
K-Academics	0.44	0.43	0.46	0.44	0.38	0.43	0.50	0.51	0.46	0.40	0.44	0.39
Parental Depression	-0.12	-0.15	-0.14	-0.18	-0.08	-0.17	-0.17	-0.14	-0.15	-0.08	-0.14	-0.08
Parental Coping & Support	0.06	0.02	0.03	0.03	-0.03	-0.04	-0.02	0.01	0.01	-0.02	0.03	0.02
Child Social Emotional Development	0.19	0.16	0.19	0.20	0.17	0.05	0.12	0.13	0.10	0.08	0.06	-0.03
Screen Time	-0.15	-0.15	-0.15	-0.21	-0.20	-0.07	-0.18	-0.11	-0.21	-0.21	-0.11	-0.12

	Chronic Absenteeism Ever	Chronic Absenteeism in Elementary	Chronic Absenteeism in Middle	Chronic Absenteeism in High	Suspended Ever	Suspended in Elementary	Suspended in Middle	Suspended in High	Graduation on Time
Readiness Average	-0.18	-0.22	-0.19	-0.12	-0.25	-0.21	-0.24	-0.13	0.32
Self-Care & Motor Skills	-0.12	-0.17	-0.11	-0.08	-0.14	-0.06	-0.14	-0.06	0.21
Self-Regulation & Social Expression	-0.14	-0.19	-0.16	-0.07	-0.23	-0.22	-0.21	-0.10	0.26
K-Academics	-0.26	-0.24	-0.22	-0.20	-0.26	-0.15	-0.27	-0.19	0.40
Parental Depression	0.10	0.12	-0.03	0.02	0.00	-0.04	0.00	-0.02	-0.09
Parental Coping & Support	-0.03	-0.05	0.04	0.02	0.02	0.07	0.01	0.06	0.11
Child Social Emotional Development	0.09	0.11	0.12	0.13	-0.07	-0.02	-0.07	0.01	0.03
Screen Time	0.11	0.06	0.07	0.12	0.07	-0.04	-0.02	0.08	-0.01

Note. N=341-729. Coefficients in bold were statistically significant at p <.05.

	Percent Absent	Suspended	SBAC ELA 5-8	SBAC MATH 5-8	GPA 6-12
English Learner	-0.03	0.00	-0.40	-0.35	-0.19
Special Education	0.10	0.11	-0.47	-0.44	-0.27
Percent Absent (previous year)	0.63	0.06	-0.21	-0.28	-0.39
Percent Absent	-	0.09	-0.22	-0.30	-0.48
Suspended (previous year)	0.13	0.28	-0.14	-0.15	-0.21
Suspended	0.09	-	-0.20	-0.19	-0.21

Note. N=1951-6946 (students X time). Coefficients in bold were statistically significant at p <.05.

APPENDIX H: DETAILED RESULTS OF MIXED-EFFECTS MULTI-LEVEL MODELS

ELA (Building Blocks Individually Entered)

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
N	407	386	334	334	324
ICC (how much schools explain the variances of the outcome)	19%	9%	6%	1%	8%
Intercept	278.3	2401.1	2432.9	2466.0	2488.6
Gender	9.4	10.5	14.4	10.7	22.3*
Race/Ethnicity (Reference : White)	***	***	***	***	***
African American	-31.5*	-85.8***	-95.2***	-129.0***	-106.4***
Asian	6.5	1.4	8.3	4.8	8.9
Hispanic	-32.0**	-32.0*	-60.0***	-65.2***	-55.9**
Other	-13.7	-36.9*	-31.2	-42.5*	-45.7*
English Learner	-27.7***	-18.0	-21.7	-13.4	-6.7
Special Education	-29.7*	-68.2***	-70.3***	-84.6***	-72.2***
Income	2.6	8.3	3.6	8.1**	8.2**
Single parent	-10.9	-1.1	-20.9	-15.0	-22.4
Preschool	4.8	14.3	10.6	7.8	20.4
School Readiness Average	28.4***	31.2***	35.3***	34.2***	24.6**
Self-Care & Motor Skills	23.6***	26.6***	24.7**	23.2**	12.1
Self-Regulation & Social Expression	19.5***	21.3***	25.5***	26.0***	18.3*
K-Academics	35.1***	40.3***	42.0***	37.8***	33.0***

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the outcome was measured was used (e.g., for 3rd grade CST, schools in 2013 were used for analysis). Building blocks were individually entered into the model instead of school readiness average with the control variables and the coefficients for these models are not presented.

ELA (All Building Blocks Entered Together)

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
N	407	386	334	334	324
ICC (how much schools explain the outcome)	20%	11%	6%	1%	9%
Intercept	249.4	2363.5	2406.8	2452.1	2470.9
Motor Skills	2.7	2.5	-4.0	-6.2	-15.9
Self-Regulation & Social Expression	2.0	2.4	11.2	16.6	12.0

K-Academics	31.7***	36.7***	35.5**	27.9*	33.6*
Gender	9.3	10.9	13.9	10.7	21.3*
Race/Ethnicity	**	***	***	***	***
African American	-28.2*	-77.0***	-88.5***	-124.3***	-98.2***
Asian	4.3	-1.9	5.3	2.0	5.6
Hispanic	-26.5**	-26.2	-54.8**	-61.7***	-43.0**
Other	-13.7	-36.7*	-31.0	-42.6*	-45.8*
English Learner	-25.3**	-15.1	-17.5	-9.4	.3
Special Education	-29.4*	-65.8***	-68.7***	-82.6***	-70.1***
Income	2.3	7.8	3.1	7.7**	7.7**
Single parent	-7.8	2.7	-16.7	-12.4	-18.8
Preschool	3.4	12.6	9.7	7.3	20.3

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the outcome was measured was used (e.g., for 3rd grade CST, schools in 2013 were used for analysis).

MATH (Building Blocks Individually Entered)

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
N	409	385	334	334	324
ICC (how much schools explain the outcome)	14%	10%	2%	4%	9%
Intercept	292.0	2378.2	2377.5	2431.2	2413.3
Gender	-1.1	-16.6*	-14.0	-15.3	0.8
Race/Ethnicity	***	***	***	***	***
African American	-64.8**	-78.6***	-103.0***	-125.2***	-119.6***
Asian	22.0	10.5	10.6	29.8	26.9
Hispanic	-33.3*	-40.6**	-66.1***	-66.8***	-79.1***
Other	-9.7	-31.4*	-40.2*	-41.2	-47.5
English Learner	-14.0	-1.2	2.0	1.1	8.9
Special Education	-42.5*	-54.8***	-49.2**	-64.5***	-44.5
Income	1.6	6.7***	8.9***	12.0***	12.9***
Single parent	-22.6*	-10.5	-20.4	-18.3	-18.8
Preschool	18.3	4.5	3.4	11.5	0.3
School Readiness Average	40.6***	42.2***	48.6***	36.0***	46.6***
Self-Care & Motor Skills	38.2***	36.7***	35.7***	25.5**	35.9**
Self-Regulation & Social Expression	26.8***	29.8***	35.4***	26.0***	35.1***
K-Academics	48.4***	51.0***	56.1***	44.8***	49.9***

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the outcome was measured was used (e.g., for 3rd grade CST, schools in 2013 were used for analysis).

MATH (All Building Blocks Entered Together)

	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
N	409	385	334	334	324
ICC (how much schools explain the outcome)	16%	12%	3%	5%	10%
Intercept	243.4	2334.9	2343.4	2397.9	2384.0
Motor Skills	15.3	5.9	-1.2	-3.6	4.3
Self-Regulation & Social Expression	0.4	6.3	15.5	10.5	17.7
K-Academics	38.4***	41.8***	43.8***	38.5**	32.3
Gender	-0.9	-16.2*	-14.8	-15.6	0.8
Race/Ethnicity	***	***	***	***	***
African American	-59.8**	-69.0***	-95.9***	-117.6***	-113.4***
Asian	18.5	7.8	6.4	24.9	23.9
Hispanic	-26.7	-33.1*	-60.3***	-61.6***	-75.3**
Other	-9.8	-30.8*	-40.4*	-42.2*	-47.3
English Learner	-13.1	0.8	7.1	6.0	11.9
Special Education	-41.7*	-52.8***	-47.3**	-61.5***	-42.9
Income	1.1	6.2**	8.3**	11.4***	12.6***
Single parent	-20.8	-6.6	-15.2	-14.8	-16.4
Preschool	16.7	2.6	2.3	10.8	0.8

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the outcome was measured was used (e.g., for 3rd grade CST, schools in 2013 were used for analysis).

GPA (Each Building Block Entered Individually)

	Middle School (N=346)	High School (N=306)
ICC (how much schools explain the outcome)	5%	11%
Intercept	2.66	2.68
Gender	0.28***	0.28***
Race/Ethnicity	***	***
African American	-0.50***	-0.63***
Asian	0.11	0.17
Hispanic	-0.44***	-0.45***
Other	-0.12	-0.07
English Learner	0.06	0.12
Special Education	0.05	0.18
Income	0.05***	0.06**
Single parent	-0.12	-0.09
Preschool	-0.07	-0.04
School Readiness	0.18***	0.10
Self-Care & Motor Skills	0.14**	0.02
Self-Regulation & Social Expression	0.13***	0.09*
K-Academics	0.21***	0.08

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the students entered the school (i.e., schools in 2016 for the middle school GPA model and schools in 2019 for the high school GPA model).

GPA (All Building Blocks Entered Together)

	Middle School (N=346)	High School (N=306)
ICC (how much schools explain the outcome)	5%	12%
Intercept	2.52	2.83
Self-Care & Motor Skills	0.00	-0.12
Self-Regulation & Social Expression	0.05	0.14*
K-Academics	0.17*	0.05
Gender	0.28***	0.27***
Race/Ethnicity	***	***
African American	-0.47***	-0.61***
Asian	0.09	0.17
Hispanic	-0.42***	-0.45**
Other	-0.12	-0.06
English Learner	0.07	0.16
Special Education	0.06	0.17
Income	0.05**	0.06**
Single parent	-0.10	-0.09
Preschool	-0.08	-0.05

Note. Except for the schools, all predictors were measured in 2009. For schools, the year of schools that the students entered the school (i.e., schools in 2016 for the middle school GPA model and schools in 2019 for the high school GPA model).

APPENDIX I: STRUCTURAL EQUATION MODELING (SEM) RESULTS

The tables below show the final SEM results. After all factors were tested, any non-significant paths were removed to find the best-fitting model. As only continuous variables can be included as exogenous variables in SEM, dummy variables were created for race/ethnicity with White as the reference and the results of all race/ethnicity dummy variables are presented if any of the variables were significant. The paths between the scores were created in chronological order, which means that only earlier scores could be exogenous variables for later scores. For example, 8th grade SBAC scores could be predicted by all earlier scores, but 3rd grade CST scores could only be predicted by Kindergarten Academics. Preschool attendance was removed from both models and single parenting was removed from the MATH model as they were not a significant predictor for any of the scores.

ELA

	School Readiness	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
Gender	.20***	-	-	-	-	-
Race/Ethnicity						
African American	-.35*	-42.6*	-56.6***	-10.8	-38.2**	25.7*
Asian	-.13	9.6	-2.5	15.5*	8.4	3.6
Hispanic	-.26	-28.4*	-6.8	-19.6	-10.2	-12.6
Other	-.04	-22.4	-23.9	2.1	-4.2	0.9
English Learner (K)	-.07	-35.6***	-	-	-	16.6**
Special Education (K)	-.37*			-	-29.0**	-20.5+
Income	.06***	4.4*	5.1**	-	2.2+	-
Single parent	-	-	-	-	-	0.3*
School Readiness	-	26.9***	-	11.1*	-	-10.8*
3 rd CST	-	-	0.9***	0.3***	0.1**	0.2**
5 th SBAC	-	-	-	0.6***	0.4***	0.2***
6 th SBAC	-	-	-	-	0.4***	0.1***
7 th SBAC	-	-	-	-	-	0.6***

Note. The coefficients in this table indicate unstandardized coefficients, indicating the amount of change in the outcome by each unit of increase. +p<.10. *p<.05. **p<.01. ***p<.001.

Model Fit Statistics: RMSEA=0.000. CFI=1.000. TLI=1.002.

MATH

	School Readiness	3 rd CST	5 th SBAC	6 th SBAC	7 th SBAC	8 th SBAC
Gender	.20***	-	-17.3**	-	-	15.1*
Race/Ethnicity						
African American	-.37*	-75.8**	-35.1*	-9.2	-27.1*	-
Asian	-.11	20.5	-0.1	-6.9	14.3*	-
Hispanic	-.24*	-55.6***	-15.0	-32.8***	-10.7	-
Other	-.02	-25.2	-18.6	-8.9	-7.1	-
English Learner (K)	-	-	-	-	-	-
Special Education (K)	-.38**	-	-24.5+	-	-	25.3+
Income	.06***	7.4**	3.7*	-	3.1*	-
Single Parenting (K)	-	-	-	-	-	0.4*
School Readiness	-	40.2***	15.7**	13.2**	-15.9***	-
3 rd CST	-	-	0.6***	0.1**	0.2***	0.2**
5 th SBAC	-	-	-	0.8***	0.3***	-
6 th SBAC	-	-	-	-	0.5***	0.4***
7 th SBAC	-	-	-	-	-	0.7***

Note. The coefficients in this table indicate unstandardized coefficients, indicating the amount of change in the outcome by each unit of increase. +p<.10. *p<.05. **p<.01. ***p<.001.

Model Fit Statistics: RMSEA=0.000. CFI=1.000. TLI=1.011.

GPA

	School Readiness	Middle School GPA	High school GPA
Gender	.20**	.31***	-
Race/Ethnicity			
African American	-.44**	-.59***	-.21*
Asian	-.10	.13	.06
Hispanic	-.26	-.46***	-.16
Other	-.01	-.16	-.11
Income	.07***	.05***	-
School Readiness	-	.20***	-
Middle School GPA	-	-	.77***

Note. The coefficients in this table indicate unstandardized coefficients, indicating the amount of change in the outcome by each unit of increase. *p<.05. **p<.01. ***p<.001.

Model Fit Statistics: RMSEA=0.03. CFI=0.998. TLI=0.986.

APPENDIX J: LATENT GROWTH CURVE MODEL (LGCM) RESULTS

Using the LGCM framework, other factors measured in 2009 using PIF and KOF were tested for later academic outcomes. Given that associations of predictors with academic outcomes were similar across years, trajectories of SBAC ELA and Math scores and GPA over the years were tested against these factors. In these models, English Learner status and special education status of the same years as the outcomes, and absences and suspensions of the previous years of the outcomes were used to predict the next-year outcomes. Any potential interactions with linear and quadratic slopes were tested and only significant ones were included in the final models. The table below presents the final models of the three outcomes (SBAC ELA scores, SBAC MATH scores, and GPA). The detailed results are presented in separate additional tables that follow.

Table D. LGCM Models

	ELA	MATH	GPA
Grade Linear	●●●	●●●	●●●
Grade Quadratic (GPA only)	-	-	●●●
Gender	●	●	●●●
Race/Ethnicity	●●●	●●	●●●
Primary Language (K) (1=English, 2=Spanish, 3=Cantonese, 4=Other)	●	●●●	
Primary Language Development (K) (1=Delayed, 2=On Track, 3=Advanced)	●	●	
Same-Year English Learner Status			
Same-Year Special Education Status	●●●	●●●	●●
Absences in the previous year (4 th - 7 th)			
Suspended in the previous year (4 th - 7 th)			
Family Income (K)	●	●●	●●
Single Parenting (K)			
ECE Experience (K)			
School Readiness (K)	●●●	●●●	●●●
Family Engagement (K)	●●●	●●	●
Parental Depression (K)			
Parent's Coping and Support (K)		●	
Child Social and Emotional Development (K)			●●
Screen Time (K)			
Interactions			
Primary Language * Year Linear	●●●	●●●	
Single Parenting * Year Linear	●●●	-	
School Readiness * Parent Depression	●●		
School Readiness * Parent Coping & Support	●		
Race/Ethnicity * Year Linear	-	●●●	
Screen Time * Year Linear	●	●●●	
Special Education * Year Linear	-	-	●
School Readiness * Year Linear			●

Note. N=272-289. The number of circles indicate the significance levels. ●p<.05, ●●p<.01, ●●●p<.001. The empty cells indicate that the associations were not significant. Interactions were entered individually.

ELA

	Not Ready	Partially Ready	Fully Ready
Raw Average (5 th grade)	2446.4	2505.7	2545.0
Trajectories without control variables			
Mean of intercept***	2440.2	2504.4	2545.0
Mean of slope*	19.3	23.5	26.2
Trajectories with control variables			
Mean of intercept***	2494.8	2516.8	2529.3
Mean of slope*	18.3	22.5	26.2

For control variables, English Learner status and special education status (measured throughout the years from 2015 to 2018), gender, race/ethnicity, family income, single parenting, and ECE experiences (measured in 2009) were used.

MATH

	Not Ready	Partially Ready	Fully Ready
Raw Average (5 th grade)	2425.7	2501.3	2545.3
Trajectories without control variables			
Mean of intercept***	2421.2	2497.3	2543.3
Mean of slope**	14.3	24.5	27.8
Trajectories with control variables			
Mean of intercept***	2464.4	2504.7	2535.5
Mean of slope*	16.1	25.2	29.1

For control variables, English Learner status and special education status (measured throughout the years from 2015 to 2018), gender, race/ethnicity, family income, single parenting, and ECE experiences (measured in 2009) were used.

GPA

	Not Ready	Partially Ready	Fully Ready
Raw Average (6 th grade)	2.94	3.33	3.62
Trajectories without control variables			
Mean of intercept***	2.91	3.31	3.62
Mean of slope	-0.14	-0.05	-0.08
Mean of quadratic*	0.026	0.008	0.008
Trajectories with control variables			
Mean of intercept***	3.34	3.35	3.55
Mean of slope*	-0.15	-0.04	-0.09
Mean of quadratic**	0.029	0.004	0.009

For control variables, English Learner status and special education status (measured throughout the years from 2016 to 2022), gender, race/ethnicity, family income, single parenting, and ECE experiences (measured in 2009) were used.

APPENDIX K: FAMILY ENGAGEMENT

The four question sets in the following tables were used for a cluster analysis of family engagement. Families with high levels of engagement (n=126) tended to read books, tell stories or sing songs, do chores, play games, or play sports with their child at least 5 times a week on average. More families in this category read books or watched videos about kindergarten or transition to school; used libraries, zoos, museums, parks, and FRCs than the other groups; participated in parenting education classes or support groups; and tended to get help from extended families, neighbors, or friends.

Families with moderate levels of engagement (n=196) tended to read with their children about 5 times a week, but they tended to do other family activities about 3-4 times a week. More families in this group, however, attended a parent meeting or orientation, visited the school with child, and met their kindergarten teacher than the other group. The use of local resources was not as much as the families with high levels of engagement, but still high.

Families with low levels of engagement (n=183) reported doing all family activities less than 3 times a week overall and the majority did not get help from extended families or friends. Instead, 55% reported receiving WIC support. Also, only 37% reported attending a parent meeting or orientation, and only 32% reported having used local museums.

	High levels of engagement	Moderate levels of engagement	Low levels of engagement
n	126	196	183
How did you prepare your child for kindergarten before the first day of school?			
Attended a parent meeting or orientation***	56%	60%	37%
Visited the school with your child***	71%	82%	64%
Met your child's kindergarten teacher*	48%	52%	37%
Worked with your child on school skills***	68%	62%	47%
Child attended KIT Camp	4%	7%	5%
Child attended other summer kindergarten preparation program	10%	14%	15%
Read books or watched videos about kindergarten with your child***	52%	28%	31%
Read books or articles about your child's transition to school**	41%	26%	26%
In a typical week, how often do you or any other family member do the following things with your child? (Recategorized as 1: 0-2 times/week, 2: 3-4 times/week, 3: 5-6 times/week, 4: 7+ times/week)			
Read for more than 5 min***	3.6	3.1	1.7
Tell stories or sing songs together***	3.6	2.8	1.6
Involve your child in household chores***	3.6	2.7	1.5
Play games***	3.3	2.0	1.5
Play sports***	3.0	1.5	1.5
In the last year, what types of local family resources have you used?			
SF Public Library***	87%	73%	63%
SF Zoo***	79%	75%	60%
Local museum(s)***	73%	64%	32%
Local parks***	95%	92%	79%
FRCs**	18%	14%	7%
RAR	10%	13%	7%
What kinds of parenting programs, services, or supports have you received?			
Home visits from a nurse, community worker, or other provider	10%	13%	8%
WIC***	27%	28%	55%
Regular medical check-ups while pregnant***	80%	66%	56%
Help from extended family***	64%	47%	26%
Help from neighbors and/or friends***	59%	38%	14%
Parent education classes***	29%	19%	9%
Parent support groups***	16%	9%	4%

*p<.05. **p<.01. ***p<.001.

As illustrated in the following table, these three groups were very different in their demographics including their race/ethnicity, English Learner status, single parenting status, ECE experiences, maternal education, family income, whether parent was born in the U.S., and primary language. In short, parents of families with high levels of engagement tended to be wealthier, have been born in the U.S., and have achieved higher education, compared to parents of families with low levels of engagement. Children of families with high levels of engagement tended to speak English, not to be English Learner, have both parents, and attended other types of preschools than PFA. There was no difference in gender or special education status.

	High levels of engagement	Moderate levels of engagement	Low levels of engagement
n	126	196	183
Gender			
Male	48%	46%	45%
Female	52%	54%	55%
Race/ethnicity***			
African American	11%	7%	6%
Asian	26%	42%	54%
Hispanic/Latino	18%	23%	28%
White	36%	21%	6%
Other	9%	6%	6%
English Learner status***			
Not EL	78%	59%	30%
EL	22%	41%	70%
Special education status			
Not special education	94%	91%	92%
Special education	6%	9%	8%
Single parenting status***			
Not single parenting	83%	78%	65%
Single parenting	17%	22%	35%
ECE experiences***			
No preschool	21%	9%	17%
PFA	19%	36%	49%
Other preschool	60%	55%	34%
Maternal education***			
High school or less	13%	28%	55%
Some college or Associate's degree	28%	26%	29%
Bachelor's degree or higher	59%	45%	16%
Family income***			
\$0-\$31,999	27%	36%	53%
\$32,000-\$84,999	29%	23%	36%
\$85,000-\$125,999	22%	14%	7%
\$126,000+	21%	27%	4%
Parent born in the U.S.***			
Yes	66%	47%	18%
No	34%	53%	82%
Primary language***			
English	79%	57%	26%
Spanish	8%	16%	25%
Cantonese	3%	15%	37%
Other	10%	12%	12%

APPENDIX L: LGCM RESULTS OF ALL FACTORS

	ELA	MATH	GPA
N	289	289	272
Variance			
Within-Subjects	1328.0***	1345.4***	0.09***
Between-Subjects (Intercept)	2928.7***	2294.0***	0.11***
Between-Subjects (Slope)	133.3***	436.7***	0.02***
Covariate between Intercept and Slope	159.0	464.0***	0.01
Between-Subjects (Quadratic)			0.0006***
Covariate between Intercept and Quadratic			-0.004**
Covariate between Slope and Quadratic			-0.003**
Intercept	2592.4***	2563.9***	3.75***
Grade Linear	23.2***	25.5***	-0.07***
Grade Quadratic (GPA only)	-	-	0.01***
Gender (Male vs. Female)	-18.2*	17.4*	-0.24***
Race/Ethnicity (Reference: White)	***	**	***
African American	-99.6***	-62.0***	-0.53***
Asian	-15.3	-10.8	-0.06
Hispanic	-38.1*	-30.7*	-0.32**
Other	-31.5*	-26.9	-0.15
Primary Language (K) (Reference: English)	*	***	
Spanish	-28.8	-9.1	-0.05
Cantonese	32.0*	54.7***	0.17*
Other	10.1	24.0	0.05
Primary Language Development (K) (Reference: Advanced)	*	*	
Delayed	-34.5*	-35.1*	0.01
On Track	-26.1**	-20.4*	-0.07
Same-Year English Learner Status	-13.1	-11.3	-0.05
Same-Year Special Education Status	-49.3***	-38.6***	-0.18**
Percent being absent in the previous year (4 th -7 th)	-0.9	-0.6	0.00
Suspended in the previous year (4 th -7 th)	16.9	-12.3	0.15
Family Income (K)	4.4*	6.3**	0.04**
Single Parenting (K)	15.1	10.6	0.01
ECE Experience	6.2	-2.7	-0.01
School Readiness (K)	28.7***	42.0***	0.23***
Family Engagement (K)	***	**	*
Low Engagement	-41.4***	-30.2**	-0.15*
Moderate Engagement	-28.3**	-27.6**	-0.18**
Parental Depression (K)	-10.2	-11.8	0.00
Parent's Coping and Support (K)	-6.9	-16.0*	0.04
Child Social and Emotional Development (K)	5.9	0.5	-0.18**
Screen Time (K)	-2.2	-1.2	0.00

Note. All continuous variables and dummy variables are centered to the means except for year variables.

APPENDIX N: DEMOGRAPHIC PROFILES OF STUDENTS WHO REPEATED A GRADE

The following table shows the differences in demographic profiles depending on when students repeated a grade. Due to the small numbers, statistical power was low for the analyses. The only significant difference was found in English Learner status: **Those who repeated kindergarten tended to be English Learners.**

Although not significant, there were some noticeable differences in race/ethnicity, primary language in kindergarten, ECE experience, chronic absenteeism, and suspension. It seems that most who repeated kindergarten were Hispanic/Latino or Asian whose primary language was not English. Those who repeated a year in high school were more likely to be female African Americans whose primary language was English. Although their other demographic profiles were similar, more students in this category showed high levels of family engagement in kindergarten. Also, although all three groups showed high percentages of chronic absenteeism, those who repeated a grade in high school showed even higher chronic absenteeism, particularly in high school (91%). Moreover, a higher percentage of those who repeated a grade in elementary or middle were suspended in middle school (67%). In addition, although the percentages are similar across these three groups, it is important to note that the percentages of special education, the percentages of low income (less than \$32,000), and the percentages of single parenting are all higher than in the broader Kindergarten Readiness Cohort. **These findings suggest that repeating kindergarten is associated with not being ready for school and having difficulties with English, whereas repeating later grades is associated with behavioral issues or attendance problems in the context of having more difficulties with special needs and socioeconomic issues.**

Table E. Demographic Profiles, Absences, and Suspensions by When a Grade Was Repeated

Factor		Repeated K (N=13)	Repeated in ES or MS (N=9)	Repeated in HS (N=14)
Gender	Female	39%	22%	57%
	Male	62%	79%	43%
Race/Ethnicity	African American	0%	11%	39%
	Asian	31%	33%	0%
	Hispanic/Latino	62%	33%	39%
	White	8%	11%	15%
	Other	0%	11%	8%
Primary Language (K)	English	23%	67%	64%
	Spanish	46%	22%	36%
	Cantonese	23%	11%	0%
	Other	8%	0%	0%
English Learner Status*	Not English Learner in K	23%	78%	64%

	English Learner in K	77%	22%	36%
Special Education	Not in Special Education in K	69%	56%	79%
	In Special Education in K	31%	44%	21%
Single Parenting (K)	Not Single Parenting	38%	40%	44%
	Single Parenting	63%	60%	56%
ECE	No ECE	46%	22%	21%
	PFA	39%	56%	43%
	Other Preschool	15%	22%	36%
Family Income (K)	\$0-\$31,999	88%	60%	78%
	\$32,000-\$84,999	13%	20%	11%
	\$85,000-\$125,999	0%	20%	0%
	\$126,000+	0%	0%	11%
Family Engagement (K)	Low	67%	33%	33%
	Moderate	33%	67%	17%
	High	0%	0%	50%
Chronic Absenteeism	Chronic Absenteeism at Least One Year	77%	67%	93%
	Chronic Absenteeism in ES	50%	33%	36%
	Chronic Absenteeism in MS	42%	33%	36%
	Chronic Absenteeism in HS+	50%	63%	92%
Suspension	Suspended at Least Once	23%	44%	36%
	Suspended in ES	8%	11%	14%
	Suspended in MS*	8%	67%	27%
	Suspended in HS	8%	25%	25%

Note. N=15-36. *Statistically significant at $p < .05$. Due to the small sample size, marginal significance is also presented ($+p < .10$).

APPENDIX O: GLM RESULTS FOR GRADUATION ON TIME

Variable	B	Exp(B)
Intercept	2.15	8.58
Gender	1.07*	2.92
Race/Ethnicity (Reference=White)		
African American	2.31*	10.04
Asian	2.61*	13.58
Hispanic	1.64	5.15
Other	3.13*	22.84
English Learner (K)	0.01	1.01
Special Education (K)	-1.81**	0.16
ECE Experience	0.87	2.39
Income	0.32	1.38
Single parent	-0.95	0.39
School Readiness (Reference=Fully Ready)	**	
Not Ready	-3.13**	0.04
Partially Ready	-2.49**	0.08
Suspended Ever	-1.51*	0.22
Chronically Absent Ever	-0.95	0.39

APPENDIX P: A CLOSER LOOK AT NOT-READY STUDENTS WHO BEAT THE ODDS

Due to the small number of people who “beat the odds”, some statistical tests did not have enough power to detect differences, particularly in chi-square tests (where differences in frequencies are tested). In the table below, the only significant difference between Not Ready students who graduated on time and those who repeated a grade was their suspension history.

Half of those who repeated a grade had been suspended at least once, whereas only 22% of those who graduated on time had been suspended. Although the tests were not significant, slightly higher percentages of students graduated on time when they were female; when they were African American or White; when they spoke Spanish; when they were English Learner; when they were never in special education; when they lived with both parents; when they attended ECE; and when they were never chronically absent. There were no meaningful differences in family income or family engagement level.

Table F. Sociodemographic Profiles, Absences, and Suspensions among Not Ready Students by Graduation on Time

Factor		Not Ready Students Who Graduated on Time (N=32)	Not Ready Students Who Repeated a Grade (N=18)
Gender	Female	44%	33%
	Male	56%	67%
Race/Ethnicity	African American	23%	11%
	Asian	26%	33%
	Hispanic/Latino	45%	39%
	White	0%	11%
	Other	6%	6%
Primary Language (K)	English	34%	50%
	Spanish	41%	28%
	Cantonese	13%	17%
	Other	13%	6%
English Learner Status	Never English Learner	38%	56%
	English Learner	63%	44%
Special Education	Never in Special Education	56%	50%
	In Special Education	44%	50%
Single Parenting (K)	Not Single Parenting	61%	33%
	Single Parenting	39%	67%
ECE	No ECE	19%	39%
	PFA	56%	39%
	Other Preschool	25%	22%
Family Income (K)	\$0-\$31,999	61%	67%
	\$32,000-\$84,999	39%	22%
	\$85,000-\$125,999	0%	11%
	\$126,000+	0%	0%

Family Engagement	Low	58%	50%
	Moderate	32%	33%
	High	11%	17%
Chronic Absenteeism	No Chronic Absenteeism	41%	28%
	Chronic Absenteeism at Least One Year	59%	72%
Suspension*	Never Suspended	78%	50%
	Suspended at Least Once	22%	50%

Note. N=32-50. *p<.05.

There were few differences in family factors and academic performances between these Not Ready students who graduated on time and those who repeated a grade.

	Not Ready Students Who Graduated on Time (N=32)	Not Ready Students Who Repeated Grade (N=18)
Parental Coping & Support	3.3	3.2
Parental Depression	1.8	1.9
Child Social Emotional Development	2.8	2.7
Screen Time	2.6	2.0
CST ELA 3rd	307	304
SBAC ELA 5th*	2466	2403
SBAC ELA 6th	2472	2439
SBAC ELA 7th	2490	2483
SBAC ELA 8th	2518	2523
CST MATH 3rd	361	323
SBAC MATH 5th	2436	2409
SBAC MATH 6th	2443	2421
SBAC MATH 7th	2471	2517
SBAC MATH 8th	2490	2452
Middle School GPA	2.8	3.2
High School GPA	2.9	2.7

Note. N=31-50. *p<.05.

APPENDIX Q: ENGLISH LEARNER STATUS CHANGES AND OUTCOMES

	Never EL	EL in ES only	EL in ES and MS	EL in ES, MS, and HS
GENDER	252	199	33	28
Female	48.8%	53.3%	42.4%	57.1%
Male	50.8%	46.7%	57.6%	42.9%
Other	0.4%	0.0%	0.0%	0.0%
ETHNICITY***	239	196	31	28
African American	18.8%	0.5%	0.0%	0.0%
Asian	26.8%	62.2%	29.0%	17.9%
Hispanic/Latino	11.3%	32.1%	58.1%	75.0%
White	31.8%	3.1%	6.5%	3.6%
Other	11.3%	2.0%	6.5%	3.6%
PRIMARY LANGUAGE (K)***	252	199	33	28
English	87.3%	10.1%	3.0%	10.7%
Spanish	3.2%	29.1%	60.6%	71.4%
Cantonese	4.0%	45.2%	24.2%	3.6%
Other	5.6%	15.6%	12.1%	14.3%
PRIMARY LANGUAGE DEVELOPMENT (K)***	242	160	29	21
Delayed	11.6%	7.5%	34.5%	19.0%
On track	61.2%	80.6%	65.5%	61.9%
Advanced	27.3%	11.9%	0.0%	19.0%
SPECIAL EDUCATION STATUS***	252	199	33	28
Never in Special Education	75.8%	92.0%	33.3%	64.3%
In Special Education	24.2%	8.0%	66.7%	35.7%
SCHOOL READINESS	251-252	194-199	33	27-28
Overall Average**	3.34	3.31	3.02	3.00
Self-Care & Motor Skills	3.48	3.58	3.38	3.32
Self-Regulation & Social Expression*	3.27	3.22	2.93	3.00
K-Academics***	3.44	3.33	3.01	2.77
SINGLE PARENTING (K)	202	163	27	15
Not Single Parenting***	82.2%	70.6%	44.4%	26.7%
Single Parenting	17.8%	29.4%	55.6%	73.3%
FAMILY INCOME (K)***	188	155	24	15
\$0-\$31,999	26.1%	54.2%	87.5%	86.7%
\$32,000-\$84,999	26.1%	31.6%	8.3%	13.3%
\$85,000-\$125,999	22.3%	8.4%	4.2%	0.0%
\$126,000+	25.5%	5.8%	0.0%	0.0%
ECE EXPERIENCE ***	252	199	33	28
No Preschool	16.3%	13.6%	24.2%	21.4%
PFA	27.4%	57.3%	54.5%	53.6%
Other Preschool	56.3%	29.1%	21.2%	25.0%
FAMILY ENGAGEMENT***	176	146	24	5
Low Engagement	19.3%	55.5%	62.5%	80.0%
Moderate Engagement	44.3%	34.9%	33.3%	20.0%
High Engagement	36.4%	9.6%	4.2%	0.0%
OTHER FAMILY OR CHILD FACTORS	202-203	157-169	25-28	11-16
Social Emotional Development***	3.08	2.79	2.77	2.49
Parental Depression**	1.55	1.73	1.66	2.00
Parental Coping & Support***	3.64	3.51	3.47	3.05

Outcomes	Never EL	EL in ES only	EL in ES and MS	EL in ES, MS, and HS
ELA	211-227	176-197	26-30	13-20
CST 3 rd ***	381.0	358.7	277.8	273.9
SBAC 5 th ***	2527.0	2527.7	2408.5	2387.5
SBAC 6 th ***	2556.4	2551.3	2408.8	2410.2
SBAC 7 th ***	2588.3	2590.6	2445.6	2433.2
SBAC 8 th ***	2601.6	2609.6	2463.5	2492.9
MATH	210-229	177-197	27-30	13-20
CST 3 rd ***	429.2	442.2	319.7	314.2
SBAC 5 th ***	2515.8	2528.8	2423.8	2394.9
SBAC 6 th ***	2546.7	2546.7	2434.6	2372.6
SBAC 7 th ***	2575.8	2591.3	2441.8	2417.8
SBAC 8 th ***	2597.8	2616.9	2459.4	2436.4
GPA	198-219	181-183	30-31	17-21
Middle School GPA (6 th – 8 th) ***	3.41	3.45	3.03	2.45
High School GPA (9 th – 12 th) ***	3.20	3.40	2.97	2.74
SUSPENSION	200-250	179-199	31-33	22-27
Suspended in ES*	4%	0%	3%	0%
Suspended in MS***	9%	2%	13%	22%
Suspended in HS***	9%	1%	13%	27%
CHRONIC ABSENTEEISM	200-250	179-199	31-33	22-27
Chronically absent in ES*	16%	7%	9%	22%
Chronically absent in MS*	13%	5%	10%	22%
Chronically absent in HS***	42%	24%	39%	59%
GRADUATION ON TIME***	188	173	32	22
Graduated on time	90%	95%	88%	68%
Repeated grade or failed	10%	5%	13%	32%

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