

Beyond test scores: Broader academic consequences of the Covid-19 pandemic on American students

Report from a consensus panel

Morgan Polikoff, Isabel Clay, and Daniel Silver, University of Southern California

Panel of experts

Wendy Castillo, Princeton University

Tom Dee, Stanford University

Melissa Diliberti, Pardee RAND Graduate School

Sarah Fuller, University of North Carolina at Chapel Hill

Oded Gurantz, University of Colorado - Boulder

Laura Hamilton, American Institutes for Research

Jenny Nagaoka, University of Chicago Consortium

Akisha Osei Sarfo, Council of the Great City Schools

Beth Tarasawa, NWEA

September 2023

Introduction

More than three full years have passed since the Covid-19 pandemic forced school closures in March of 2020. By now, the impact of the pandemic and pandemic-induced school closures on student test scores is fairly clear.

The Center on Reinventing Public Education (CRPE) wrote about the impact on student achievement last year, reaching several broad conclusions based on the evidence available. For instance, student achievement has been harmed by the pandemic, and students of color, low-income students, and students who were already behind were more negatively affected than their more privileged peers.

Since that report, new evidence, including from the main and long-term trend National Assessment of Educational Progress (NAEP) reports, largely corroborates these findings. For instance, 2022 saw the [largest score declines](#) in fourth and eighth grade math and the [lowest scores](#) in fourth and eighth grade reading since NAEP's inception. [The 2023 NAEP long-term trend assessment](#) told a similar story: reading and math declined across all performance percentiles, and declines were particularly extreme for already low-performing students.

There is also sobering evidence about the impact of the pandemic and school closures on children's behavioral and mental health outcomes. These outcomes are intimately related to academics and to some of the outcomes we consider here (e.g., attendance), but they are reviewed in another consensus panel report.

While a great deal is known about the test-based academic impacts of the pandemic, there has been less systematic analysis of the non-test academic impacts. While test scores provide valuable evidence, there are a range of non-test measures like attendance, engagement in school, student retention, course failure rates, degree completion, and enrollment in subsequent levels of education that also yield important insights about students' educational well-being. These measures matter in their own right and in how they affect longer-term outcomes like employment, earnings, and adult well-being. If the pandemic has hurt these outcomes, it is essential for us to understand what those effects are and who is most affected, so that we can construct and target appropriate policy responses to them. To address this gap in the literature, we set out to review the available evidence and produce a consensus panel report. Our review aimed to address the following three questions:

1. How has the pandemic impacted chronic absenteeism and other relevant indicators of student engagement with school—particularly at the secondary level?
2. How has the pandemic impacted graduation and dropout rates, as well as other relevant indicators of high school success and academic preparation?
3. How has the pandemic impacted remediation rates, course failure rates in college/higher education, and other interim indicators of success in higher education (e.g., dropout rates, associate degree rates)?

To address these questions, we conducted a systematic review of the available literature as described below. We then shared our tentative conclusions with the consensus panel, consisting of researchers and practitioners who have expertise in the impacts of Covid-19, seeking their feedback on our conclusions. Based on their insights, we revised this work. The final presented conclusions have been approved by the consensus panel members and represent our best takeaways given the available literature.

Conclusions

- Enrollment in K-12 public schools has declined considerably. These declines have been concentrated in the early grades and in the 2019-20 and 2020-21 school years. Enrollment changes have also differed by sector, with declines in traditional public school enrollment and increases in homeschooling and private and charter school enrollment.
- Student attendance has declined considerably, as have both self- and teacher-reported measures of engagement. These declines have been especially large for historically underserved student groups, and students have not recovered to pre-pandemic levels.
- College readiness, as judged primarily by high school course failure rates, has declined, especially for historically underserved student groups. Trends in student grades are less clear.
- Community college enrollment has declined substantially, again especially for historically underserved student groups.
- Community college retention has also declined, again especially for these same underserved student groups.

Next, we briefly discuss our search methods, present our conclusions for each of the three research questions, and highlight implications, with a call for research and policy to address these dire non-test academic outcomes.

Search strategy and inclusion criteria

We began our systematic review by constructing a search string that included terms related to our research questions' content, grade levels, and to the Covid-19 pandemic. After refining the search term based on feedback from expert colleagues, we searched ProQuest's Education Database, Dissertations & Theses Global database, and ERIC for articles that contained evidence relevant to our research questions. Our initial search yielded 2,066 total hits.

We then conducted an abstract screening, retaining pieces that met our four inclusion criteria: research needed to (1) be written in English, (2) be published between March 1, 2020, and April 14, 2023, the date of our initial search, (3) use data from the United States, and (4) include pre- and post-pandemic data on the same outcome measure. The first criterion was necessary so that all authors could read all studies fluently, and the second and third bounded the scope of this review to the United States policy context during the Covid-19 pandemic. The fourth limited our search to research plausibly able to capture some measure of the impact of the pandemic, as opposed to unrelated studies that just happened to coincide with its timing.

Abstract screening left us with 46 pieces, which we included in a full-text review. At this stage, we added 31 additional pieces that our search had either initially missed or that had been published after our initial search, leaving us with a total of 77 articles. During our review, members of the consensus panel identified additional sources that were relevant to our report and that were too new to have been identified in our search; where appropriate, we included these sources.

Findings

Research Question 1: How has the pandemic impacted chronic absenteeism and other relevant indicators of student engagement with school—particularly at the secondary level?

Enrollment in traditional public schools declined considerably, especially in the early grades.

There were well-publicized declines in public school enrollment in the 2020-21 school year, and while some of these students have returned to public schools, many have not. Enrollment dipped around **3% nationally in 2021**—over a million students—and these losses **persisted into 2021-22**. These enrollment declines were driven by traditional public schools—public charter schools saw an increase in enrollment of 7% from 2019-20 to 2020-21 (with enrollments stable in both sectors in 2021-22).

Declines of approximately this magnitude were found in a **number** of national and state studies, such as those **from Massachusetts** and **Ohio**. Enrollment declines were driven overwhelmingly **by the youngest children**, especially **kindergarten students**, suggesting that parents may have chosen to delay the start of their young children’s schooling by a year. **Surveys** of school district leaders confirmed that redshirting of kindergarten students was a main driver of enrollment declines that year. Studies are mixed in terms of the demographics of enrollment declines—some studies found **larger declines** for historically marginalized racial groups and others **found the opposite**.

Where did these missing students go? **Several studies** point to sharp increases in homeschooling. **One study** estimated that homeschooling accounted for about a quarter of the enrollment decline. As mentioned above, charter enrollments also account for some of the traditional public school decline in the first year of Covid-19. Private school enrollments also increased by about 4%, according to a 33-state study; however, these increases accounted for at most 14% of the public school decline. Enrollment declines were also driven by **population loss/demographic trends**, which predated the pandemic but were accelerated by it.

These overall patterns were also affected by local Covid-19 closure policies—evidence from several studies shows that enrollment declines were larger in schools and **districts** that spent more time **closed for in-person learning**.

Attendance declined considerably and it has not recovered.

A second well-publicized finding is that student attendance declined precipitously in the aftermath of Covid-19 and remains far below pre-pandemic trends. Nationally, chronic absenteeism increased by 13.5% between 2018-19 and 2021-22. Studies using administrative data from **Detroit**, a selection of **Ohio districts**, **North Carolina**, and **Washington, DC** all found sharp increases in absenteeism. For instance, in Washington, DC, chronic absenteeism increased from 29% pre-Covid-19 to 48% in 2021-22. **Surveys of educators** found that teachers were greatly concerned about increases in student absenteeism. Data from the NCES School Pulse Panel also support the conclusion of increased student absenteeism, with 72% of respondents indicating that absenteeism had increased a little or a lot from pre-Covid-19 to 2020-21. Given the importance of attendance for student learning, it is essential to address the factors that drive students to be absent from school. There are likely many factors contributing to increased absenteeism, though the research we reviewed is unable to parse out the relative influence of these factors on the trend.

Unlike with enrollment declines, there are some relatively clear demographic trends in terms of

increases in absenteeism. Broadly, students and groups who were more likely to be absent prior to Covid-19 saw larger increases in absenteeism as a result of the pandemic. For instance, data from [Ohio](#) found that increases in absenteeism were larger for Black and Hispanic than for White students, and these data were corroborated in [North Carolina](#). While attendance has declined considerably for all groups of students, the distribution of days absent has widened; for instance, 2021-22 North Carolina data shows that the 90th percentile of absenteeism sits at 32 days per year, up from 19 days pre-pandemic (while the then-tenth percentile increased from only 3 days to 5 days).

Self- and other-reported engagement dipped during the first full year of pandemic schooling, especially in virtual learning.

Evidence of declines through the 2020-21 school year was present across a variety of different engagement measures. One measure of engagement is the amount of time spent on schoolwork. [Census Pulse data from Washington state](#) in spring 2021 showed majorities of parents reporting their children were spending less time on schoolwork than they were before the pandemic. Further, [national data from the ABCD study](#) confirmed low levels of at-home effort, and that students in remote learning during 2020-21 were more likely to be spending very low amounts of time on schoolwork.

Self- or other-reported effort or related measures were also areas of concern in the 2020-21 school year. A nationally representative survey of teachers by [Education Week](#) in January 2021 found that 74% of teachers said more students were “not finishing schoolwork because of procrastination” than before Covid-19. The survey also reports high levels of “getting low grades or incompletes,” “not participating/speaking in class,” and “skipping or showing up late for class.” National survey data from the [American Teacher Panel](#) confirmed high levels of teacher concern about student engagement in online learning, as well as substantial proportions of students not regularly completing their assignments. Students confirmed these declines in engagement; for instance, in the [ABCD study](#), students reported lower levels of enjoyment of online learning.

While concerns around student engagement were particularly salient during remote instruction, available evidence suggests that student engagement did not rebound to pre-pandemic levels with the return to in-person schooling. 40% of district leaders reported having moderate or major concerns about engagement during in-person instruction in the 2021-2022 school year. While these student engagement results during the first full year of the pandemic are troubling, more recent research tends to focus less on these measures of student engagement. As a result, we have less evidence about the state of student engagement today.

Research Question 2: How has the pandemic impacted graduation and dropout rates, as well as other relevant indicators of high school success and academic preparation?

Multiple indicators of high school academic preparation show declines—and they are greater for students from historically marginalized groups.

Many indicators point to a decline in college readiness—one key indicator is course failure/course completion in high school. Evidence suggests sharp increases in high school course failure, although the evidence is mixed on overall high school grades.

Data from [Houston](#) found increases in course failure rates of over 50% that persisted through 2020-21 (for instance, 25% of students had one or more Fs in 2018-19, as compared to 39% in 2020-21); similar increases were seen in [North Carolina](#). In [Washington state](#), in contrast, course failure rates

decreased a small amount but “no credit” and “incomplete” rates jumped considerably. Qualitative data from the [Communities in Schools](#) partnership found that 20 percent of interviewed students who had dropped out of school had familial care responsibilities and 15 percent had financial obligations that made a return to school difficult.

At the same time, there is conflicting evidence on overall grades. One [national study of ACT test-takers](#) found that the proportion of students reporting “A” GPAs had increased by almost 10 percentage points since 2021, continuing a trend of grade inflation that [long predated](#) Covid-19. This trend appears to have varied across states—[administrative data from North Carolina](#) showed grade declines of almost half a GPA point. The differences between state and national data might be legitimate, or could reflect differences in populations (the self-selected population of ACT test-takers versus an entire state), policies (some states or districts changing grading policies, others not), or data source (self-reported grades versus administrative data). Regardless, [survey data from Minnesota educators and parents](#) suggest that the amount students are learning in K-12 decreased from before the pandemic to winter of 2021, in line with test score findings.

Evidence also suggests that students from historically marginalized groups have disproportionately experienced negative effects on college readiness. For instance, increases in high school course failure rates in [Houston](#) were much larger for Black and Hispanic students than for students from other racial/ethnic groups. In [Washington state](#), increases in “no credit” and “incomplete” high school grades were smaller for White students than for other racial groups (and changes were larger for English learners and students with disabilities). And in [North Carolina](#), declines in course grades were larger for Black, Hispanic/Latino, low-income, and English learner students than for other groups.

College enrollment declined, driven by community college enrollment, and declines were largest for historically marginalized student groups.

Relatively little research on high school completion was undertaken during our literature search window, but we identified a more substantial body of work on college enrollment. Substantial data confirm sharp declines in enrollment in community colleges. In the first year after the pandemic’s onset, [enrollment declined across the board in community colleges](#)—90% of institutions that responded to a national survey reported enrollment declines, with 50% reporting declines of more than 10%. Declines were seen across a range of geographic settings, from [Kalamazoo](#) to [Chicago](#), [California](#) to [Newark](#), and [Washington state](#). [National Student Clearinghouse](#) data indicate that enrollment declines seem to have stabilized as of the 2022-23 school year. Most studies found that enrollment declines were substantially smaller at four-year colleges. For instance, [California community college enrollment declined about 17% from fall 2019 to fall 2021](#), as compared to about 3% for state universities in California (and a 2% increase in enrollment at the flagship University of California system). Of course, college enrollment trends are also heavily affected by macroeconomic trends; historically low unemployment rates since the initial shock of the pandemic may have also partially driven these declines.

As with readiness indicators, declines in community college enrollment have been the largest for students from historically marginalized groups. In [Chicago](#), [Kalamazoo](#), and [California](#), the declines were greatest for Black and Hispanic/Latino students and the least for White and Asian students. Hispanic/Latino students also saw the largest enrollment declines in [Newark](#) and [Washington state](#). Between Fall 2019 and Fall 2021 community college enrollment fell by 18% for Black students. Other evidence suggests that [enrollment declines may have been larger for older students \(age 25+\), males, low-income students, and students with disabilities](#). For many of these groups, labor market effects on enrollment may have been particularly large (i.e., the decision to go to work rather than

to community college may have been especially consequential in the context of historically low unemployment).

Changes in enrollment are also unsurprising in the context of increased uncertainty and changes in stated college plans. [National FAFSA data](#), for instance, show a 14% decline in applications, a decline particularly pronounced in ZIP codes with the highest Black and Hispanic/Latino populations. [Massachusetts](#) data showed a doubling in uncertainty around next steps for non-college-bound students, and almost a quarter of community-college-bound students nationally reported that they changed their enrollment plans because of Covid-19.

Research Question 3: How has the pandemic impacted remediation rates, course failure rates in college/higher education, and other interim indicators of success in higher education (e.g., dropout rates, associate degree rates)?

Data on college outcomes are far less available than data on K-12 outcomes or college enrollment. We found just a few quantitative studies that met our inclusion criteria. Thus, our conclusions in response to this question are more tentative than those for questions 1 and 2.

Community college retention decreased, and these declines were largest for historically marginalized student groups.

Data from the [National Postsecondary Aid Study](#) found that about 8% of community college students withdrew due to Covid-19, and that these rates were higher for Black, Hispanic, and American Indian students than for White students. Data from [Chicago Public Schools](#) also found increases in withdrawal and dropout rates among community college students and decreases in transfers. In terms of individual courses, administrative data from [California](#) showed that course withdrawal at community colleges increased. [Survey responses from undocumented students in California](#) cited financial strains that had consequences for college enrollment. One respondent noted, “My father, who is the sole provider, has lost his job and I am forced to attend school part-time in order to help pay some of the bills.” These students also noted that they experienced particularly adverse impacts due to the inaccessibility of public benefits, such as unemployment.

At the same time, there was a modest amount of evidence that course grades may have increased at the same time as course withdrawal rates did. Evidence from both [California community colleges](#) and from an [anonymous public university](#) found increases in grades, especially A grades, after Covid-19. This may be related to historical trends in college grade inflation, accelerated by a softening of grading policies during remote learning.

What we don't know

While we reviewed substantial research, the literature fell short in answering all the questions we hoped to address. There are many areas where more work is needed, but here we highlight a few glaring shortcomings of the existing literature.

- It is not surprising that it was hard to find current evidence about the pandemic's lingering effects; the timeline to conduct and publish research is often very long. We need more evidence on the elasticity of Covid-19 impacts, that is, whether the declines caused by Covid-19 have resolved, or whether they have persisted. We wanted to address elasticity to a greater extent in our review, but the literature was mostly inadequate to support this

goal. In part, this is simply a timing issue; **fundors can incentivize more rapid research and dissemination, and researchers can combine research using administrative data (which typically takes longer to complete) with research using representative survey samples that can provide leading indicators.** State and federal governments contribute to the lack of timely evidence on the pandemic's education-related effects, through both long lags in reporting key data and through the limited use of existing data systems. While we recognize the challenges of quickly organizing accurate data in our highly decentralized school system (and doing so during a crisis), the unavailability of timely data vexes efforts to understand the pandemic's effects and to undertake evidence-based recovery. Similarly, we know of no state-led initiative to make effective use of federally funded statewide longitudinal data systems to understand the disruptions in students' schooling, or to amplify conventional efforts to address absenteeism and truancy. More rapid and flexible data sharing can also facilitate the kind of rapid research that is needed, especially for practitioners who need timely evidence to inform their daily efforts to address student needs. There are also, of course, issues with university incentives for tenure and promotion, which tend to reward peer-reviewed journal articles over rapid and more public forms of research communication.

- Moving beyond documenting the effects, **we need to know more about potential solutions to student attendance and engagement problems.** What interventions do we know can work (based on pre-pandemic or post-pandemic evidence) to boost student engagement and attendance (noting that interventions to boost one of these outcomes might not necessarily boost the other, especially if declines in attendance are driven by factors other than engagement)? What implementation conditions are necessary for interventions to succeed at anything approaching the scale needed for recovery? It goes without saying that student achievement is unlikely to meaningfully recover if students are missing far more days of school; thus, urgency around this need for engagement solutions is paramount.
- A gap persists between researchers' concerns about students based on available data (including both test score data and the data we report here) and parents' apparent concerns based on both direct and indirect evidence. This may not be a new phenomenon, though it is certainly drawing renewed attention—many think that this gap is contributing to low participation and effectiveness of pandemic recovery interventions, though of course parents may simply be prioritizing other student needs or dealing with other constraints. But, **much more research is needed on the causes of low intervention participation and effective ways to convey students' needs to parents.**
- There is substantially more quantitative research on K-12 outcomes and college enrollment than on college outcomes. This made answering our third research question difficult. We know that data availability in K-12 is a primary reason for this discrepancy, but we strongly support efforts to improve data availability and comparability in higher education. **We need greater understanding of how Covid-19 has affected posts-secondary outcomes and beyond.** The absence of high-quality postsecondary data has severely affected our knowledge of Covid-19 impacts on higher education students and institutions. While some individual states have stronger data quality and availability in higher education than others, organizations like the [Data Quality Campaign](#) offer state and national guidance on how to design responsive P-16-workforce data systems that give stakeholders the tools they need for research, policy, and practice.
- Our consensus panel felt strongly that the outcomes we are seeing in secondary and postsecondary education are, at least in part, reflective of the effects of other broader trends, such as student mental health and macroeconomic trends. While other consensus panels

are reviewing literature on these topics, there is a need for research that explicitly connects across these silos. **In other words, we suspect that declines in student engagement and increases in student mental health concerns are related, but research making those connections explicit would be beneficial.** And, of course, more systematic tracking of non-test outcomes of all kinds, including outcomes that bridge behavioral and academic (e.g., disciplinary outcomes), would facilitate these kinds of comparisons.

- **Finally, longitudinal research at the child level—for example, tracking Covid-19 experiences and early impacts, then following up to study long-term effects across academic and nonacademic outcomes—is sorely needed.** We can learn a great deal from following successive cohorts, as most of the research to date has done, but longitudinal research will allow us to see how effects compound or mitigate over time at the level of individual children, allowing for better targeting of interventions and supports.

Implications for the future

It is clear now that the academic effects of Covid-19 on students go far beyond test scores. Student engagement was negatively affected, and student attendance continues to lag far behind pre-pandemic levels. Certainly some of this decline is due to increased vigilance around illnesses, post-pandemic cultural changes in schools and society, and ongoing teacher issues (e.g., teacher absenteeism and localized shortages). But regardless of the reasons, attendance declines are massive and highly concerning. Additionally, they are disproportionately concentrated among students who were, on average, struggling academically before and after the pandemic. If the substantial academic recovery programs instituted since the return to in-person learning are to remediate learning for the most vulnerable students, we need a national agenda to boost student engagement and attendance.

Enrollment also took a dive as a result of Covid-19, and these declines will have serious repercussions for public schools that are funded based on enrollment (and even more so in states like [California](#), which has for decades funded schools based on average daily attendance). But beyond potential effects on funding, we need to be sure that children are receiving a quality education regardless of their setting. Certainly home school, private school, and other non-public options can be high quality alternatives, but in a context where even the most careful accountings of pandemic-era enrollments includes tens or hundreds of thousands of unaccounted-for students, we worry that some students—particularly the most vulnerable—may fall through the cracks.

Perhaps paradoxically, available evidence suggests that course grades may have increased while nearly every other indicator of academic preparation and success declined. Since grades are often families' main source of feedback about their students' progress, we worry that this decoupling of grades from test and non-test indicators of academic well-being may contribute to an “urgency gap,” where parents and caregivers believe their students to be progressing normally despite evidence of deep and widespread loss of learning and engagement. In this context, students and caregivers may be less likely to take advantage of academic recovery options, even when such options are made available.

The best non-test academic evidence we gathered suggests that the current state of U.S. students' academic well-being is grim. There is much work to do, and especially for older students, there is little time to do it. By communicating the absolute urgency of this work and providing indications of where needs are most dire, we hope this report, alongside the rest of CRPE's consensus reports, allows states and districts to target academic recovery and school engagement initiatives as precisely as possible.

About the Center on Reinventing Public Education

The Center on Reinventing Public Education (CRPE) is a nonpartisan research organization at [Arizona State University's Mary Lou Fulton Teachers College](#). We rigorously examine and test transformative ideas, using our research to inform action, and we combine forward-thinking ideas with empirical rigor. Since 1993, we have been untethered to any one ideology but unwavering in a core belief: public education is a goal—to prepare every child for citizenship, economic independence, and personal fulfillment—and not a particular set of institutions. From that foundation, we work to inform meaningful changes in policy and practice that will drive the public education system to meet the needs of every student.