PUBLIC POLICY INSTITUTE OF CALIFORNIA

OCTOBER 2020

Niu Gao, Julien Lafortune, and Laura Hill

Who Is Losing Ground with Distance Learning in California?

SUMMARY

CONTENTS

Technical appendices to this report are available on the PPIC website.

The resurgence of COVID-19 over the summer and the predicted fall increase in cases means that many districts will continue some form of distance learning for months to come. To help districts refine remote instruction, we explore key issues California families experienced around distance learning this spring. Using data from the Census Household Pulse Survey, a weekly survey conducted in 2020, we document how the pandemic altered Californian households. Our findings show that distance learning has widened gaps for children of color, children in low-income families, and children of less-educated parents. More specifically, we find:

- **Internet and device access remains a formidable challenge.** Twenty-nine percent of households did not always have internet available for educational purposes, and the share is much higher among low-income households (43%). Devices were not always available in 33 percent of households, and access to devices is often limited.
- **Live contact with teachers is limited.** Children and teachers had an average of 3 hours of live contact by phone or internet in a typical week; low-income and African American families had less frequent contact at 2.6 and 2.4 hours.
- **Parent involvement in learning varied widely.** In a typical week, parents spent 6.5 hours helping with their children's educational activities, and 18 percent spent more than 10 hours. At the same time, the pandemic has made it more difficult for some parents to be involved, with less-educated, Asian American, and Latino families spending 6 hours or slightly less.
- **Hardships may interfere with learning.** Nearly 40 percent of African American families reported not having sufficient food to eat during the spring; so did 25 percent of low-income families. Nearly a third of low-income families missed their rent or mortgage payment during the spring and nearly half did not have confidence in their ability to pay in the following month.

We offer several recommendations as state and local policymakers consider strategies to improve distance learning and mitigate learning loss. First, the state must increase its financial commitment, bulk-purchase computing and hotspot devices, subsidize connectivity for low-income families, and incentivize internet service providers to bring broadband to remote and rural areas. Second, districts should establish more-frequent live contact with students who receive less family support. Third, districts, along with the state and counties, must provide more wraparound services to students with the greatest need: when schools re-open, in-person instruction should prioritize vulnerable students, including English Learners, homeless children, and students with special education needs. Last, districts need to monitor student learning and well-being to identify at-risk students and develop intervention strategies.

Most California school districts began the 2020–21 school year in distance learning mode, and policymakers have made great efforts to improve internet and device access, online instruction, and contact with teachers. But working to address gaps identified from spring 2020 may prove challenging given the extra expense required to make campuses safe, the extra burdens families face during a recession, and potential budget cuts if the pandemic downturn persists.

Introduction

In the spring, the abrupt move to distance learning left districts scrambling; many students did not have internet access or a device—such as a laptop, Chromebook, desktop, iPad—they could use to participate, some parents could not help teach their children, and many teachers lacked training to deliver instruction remotely (Goss, Lee, and Gao 2020, Hamilton et al. 2020). Our analyses of California's largest 20 districts show an uneven rollout of distance learning, with varying degrees of access to critical services, resources, and instruction that students are accustomed to receiving in school.[1]

Most students are missing out on a substantial proportion of the material covered in a typical school year, but the implications are profound for low-income children, children of color, English Learners, children in foster care, and children with special education needs. In nearly 20 percent of districts, teachers primarily reviewed content taught earlier rather than provide new content (Garet et al. 2020), 43 percent of teachers covered less than 50 percent of the intended curriculum, and 26 percent of teachers held no live meetings with students (Hamilton et al. 2020). In addition, English Learners are receiving less instructional time from their teachers than non-English Learners (Californians Together 2020).

In Los Angeles Unified School District, only 60 percent of students logged on to the district's virtual classroom software daily, and participation lagged significantly among students from disadvantaged backgrounds (Besecker and Thomas 2020). Across the country, online searches doubled for online learning resources—for materials to support students in online platforms, such as Google Classroom, and for materials to supplement online content provided/required by schools, such as math games. But there were significant differences by socioeconomic status: search intensity rose twice as much in areas where families had above-median socioeconomic status (Bacher-Hicks, Goodman, and Mulhern 2020).

Under federal, state, and local health guidelines, most schools will continue to rely on distance learning in the 2020–21 school year—either via all-remote learning or a hybrid model. The 2020–21 enacted budget requires districts to provide universal access to internet and devices, track student attendance, and establish frequent live interaction with teachers.[2] In light of those policy efforts, understanding experiences from spring 2020 can help identify gaps and highlight areas of likely remaining concern.

In this report, we use the late spring weeks of the Census Household Pulse Survey data, a survey designed to capture households' diverse experiences with all aspects of the pandemic, to offer new statewide evidence on family experiences in three critical areas of distance learning: device and internet access, live instructional minutes, and parental help with learning.[3] We then examine disparities in these areas by household income, race/ethnicity, and educational attainment. Finally, we conclude by examining material hardships students faced during the pandemic that may impact learning.

[1] In April and May of 2020, PPIC reviewed the largest 20 California school districts' distance learning documentation for students and families.
[2] Failure to meet those requirements may result in funding loss.
[3] The Pulse Survey does not distinguish among children enrolled in public and private schools. Private school enrollment was 7.4 percent of total enrollment in California in 2015–16 (CDE Dataquest K–12 Public School Enrollment, Private School Affidavits). See Technical Appendix A for more detail about the survey.

Internet and Device Access Remains a Challenge

Before the novel coronavirus shut down schools across the state and forced districts to turn to distance learning, California had a persistent digital divide. In 2017, 27 percent of households with children did not have a high-speed internet connection and 16 percent of low-income households had no internet at all (Goss, Lee, and Gao 2019). Seven percent did not have a desktop, laptop, or tablet at home, a share that was more than double among low-income households (17%).

The pandemic further strains any digital infrastructure that may exist—to participate in remote learning, all students in the same household must have reliable access to an adequate internet connection, which requires additional bandwidth. However, 29 percent of California households with children reported that they do not always have internet available for educational purposes.

Limited internet affects more than a third of African American, Latino, and less-educated families (i.e., without a college degree). Only 57 percent of low-income students—which we define as living in households with income under $50,000 annually—always have internet available, compared to 87 percent for high-income households (Figure 1).[4] (We indicate if a finding is statistically significant by an asterisk; findings that are not or are marginally significant are noted as NS or MS.)[5] Nine percent of African American families and 6 percent of low-income families rely on internet provided by their children's school or district—the average across California households is 3 percent.

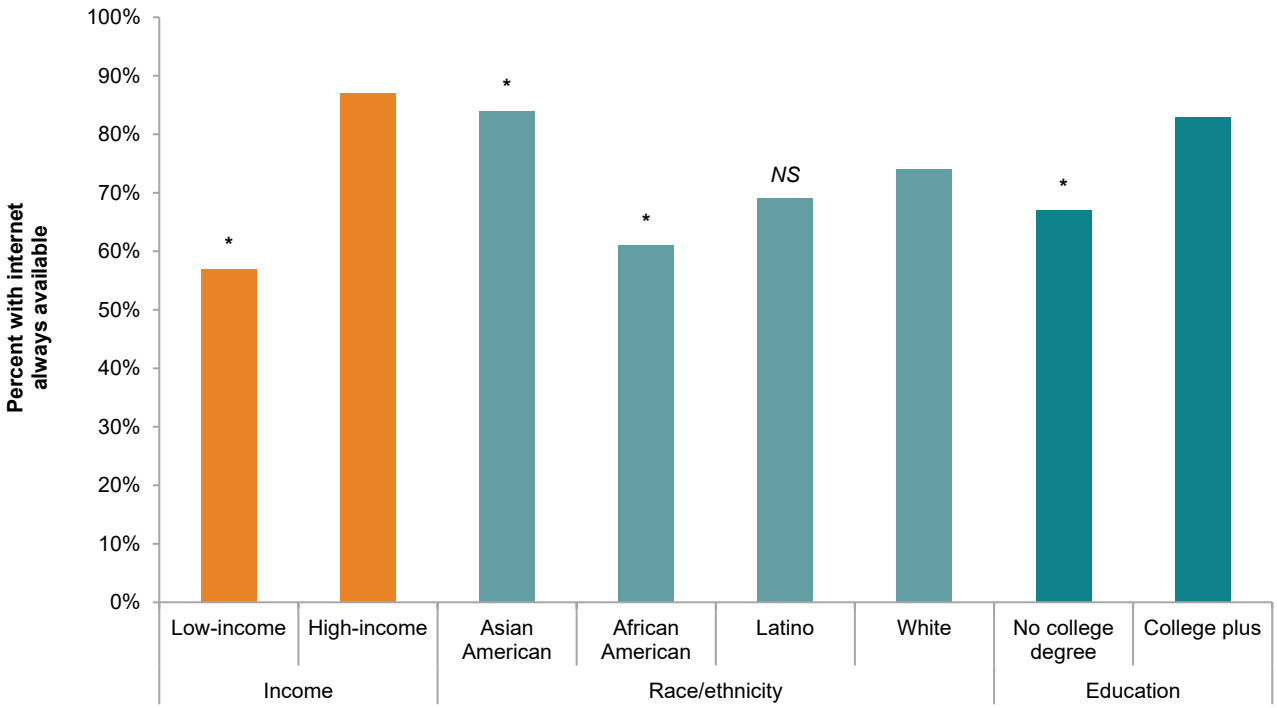
Because of the digital divide, low-income, less-educated, African American, and Latino families are less likely to report that their schools moved to distance learning using online resources (Technical Appendix Figure B1). But this gap was not made up by hard-copy–based school work: low-income and African American students are also less likely to rely on paper packages during distance learning (Technical Appendix Figure B2).

[4] In this report, low-income is defined as households with income less than $50,000 annually. High-income households are those with income greater than $100,000. Income data in the Pulse are reported in coarse bins, making it difficult to accurately create an indicator of poverty that adjusts for household size and closely matches the federal poverty level. The 200 percent federal poverty line for a family of three is $43,000, and $52,000 for a family of four.

[5] Bars with no asterisks and no "NS" or "MS" are the comparison group. For example, in Figure 1, we compare low-income families to high-income families. High-income families are the comparison group and low-income families are much less likely to always have internet available. That difference is statistically significant, which is indicated with an asterisk.

FIGURE 1

Steep inequities in internet access exist across California families

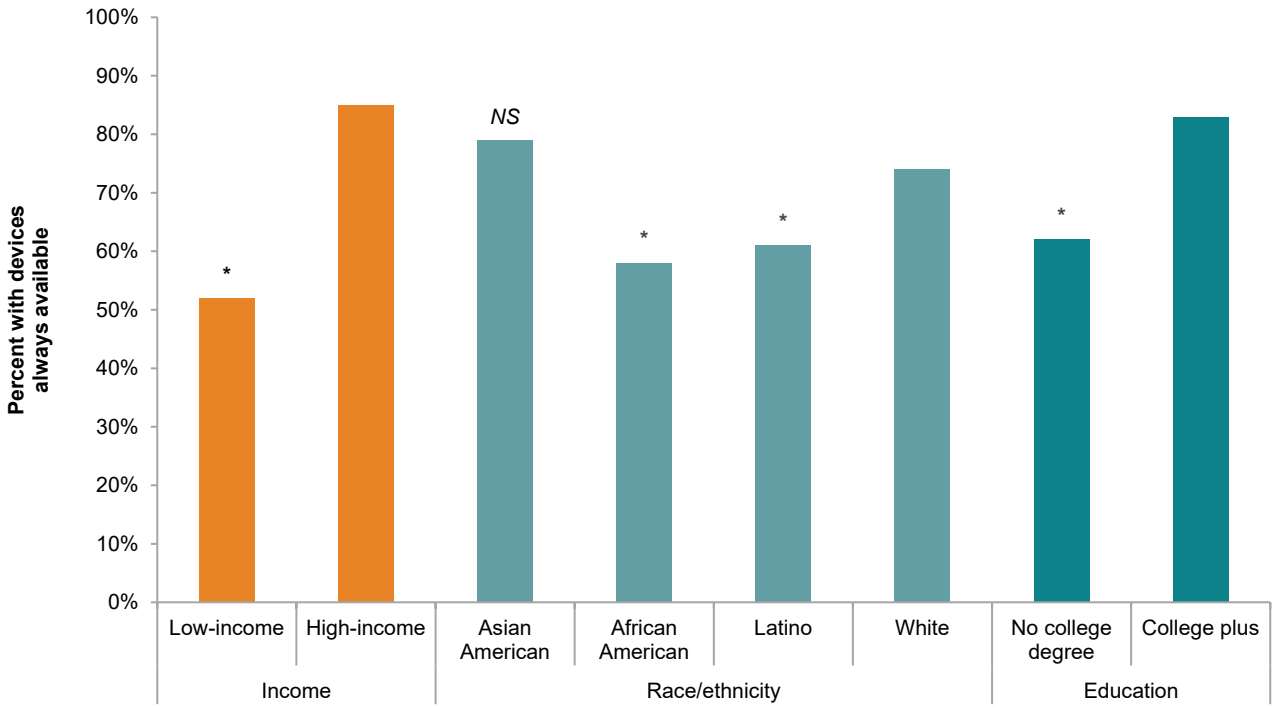


SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. b) Sample includes 7,529 Californian households surveyed between April 23 and June 2. Children in those households attend public or private schools in California. Households with missing/non-reported responses are excluded from analyses. c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B1.

A similar digital divide occurs in device access (Figure 2). Statewide, 33 percent of households do not always have devices available for educational purposes, and the share is much higher among African American (42%) and low-income families (48%). High-income, white, college-educated, and Asian American families are more likely to have purchased their own devices, while low-income, Latino, less-educated, and African American families are more likely to rely on devices provided by schools or districts (Technical Appendix Figure B3).

FIGURE 2
Nearly half of low-income students do not always have devices available



SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. b) Sample includes 7,529 Californian households surveyed between April 23 and June 2. Children in those households attend public or private schools in California. Households with missing/nonreported responses are excluded from analyses c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B2.

Students Had Limited Live Contact with Teachers in the Spring

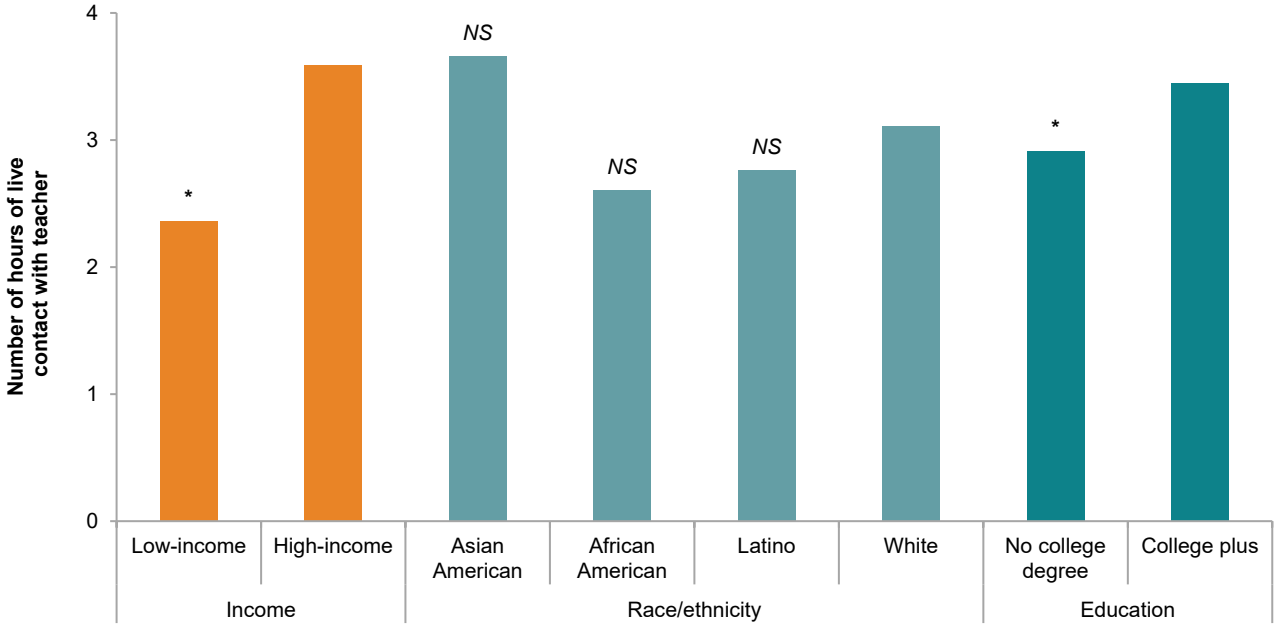
The transition to distance learning also sharply limited live contact students had with their teachers. Device access is strongly related to the number of hours of live teacher contact, and plays a greater role than income, education, and parental involvement alone (Technical Appendix Table B7). The difference could be attributed to districts' approaches to distance learning. Only 32 percent of high-poverty districts emphasized live virtual instructional support, compared to 53 percent among low-poverty districts (Garet et al. 2020).

During spring school closure, the state waived the minimum instructional minutes requirement. In a typical week, students had three hours of live contact—via phone or internet—with their teachers; 22 percent of parents reported no live contact, and 42 percent reported having up to two hours of contact (Figure 3). More than a third of African American families reported no live contact with teachers.

Children in high-income families have one more hour (or 50%) of their instruction live each week than children in low-income families (Figure 3). Over three-quarters of low-income students reported four or fewer hours of live instruction per week.[6] Many students have had no live contact with their teachers; almost 40 percent of African American students reported no live contact (Figure 4).

FIGURE 3

Live contact with teachers is more limited for students from low-income families



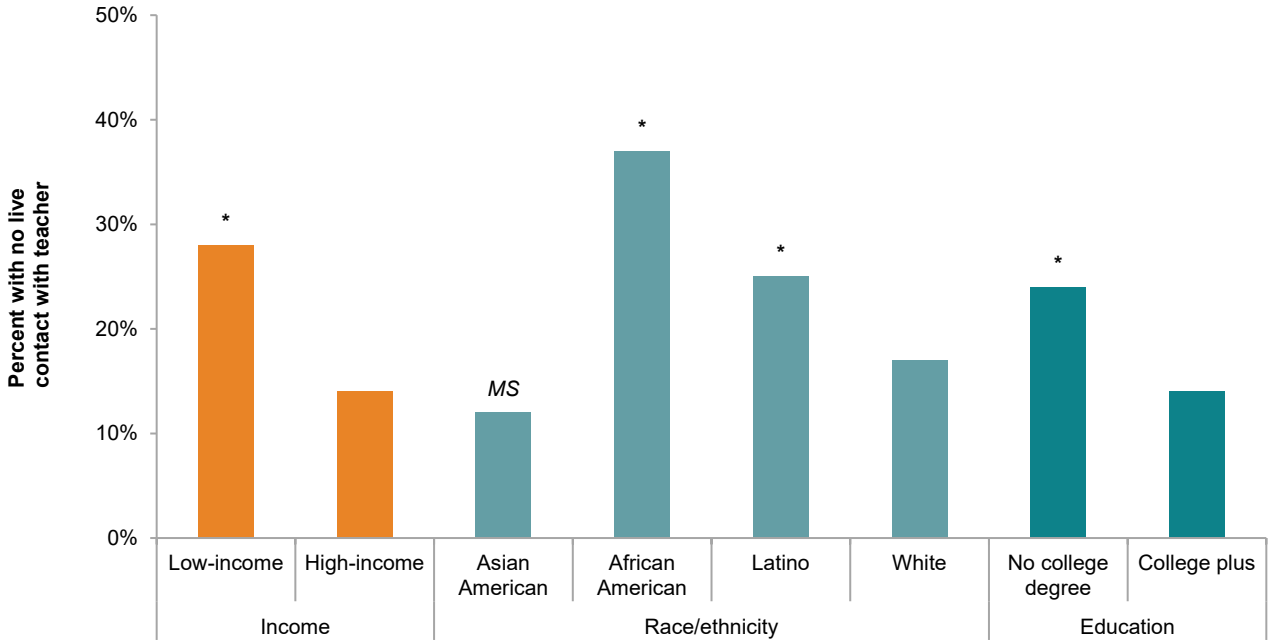
SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. b) Sample includes 7,529 Californian households surveyed between April 23 and June 2. Children in those households attend public or private schools in California. Households with missing/non-reported responses are excluded from analyses. c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B3.

[6] See Technical Appendix Figure B4 for the distribution of weekly hours of live teacher contact per child for low-income and non-low-income households.

FIGURE 4

Nearly 40 percent of African American families reported no live contact with teachers



SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. 2. Sample includes 7,529 Californian households surveyed between April 23 and June b) Children in those households attend public or private schools in California. Households with missing/non-reported responses are excluded from analyses. c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B3.

Given that these hours accumulate over time, learning disparities may also accumulate for students receiving less live contact as schools continue to rely on remote instruction. The enacted 2020–21 state budget, however, aims to address some shortcomings from the spring: it emphasizes teacher-student engagement by requiring daily live interaction, although the amount varies by districts.[7] Unlike spring 2020, minimum instructional minutes will be required in fall 2020 (although they will be lower than pre-pandemic levels).[8]

Low-income Parents Provided Fewer Hours of Support

Parent involvement is an important component of student learning (Weiss et al. 2010). Especially in this moment of crisis, engaging students means engaging their families. Between late April and the end of the school year, parents spent 6.5 hours (per child) on learning activities in a typical week—18 percent of parents spent more than

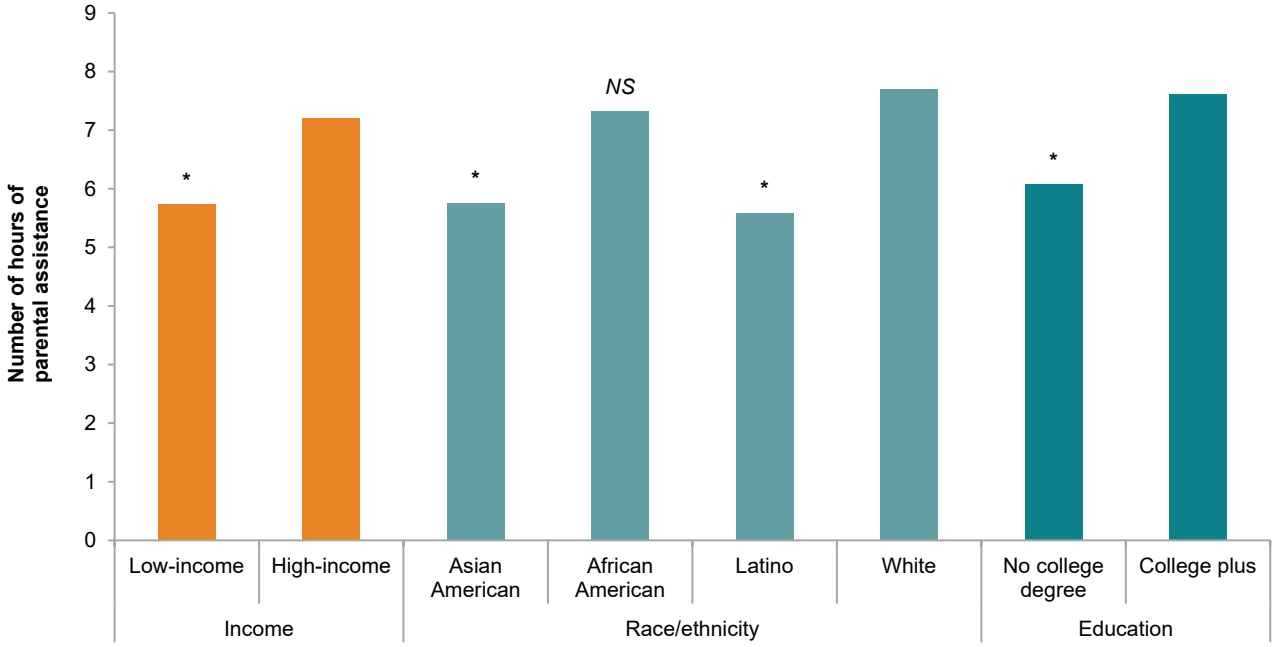
[7] Section 43503 (b) of Senate Bill 98 reads distance learning shall include "daily live interaction with certified employees and peers for purpose of instruction, progress monitoring, and maintaining school connectedness."

[8] Required instructional minutes are lower for kindergarten, 50 minutes lower for grades 1–3, 60 minutes lower for grades 4–8, and 120 minutes lower for grades 9–12 (Johnson 2020).

10 hours (Figure 5). Notably, over half of low-income households report spending four or fewer hours per week.[9] White parents spend two more hours than Latino parents. Asian American families report spending less time on their children's learning activities, with 17 percent reporting zero hours of involvement.[10]

FIGURE 5

Parents with lower incomes and less education spend fewer hours per week helping with school



SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. b) Sample includes 7,529 Californian households surveyed between April 23 and June 2. Children in those households attend public or private schools in California. Households with missing/non-reported responses are excluded from analyses. c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B4.

Material Hardships May Complicate Distance Learning

While some students have unreliable access to internet, and therefore to their courses and teachers, for students without steady food or housing, the challenges to learning are compounded. COVID-19 has left many children hungry nationwide (Bauer 2020). Hunger and food insecurity interferes with learning, leading to higher inattention and poor memory among children, and mental health concerns among adolescents (Ke and Ford-Jones 2015). In California, 37 percent of African American families reported that they did not have sufficient food to eat—nearly

[9] See Technical Appendix Figure B5 for the distribution of parental weekly instructional hours per child for low-income and non-low-income households.

[10] Differences by race and education persist even when controlling for teacher hours, income, single-parent status, and recent job loss (Technical Appendix Table B8). Notably, the number of teacher hours is positively associated with parental involvement, suggesting that parental involvement may be more of a complement than substitute to live teacher instruction.

five times more than white families and ten times more than Asian American families.[11] Food insufficiency also affects 25 percent of low-income households (Figure 6).

Among families experiencing food insufficiency only 25 percent reported receiving free meals provided by schools. Although districts have set up more than 4,700 grab-and-go sites, they distributed fewer meals than during the previous school year.[12] In Los Angeles Unified, only 40,000 meals were served daily when schools first closed. The number has risen since to 374,000—but in April 2019, students had eaten roughly 600,000 meals per day. Meanwhile, in rural districts coping with the logistics of reaching students, some are relying on school buses or school staff to deliver meals (California Department of Education 2019).

COVID-19 is also increasing housing insecurity, which is associated with poor health, lower weight, and developmental risk among young children (Kneebone and Murray 2020; University of California Office of the President 2020). Eighteen percent of California households missed their rent or mortgage payment during the spring and the share is much higher among low-income (29%) and less-educated (21%) families. Nearly half of low-income households do not have confidence in their ability to pay their rent or mortgage next month (Technical Appendix Table B6). Eviction protection programs, recently extended through February 2021, may provide limited relief.[13]

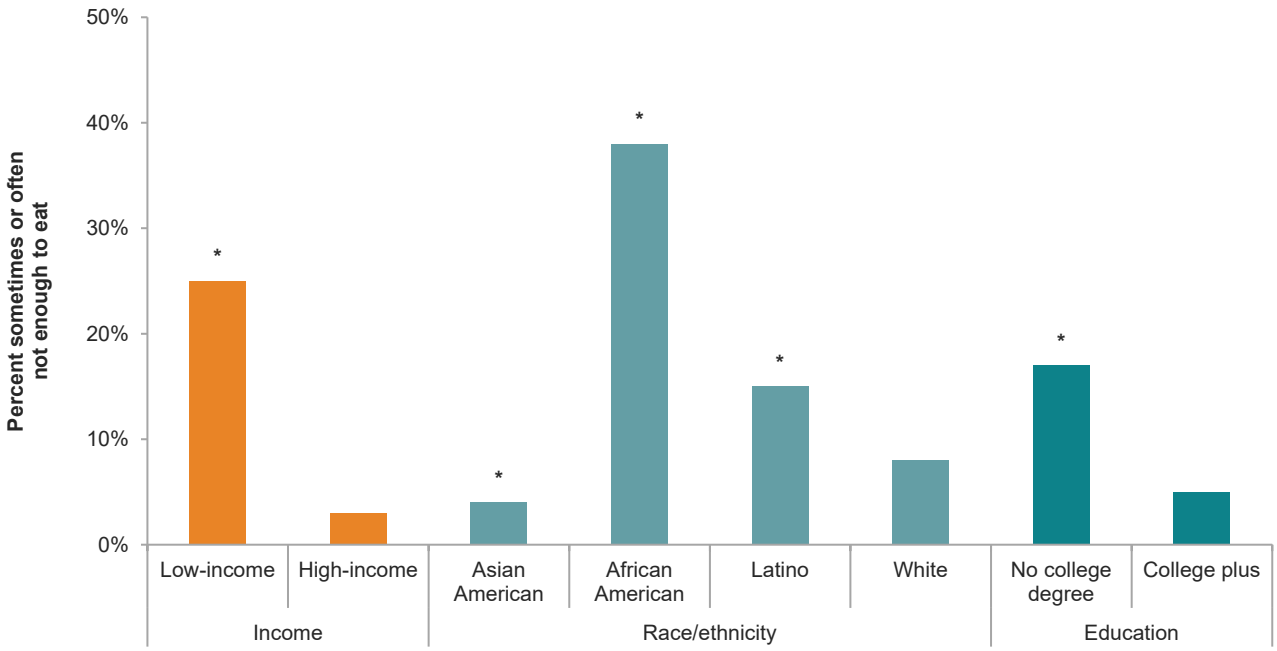
[11] Notably, the difference between African American and other households is still large and statistically significant when controlling for education, income, and recent job loss (Technical Appendix Table B9).

[12] Nationwide, 293 million lunches were served during April 2020, 43 percent lower than April 2019 (USDA 2020).

[13] The federal CARES Act prohibits evictions for 120 days, but it only applies to properties secured by a federally backed mortgage, which is estimated to cover a quarter of properties (Semuels 2020). The governor recently signed Assembly Bill 3088, which extends eviction relief through February 2021. No evictions are permitted prior to February 2021 if COVID-19 related hardship occurred between March 4 and August 31, 2020, while hardships experienced between September 1, 2020 and January 31, 2021 require tenants to pay 25 percent of rent to avoid eviction.

FIGURE 6

Nearly 40 percent of African American families did not have sufficient food to eat in the last week



SOURCE: Authors' calculation using 2020 Census PULSE Household Survey.

NOTES: a) Stars denote estimates that are statistically distinguishable from the base category (either high-income, white, or college plus households) at or below the 5 percent level; *MS* denotes marginal significance at the 10 percent level; *NS* denotes differences that are not statistically significant. b) Sample includes 7,529 Californian households surveyed between April 23 and June 2. Children in those households attend public or private schools in California. c) Household income is based on 2019 income: low income: < $50,000, high income: > $100,000. d) Race/ethnicity is based on the household member who completed the PULSE survey. e) Full results including standard errors are included in Technical Appendix Table B5.

Conclusion

With COVID-19 continuing to spread throughout the United States, schools and districts must determine how to protect their students and staff while continuing to prioritize learning and equity—with a more limited budget.

Through a patchwork of efforts to address the digital divide, the state delivered over 73,000 computing devices and 100,000 hotspots.[14] However, crucial gaps remain—internet/device access affects more than half of low-income families. A worldwide shortage and delays in delivering devices further compound the challenges (Gecker and Liedtke 2020).

Efforts to narrow the digital divide will help students gain better access to teachers; in the meantime, the new budget act requires districts to establish daily live contact. But many districts are continuing to negotiate how live contact will be delivered and how much. In terms of addressing hunger among schoolchildren, California families began to receive pandemic EBT cards in mid-May, which provided up to $365 on ATM-like cards to buy

[14] The California Public Utility Commission allocated $30 million to support connectivity. Under the program, school districts can receive 50 percent discounts on hotspots until September 30, 2020. The 2020–21 budget appropriates $5.3 billion (through the federal CARES act), which can be used for devices or connectivity until December 31, 2020. The state has established a set of cross-sector partnerships, and the governor's recent executive order requires all state agencies to help bridge the digital divide.

groceries. As of mid-August, the state had distributed $1.4 billion worth of P-EBT cards to families of 3.7 million low-income students.

As state and local policymakers in California evaluate options to mitigate learning loss, we offer the following recommendations:

- **Expand state investments to close the digital divide.** In mid-August, the state superintendent for public instruction said California is *still* trying to quantify the size of the gap. California's Department of Education still does not know which families are lacking internet and device access and where they are in the state. Given the sheer size of the digital divide, the state must take a comprehensive, centralized approach to bring internet to hard-to-connect communities, subsidize connectivity for low-income families, and bulk-purchase and deliver computing devices. In New Zealand, the Ministry of Education dispatched modems and devices to families to support distance learning; in Hong Kong, the government provided roughly $500 to every child for education expenses; and in Chattanooga, TN, the city-owned broadband installed at least 130 hotspots to support distance learning.
- **Establish more frequent live contact—via phone or internet—with low-income students.** Expanding contact using existing educational staff would be most cost-effective, but state, district, and local stakeholders will need to work together to overcome disputes over educational delivery. Districts could also provide flexible learning options to working families. New York plans to offer free child care for up to 50,000 students a day; districts including San Francisco and Indianapolis are setting up learning hubs for homeless students or students without internet access, with staff who can help them with assignments. The state could also consider a statewide tutoring program, such as the one in Tennessee or the national program in the UK, to address some of the learning loss, particularly among at-risk students. The California Department of Public Health guidelines suggest that schools can prioritize in-person instruction for English Learners, homeless students, and students with special education needs—and this may help.
- **Collaborate to provide more wraparound services from the state, county, and districts to disadvantaged students.** The recent federal spending bill extended the pandemic-EBT, which provides the value of school meals to low-income students as a grocery voucher, through the 2020–21 school year. However, federal and state governments should work together to extend and expand the benefits of Supplemental Nutrition Assistance Program/CalFresh—with federal backing this would be of lower cost to the state and easier to accomplish in difficult fiscal times. Districts can work with counties and nonprofits to leverage existing infrastructure (e.g., food banks) to deliver meals to families in need. More generally, economic policies to aid struggling households in the midst of the pandemic-induced recession (e.g., extended supplemental unemployment insurance and small business protections) can help provide the stable economic foundation necessary for effective at-home learning to take place.
- **Monitor student learning and social-emotional well-being.** Regardless of whether districts return to full or partial in-person schooling in 2020–21, they must be able to determine student academic achievement levels and monitor student progress to moderate learning loss. By assessing student learning throughout this year—with formative and diagnostic assessments as well as other measures—schools can gain critical data toward understanding the size of the "COVID slide" students experienced after the unprecedented disruption to instruction, combined with the usual "summer melt." These data can also provide teachers with critical information to inform instruction and meet students' individualized needs.

Ultimately, how much the pandemic affects students' academic, social, and emotional well-being will depend on how quickly the spread of the virus is controlled and when school closures are relaxed. In the meantime, policymakers should prioritize supporting disadvantaged students to ensure that the gaps that emerged in spring 2020 do not persist over the 2020–21 school year. Continuous and coordinated efforts from federal, state, and local officials will be critical to mitigate learning loss and address widening inequities.

REFERENCES

Bacher-Hicks, Andrew, Joshua Goodman, and Christine Mulhern. 2020. "Inequality in Household Adaptation to Schooling Shocks: COVID-induced Online Learning Engagement in Real Time." NBER working paper 27555.

Bauer, Lauren. 2020. "The COVID-19 Crisis Has Already Left Too Many Children Hungry in America." *The Hamilton Project* (blog) Brookings Institute. May 6.

Besecker, Megan and Andrew Thomas. 2020. *Student Engagement Online During School Facilities Closures: An Analysis of L.A. Unified Secondary Students' Schoology Activity from March 16 to May 22, 2020*. Los Angeles Unified School District

California Department of Education. Dataquest K–12 Public School Enrollment, Private School Affidavits.

Liam Dillon. 2020. "Eviction Protections Are Expiring. What Does This Mean for Struggling California Tenants?" *Los Angeles Times*.

Garet, Mike, Jordan Rickles, Jill Bowdon, and Jessica Heppen. 2020. *National Survey on Public Education's Coronavirus Pandemic Response*. American Institutes for Research.

Gecker, Jocelyn and Michael Liedtke. 2020. "U.S. Faces Back-to-School Laptop Shortage." *Washington Post*.

Goss, Justin, Courtney Lee, and Niu Gao. 2019. "California's Digital Divide." Just the Facts. Public Policy Institute of California.

Hamilton, Laura S., David Grant, Julia H. Kaufman, Melissa Diliberti, Heather L. Schwartz, Gerald P. Hunter, Claude Messan Setodji, and Christopher J. Young. 2020. *COVID-19 and the State of K–12 Schools: Results and Technical Documentation from the Spring 2020 American Educator Panels COVID-19 Surveys*. RAND.

Johnson, Sydney. 2020. "California Schools Must Provide Daily Live Interaction, Access to Technology this Fall." *EdSource*. June 25.

Ke, Janice and Elizabeth Lee Ford-Jones. 2015. "Food Insecurity and Hunger: A Review of the Effects on Children's Health and Behavior." *Pediatric Child Health*. 20 (2): 89–91.

Kneebone, Elizabeth and Cecile Murray. 2020. "Estimating COVID-19's Near-Term Impact on Renters." Terner Center for Housing Innovation. University of California, Berkeley.

Semuels, Alana. 2020 "Renters Are Being Forced From Their Homes despite Eviction Moratoriums Meant to Protect Them." *Time*.

Senate Bill 98. Education Finance: Education Omnibus Budget Trailer Bill. June 29, 2020.

University of California Office of the President Global Food Initiative. 2020. *Addressing Food Insecurity for Families and Individuals in California Experiencing Housing Insecurity*. University of California Office of the President.

ABOUT THE AUTHORS

Niu Gao is a research fellow at the Public Policy Institute of California, specializing in K–12 education. Her areas of interest include math and science education, digital learning in K–12 schools, and student transition from high school to college. Prior to joining PPIC, she worked as a quantitative policy analyst at Stanford. She holds a PhD in educational policy and an MS in economics from Florida State University.

Julien Lafortune is a research fellow at the Public Policy Institute of California, where he specializes in K–12 education. His primary areas of focus include education finance, school capital funding policy, and educational tracking and stratification. He has published research on the impacts of school finance reforms on student achievement in the *American Economic Journal: Applied Economics*. He holds a PhD in economics from the University of California, Berkeley.

Laura Hill is a policy director and senior fellow at the Public Policy Institute of California. Her areas of expertise are K–12 education and immigration. She is currently researching English Learners in California schools, special education, and ESL students in community colleges. Her recent publications examine student achievement on the state's K–12 assessments and the link between language reclassification policies and student success. Prior to joining PPIC, she was a research associate at the SPHERE Institute and a National Institute of Aging postdoctoral fellow. She holds a PhD in demography and an MA in economics from the University of California, Berkeley.

ACKNOWLEDGMENTS

The authors would like to thank Rachel Mave, Michael Garet, Kevin Cook, Caroline Danielson, and Lynette Ubois for their many helpful comments and suggestions on an earlier draft of the report. Stephanie Barton and Becky Morgan provided excellent editorial and production assistance. All errors are our own.

PPIC

PUBLIC POLICY
INSTITUTE OF CALIFORNIA

The Public Policy Institute of California is dedicated to informing and improving public policy in California through independent, objective, nonpartisan research.

Public Policy Institute of California
500 Washington Street, Suite 600
San Francisco, CA 94111
T: 415.291.4400
F: 415.291.4401
PPIC.ORG

PPIC Sacramento Center
Senator Office Building
1121 L Street, Suite 801
Sacramento, CA 95814
T: 916.440.1120
F: 916.440.1121