CALIFORNIA MTSS Research Consortium

UCLA Center for the Transformation of Schools

The Economic Benefits of Equity Across California Schools

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INTRODUCTION

California's school students face a number of challenges that have been greatly exacerbated by the pandemic. Low public funding statewide, compounded over many years, has meant slow growth in learning and educational productivity, which has exacerbated educational gaps as disadvantaged and minority students lag far behind their peers across California's K-12 system.

There is a compelling need for additional investments in education to address these challenges to improve long-term educational and economic outcomes. As we demonstrate here, investments in education are critical for the students, the education system, and California's economic future.

To improve student learning and engagement in school and beyond, the California Multi-Tiered System of Support (CA MTSS) was enacted to strengthen comprehensive support services provided through school. CA MTSS was designed to meet the needs of all California students through a tiered framework, in which services are provided to target specific goals and identified areas of need in each school.

A first step in designing effective support systems is to understand the economic consequences of the issues facing California's public school system and understanding where the prevalence of educational inequities are within the system. This brief summarizes our economic analysis of three specific—and related—issues facing California's public school system: students' failure to complete high school, chronic absenteeism, and disciplinary infractions.[1] We identify substantial benefits if there are improvements across any of these domains. Improvements might be general—affecting all students—or they might be targeted—reducing gaps by race or level of disadvantage.

High school completion is the most economically important educational milestone for students. Failure to complete high school significantly jeopardizes economic

1 Full details, including citations, are given in an accompanying Technical Report.

well-being; it also has deleterious social impacts. Across California public schools, 13% of students withdraw from high school. But the rate is far higher for African American and Hispanic students (20% and 15%, respectively); and it is even higher for disadvantaged groups: foster children, disabled students, homeless students, and English Language learners (with rates between 25% and 36%). Many individuals who withdraw from high school will not have the opportunity to go to college and will face obstacles in becoming economically secure.

Attending school is essential for building human and social capital. Yet, increasingly too many students are chronically absent—they are failing to acquire the most fundamental skills for success in adulthood. In 2019, one in 10 California public school students was absent for more than 10% of the school year. But by 2022, this rate was almost one in three. Again, absenteeism is stratified: Far more African American and Hispanic students are chronically absent (43% and 36%); and rates for disadvantaged groups are stark (at 34–45%). On an extremely conservative calculation, approximately 5% of all student time in California is simply missing *(McNeely et al., 2023).*

Disciplinary action bars students from learning at school. Suspensions, restraints, and expulsions affect a subset of students but the consequences are often dramatic. Each year, 233,800 students (4%) are suspended and 3,300 are expelled. Again, these disciplinary sanctions are not evenly spread across students. Suspensions are strikingly higher for: African American students—the rate is almost four times that of any other racial group; males—the rate is double that of females; and for disadvantaged students—with one-quarter of foster youth and one in 12 youth experiencing homelessness suspended each year. Many of these students will struggle to complete school and may become tracked into the state's institutional or carceral systems.

Across these three domains, there are significant inequities. But there are also significant economic consequences: Too many resources are wasted on addressing consequences and too few resources are allocated to prevent these inequities in the first place. Using an economic model, we calculate the resource benefits of graduating high school, of not being chronically absent, and of not being suspended or expelled *(for a detailed exposition of this model, see Belfield and Levin, 2007).* We look at the benefits to the student, the school system, and the state of California. We report all calculations in 2023 dollars and as lump sum present values at age 18.

ECONOMIC BENEFITS TO CALIFORNIA

The economic benefit of completing high school compared with not completing is derived from the strong, lifetime association between education and earnings, health status and crime, as well as tax and economic growth impacts.

Using research evidence, we calculate the economic returns to being a high school graduate compared with withdrawing. (Full details on these calculations are given in a companion report [Belfield et al., 2023] and a summary is available in the appendix.)

From a social perspective, the benefit per high school graduate is $480,000 over a lifetime. This is the amount of resources gained when California students graduate from high school instead of withdrawing. The economic burden related to students withdrawing from high school without graduating is high. The burden reflects lost earnings, which has implications for the individual and society, as well as worse health and greater spending on crime.

As a thought experiment, imagine a California student entering high school. If that student receives an education that ensures high school graduation rather than not completing, the result is a saving of almost half a million dollars for the state of California.

From a taxpayer perspective, new high school graduates result in higher revenues and lower government spending to the amount of $148,000 over the life course. This is the dollar amount that the California state treasury (accounting for federal flows) gains per high school graduate. Purely in terms of taxes, high school graduation generates a significant payoff.

Finally, becoming a high school graduate generates extra earnings of $358,000 over the life course of an individual. Graduates also have better health and are less involved in the criminal justice system. Even as the causes of high school noncompletion are many and complex *(Rumberger, 2011),* the economic case for graduation is extremely strong.

Given the substantial economic gains, there are strong incentives to raise high school graduation rates across the state. If this rate could be increased statewide by three percentage points—to match the national average—then California would have 20,000 additional graduates each year. Expressed as a lump sum at the time of graduation for an additional 20,000 youth, the economic value would be $9.57 billion added to the resources of California and $2.95 billion added to tax revenues in California. And if policies were targeted to support students from disadvantaged backgrounds, this push for increased graduation rates would further reduce inequities within the California workforce.

The economic benefits of reduced absenteeism and school discipline are extensive. For these two domains, there are benefits in five categories: (1) student lifetime gains because of higher attainment; (2) family savings because they no longer need to respond to absence or suspension/expulsion; (3) direct savings in school spending; (4) educational spillovers within schools (e.g., on teacher turnover); and (5) educational externalities on peer students' learning. Each of these five benefits is costed out using California data and from interviews with leaders in California public schools.

Figure 1. Economic Benefit Per New High School Graduate (Present Value at age 18)

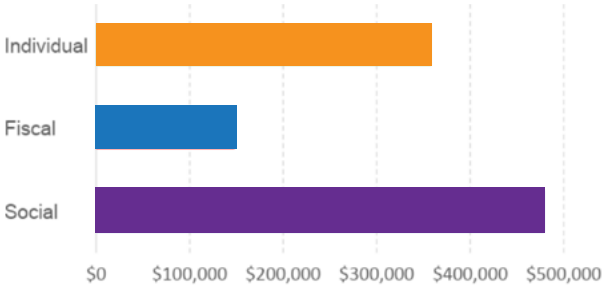
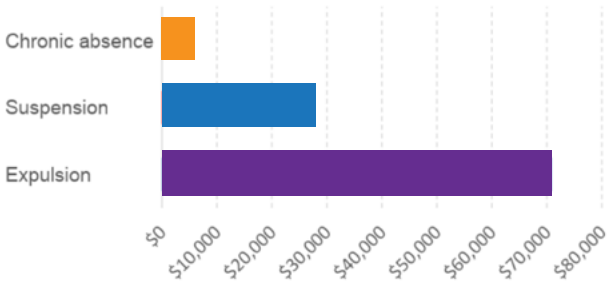


Figure 2. Economic Benefit Per Case (Present Value at age 18)



From a social perspective, i.e., including all five categories, the benefit from no longer being chronically absent is $5,600 per student annually. Strikingly, almost one-third of students were chronically absent in 2022. So the aggregate economic consequence of absenteeism is over $1.9 billion each year. Each absentee costs the family $3,800 (in expenses and time). Also, based on our interviews in California schools, absenteeism raises direct and indirect school spending by $1,000; this equates to over $340 million each year. Reducing absenteeism would yield substantial economic benefits: Vast numbers of students are simply missing from school, and each absence is costly.

For student discipline, the social benefits vary by type of discipline. The social benefit per averted suspension is $27,300; much of this is the gain in attainment but there are also sizable benefits to families and the school system. Expulsions cost significantly more than suspensions; the benefits of avoiding expulsion are therefore much greater: The full social benefit is $71,000 per student no longer expelled. Again, families pay a heavy burden: They must spend time supervising their children and in resolving disciplinary disputes. As these disciplinary sanctions are imposed more frequently on disadvantaged/minoritized students, these families are disproportionately burdened.

There are also significant impacts on school expenditures, ranging from $1,000 to $12,800 per disciplinary case. Critically, interviews with California schools revealed the unstructured and varied allocation of school resources for school discipline. There are several contributory factors. First, principals have considerable flexibility in how they address disciplinary infractions. Each disciplinary case involves nine stages from identification to school re-entry; at each stage there is potential for discretion. Thus, although there is an average benefit per averted case, it is more accurate to distinguish high-cost and low-cost suspensions. Second, the resources required to deal with discipline are not fully counted: Direct budgets for discipline are insufficient, with much of the resource being reallocated from instructional time, and students are not tracked to see how suspension affects future instructional and support services. Finally, there is the well-documented stratification of disciplinary practices; this affects all students in schools where disciplinary problems are common. Often these are schools with high levels of disadvantage or majority-minority student populations. Further economic analysis of school discipline—and what resources might be saved by different agents—is a priority.

In aggregate, the economic social benefit if absenteeism and discipline were eliminated across the California public school system is estimated at $3.5 billion annually. Of course, full elimination is not possible but if rates of discipline were equalized to the level of white students, then the gains would be $0.8 billion. Much of this gain would arise from reducing suspensions: Each suspension is costly and California suspends almost one-quarter of a million students each year.

We do not know what resources would be needed to increase the high school graduation rate, reduce absenteeism, or to change the disciplinary system. The resources needed will likely depend on family circumstances, school quality, and community deprivation. However, the size of the economic benefits strongly indicates that California should investigate reforms across each of these domains.

ECONOMIC EQUITY BURDENS AND K-12 FUNDING IN CALIFORNIA

This evidence on inequity burdens within schools is informative about K-12 funding in California. Recent reforms to California's school funding formula are intended to close resource and achievement gaps between student groups. Even as these reforms are effective, they are likely to be inadequate to fully offset inequity burdens.[2]

Primarily, these burdens are so economically meaningful that current school funding allocations are almost certainly deficient. Research studies consistently find that California does not invest enough to compensate for disadvantage. At most, the state allocates 18% of its funds ($13 billion) based on student need. On average, English learners and high-need students are allocated respectively $500 and $1,250 more per year. Most recently, the governor's 2023 budget includes an "equity multiplier" of $300 million for high-need students. This funding is helpful, but our estimate of the school-level budgetary impacts of absenteeism and disciplinary sanctions are—at $560 million annually—significantly higher (and this amount does not count every source of inequity). Per student the equity multiplier is $800; this is far below the estimated school-level inequity burden per chronic absentee or per suspended/expelled student (at $1,000–$15,000).

As well, these burdens reinforce the need for funds to be accurately allocated to disadvantaged students. Here too, research studies find that funding is imperfectly targeted and so the impact of compensatory funding is blunted. One reason targeting is inaccurate is because the funding formula does not adequately recognize peer effects: Absenteeism and disciplinary sanction impose

2 Analysis and data for this section is from: https://gettingdowntofacts.com/sites/default/files/2018-09/GDTFII_Brief_LCFF_Effects.pdf; https://www.ppic.org/publication/financing-californias-public-schools; https://gettingdowntofacts.com/sites/default/files/GDTFII_Report_Levin.pdf; https://lao.ca.gov/reports/2023/4700/Equity-Multiplier-Accountability-022323.pdf; https://www.ppic.org/publication/understanding-the-effects-of-school-funding/

resource burdens across all students, not just those who are absent/disciplined. These peer burdens are substantial and yet they are only weakly incorporated into California's Concentration Grants. Another source of inaccuracy is that compensatory funding is mostly allocated at the district level and is not directly targeted to schools according to their proportion of high-need students.

This deficiency and inaccuracy can be modeled by comparing need-driven funding to estimated equity burdens. These models look only at the burdens from absenteeism and disciplinary sanction (and include only direct school costs). They illustrate the importance of optimal K-12 funding to address economic inequities across California.

Funding deficiency is calculated as the equity burden as a percentage of the total compensatory funding for selected groups of students. For example, African American students are funded $1,280 more than white students, but because of their higher rates of absenteeism and disciplinary sanction (as well as elevated rates at their schools), their schooling costs $350 more on average. Therefore, the equity burden—from these two sources alone—is 27% of their entire need-driven funding. These percentages are also high for other selected groups. For Hispanic students, the equity burden equates to 18% of need-driven school expenditures and for low-income students, it is 24%. For English Learners, the equity burden equates to 46% of extra funding: Although the equity burden for this group is modest, their compensatory funding is low. Overall, extra funding for disadvantaged groups modestly "covers" these two inequity burdens. Critically, these calculations show how little resource remains to address the ostensible goals of closing gaps in achievement and high school graduation.

Funding inaccuracy is calculated as the resource gaps when compensatory resources are allocated at the district level instead of the school level. Looking at suspensions, most districts have some schools with above-average suspension rates. If schools receive funding based only on the district-wide average suspension rate, these schools will be allocated too little resource: In effect, some of their suspensions will be "unfunded." These numbers can be derived from school-level and district-level suspension rates for 2019–20. Assuming funds are based only on districtwide averages, 24% of school suspensions would be "unfunded." Therefore, the economic equity burden of inaccurate targeting of resources for school suspensions is over $60 million annually. Inaccurate funding is even worse within groups: For African American students, over 45% of suspensions would be unfunded; for Hispanic students, the rate is 28%; for English Learners, 28%; and for economically disadvantaged students, 32%. Overall, district-level funding would mean that one-quarter of the inequity burden is essentially discounted.

Finally, based on statewide demographic and economic trends, these inequity burdens are likely to grow faster over coming decades. The overall population of California is 33% white; the school population is less than 25% white, with Hispanic students representing over half of all students. Also, economic forces are polarizing communities. Imagine a community with a high economic inequity burden in 2023. This community will likely have: a smaller local tax base (from which to raise funds for public education); fewer economic opportunities to motivate students to acquire skills; and fewer family resources to support education. In effect, this community faces dwindling resources but growing burdens. Finally, schools received a one-time boost of $21 billion in federal funding to cover pandemic-related burdens. Although COVID-19 transmission may have waned, the resource burdens on schools —particularly in areas where COVID-19 infection was severe—remain (e.g. staffing shortages,

lost learning). Without adequate compensatory funding, the local schools in such a community will have high rates of absenteeism and disciplinary sanction, imposing more adverse externalities onto all students (and leading to school switching by more affluent families). Thus, inequity burdens are likely to be entrenched and be compounded onto future generations of K-12 students.

CONCLUSION

Reforms to California's schools need to reflect a multi-tiered system of support. The three challenges analyzed here are not separable: Schools with the most discipline and absenteeism problems tend to have the highest withdrawal rates. High school students who are absent and violate school rules are more likely to have poor achievement and to withdraw from school *(Liu, Lee, and Gershenson, 2021).* Moreover, these issues are not just about a few target students: School culture is important. Policies that relax school discipline improve student achievement and decrease truancy rates *(Lacoe and Steinberg, 2018; Pope & Zuo, 2023),* and these gains—mediated via the quality of student-teacher relationships and perceptions of school safety—affect all students *(Craig and Martin, 2019).* Finally, equity and efficiency are interlinked: Schools with systemic discipline and absenteeism—leading in turn to high school failure—also tend to disproportionately serve disadvantaged and minority student groups *(Bacher-Hicks et al, 2019).* Overall, multi-tiered reforms—to boost high school completion and reduce absenteeism and disciplinary problems—can be both efficient and equitable.

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APPENDIX: THE ECONOMIC MODEL

A.1. Model Structure

The economic model is structured based on benefit-cost analysis (Boardman et al., 2018; Levin et al., 2018). Under this framework, we estimate the economic burden of each student outcome (high school graduation, chronic absenteeism, suspensions, physical restraints, and expulsions) based on California educational statistics. Each student outcome is multiplied by its respective shadow price to determine its associated economic burden.

Shadow prices are based on the willingness to pay for the following groups: families; society (California citizens); and fiscal (California taxpayers). In addition, we derive the impact on school budgets. All shadow prices used in the estimation of the economic burdens are taken from established research and findings in the literature. The model derives the economic consequences of the observed educational outcomes in California; it does not calculate how these consequences might be reduced.

Throughout, to ensure comparability across years, all monetary amounts are expressed in 2023 dollars and are converted to present values using a 3.5% discount rate. Furthermore, prices are adjusted to account for the cost of living in California.

Table A1: Lifetime Trajectories by Education Level

	HS Dropout	HS Graduate	HS+ College
Earnings	$349,120	$707,220	$908,940
Federal tax	$53,960	$103,340	$142,500
State/local tax	$47,920	$78,100	$91,680
Health spending: federal	$43,430	$26,070	$17,030
Health spending: state/local	$35,330	$21,020	$14,780
Health gain: social	$-	$26,100	$43,350
Crime spending: federal	$10,740	$3,340	$2,690
Crime spending: state/local	$42,940	$13,150	$10,690
Crime social burden	$99,950	$28,070	$22,460
Productivity spillovers	$21,240	$39,880	$54,380
Marginal Excess Tax Burden	$12,520	$23,330	$31,060
Welfare spending: federal	$9,640	$7,660	$5,410
Welfare spending: state/local	$6,690	$4,730	$3,660
Education spending: federal	$-	$720	$20,990
Education spending: state/local	$-	$6,880	$4,430
Education spending: private	$-	$-	$25,930

Sources: detailed below. *Notes:* Present values at age 18; discount rate 3.5%. 2023 dollars.

A.2. Shadow Price: High School Graduation

Students not completing high school has economic and social consequences for the students, for taxpayers and for the state of California. This economic value is calculated using the substantial and compelling evidence on the economic and social gains from high school graduation relative to withdrawing. High school graduates, even those without any college experience, earn significantly more than students who fail to complete high school. These forgone earnings make up the bulk of the economic burden of a high school graduate. In addition to differences in earnings potential, high school graduation has been found to be associated with better health outcomes, lower crime participation, among others.

All of these gains are monetized using a life-course model to calculate the expected gains from high school graduation relative to high school withdrawal. The model accounts for all the resource flows attributable to each educational status over an individual's working life. Table A1 details the full results and calculations (including sources) for the expected gains from graduation. This estimate for California is similar to that from Vining and Weimer (2019); adjusting for inflation and California prices, the estimates vary by <10%.

A.3. Shadow Prices: Absenteeism and Disciplinary Sanction

Absenteeism and disciplinary sanctions absorb substantial resources that could be directed toward other educational outcomes and/or policies. We consider the burdens imposed by absenteeism and disciplinary sanction to the following five categories, all of which are assigned a dollar value based on its opportunity cost:

1. Student lifetime losses because of lower achievement and attainment

Student losses due to absences and discipline are mediated through high school graduation. When absenteeism or disciplinary sanctions are high, students are more likely to drop out of high school. Thus, the economic burdens from failing to graduate from high school (as identified above) can be partially attributed to absenteeism and to disciplinary sanctions. Applying relationships from Losen and Martinez (2020b), high school graduation rates are lower by: 8% per chronic absentee; 12% per suspended student; and 27% per expelled student. Given the shadow prices for a high school graduate estimated in Table A1 and baseline graduation rates of 87% for the state of California, the shadow prices for student losses are calculated. These are expressed as present values at age 12 for each impacted student over their grades 6–12.

2. Family burdens to address related impacts

Family impacts derive from the resources families use to support their child. These family supports include time at home to supervise children either absent, suspended, or expelled from school. Conventionally, time valuation is used to calculate the economic value of these family supports (Levin et al., 2018). Based on the opportunity cost of parental time, each day without schooling is shadow priced at $80–$100. In addition, families must spend time negotiating with the school regarding absenteeism and discipline. These are also shadow priced based on parental opportunity cost of time. This time is estimated at $30 per absenteeism case and $80 per suspension.

3. School burdens

School burdens are the resources expended by educational professionals to address absenteeism and disciplinary cases. Absenteeism resources are derived from expenditures on education personnel tasked with supervising attendance. These resources include: teacher time; senior school management time; and professional time from outside the school (e.g., counselors). This time is estimated as a function of the severity of the discipline. As well, some students will be reassigned to new schools (or other facilities such as juvenile detention centers): The costs of reassignment are counted (including any net extra resources between the transfer and receiving schools). Finally, we estimate the cost of missed school days by students as society's willingness to pay (WTP) for a day of school that is proxied by public dollars allocated per day of school — which is the amount society considers a day of school to be worth.

4. Educational externalities within schools

Teachers who work in schools with high rates of disruption require "compensating wage differentials" compared to teachers in schools with less disruption. This extra pay is a spillover effect (externality). Often these compensations are not paid and instead teacher turnover increases: Schools must then pay recruitment and training costs. These burdens are extra: The resources are not allocated

to improve student outcomes but are in response to an education system with high rates of absenteeism and disciplinary infractions.

5. Educational externalities on peer students

When students are absent and disruption is high, other peer students suffer. So, when a student is disruptive (such as to eventually warrant suspension), many peer students — either in the classroom or across the school — will be affected. Their educational progress will be impaired. For the economic model, these externalities are measured as lost human capital.