learning restoration in the covid era

A Study of SAIS Member Schools

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Executive Summary

The impact of the COVID pandemic on student learning continues to provoke expressions of deep concern. In this paper we use ERB test data to compare the impact on student learning from the initial closure of schools in March 2020 versus the impact on learning from the most recently concluded 2021-22 school year. The initial impact on student learning due to school closures in March 2020 was significant, ranging from 30% to 50% in the rate of student learning growth on different CTP subtests. By end of the 2021-22 school year, however, overall student growth rates on CTP subject tests exceeded pre-COVID rates. Students in the lowest quartile of performance remain vulnerable with lower growth rates than before COVID, while students in the highest quartile of performance actually exceeded their pre-COVID rate of learning growth.

Introduction

COVID-related disruption of normal social interaction in March 2020 will long remain seared in our collective memory. Workplaces were abandoned, hospitals and senior centers could not accept visitors, and schools closed their doors—all on short notice and with little idea how long those closures might last. Each of these institutions adapted as well as they could, with work-from-home and study-from-home becoming the norm.

Inevitably, though, the sudden loss of personal interaction had a substantial impact, one that continues to provoke expressions of concern in education. A National Assessment of Educational Progress (NAEP) report published in 2022 showed that nine-year-old students, typically in fifth grade, experienced the largest-ever score decline in reading and the first-ever recorded score decline in math. Peggy Carr, Commissioner of the National Center for Education Statistics (NCES), was cited in USA Today as saying "It's clear that COVID-19 shocked American education and stunted the growth of this age group of children."[1]

Commentary on COVID's impact in education has understandably been dominated by test results from students in public schools. In a series of papers dating back to late 2020, however, ERB has mined its database of Comprehensive Testing Program (CTP) results to understand the extent to which COVID-related trends affected student learning in independent and faith-based private schools.

The purpose of this paper is to summarize those findings by comparing the impact on student learning from the initial closure of schools in March 2020 with the rate of student learning growth during the most recent 2021-22 school year. In a departure from our prior practice, we present the most recent data specifically for members of SAIS. It is our hope that these data will be helpful to school leaders in presenting to Boards and interested members of the public the very positive story of adaptation and restored learning effectiveness that has taken place in private schools.

[1] *USA Today, September 1, 2022. For the NAEP results, see https://www.nationsreportcard.gov/highlights/ltt/2022.*

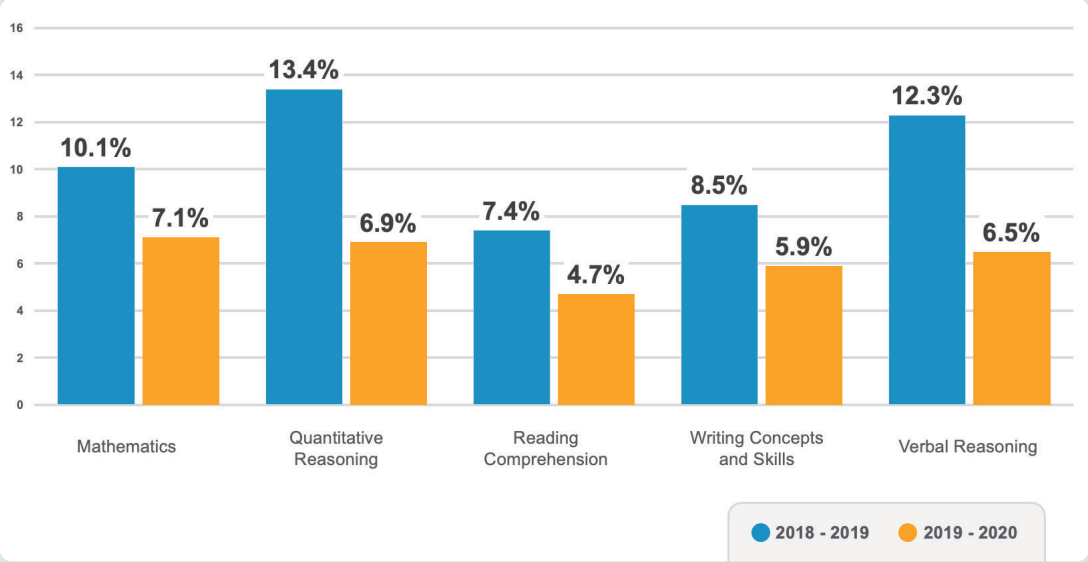
The Initial Impact of COVID-19 on Student Learning

To assess the impact of spring 2020 school closures on student learning, we analyzed CTP results from a panel of students who took the test battery in Fall 2018, Fall 2019 and Fall 2020. We compared the test score growth rate from fall 2018 to fall 2019 (pre-COVID) with the growth rate from fall 2019 to fall 2020 (spanning the school closures in spring 2020), using data from all ERB Member Schools.[2]

Figure 1 demonstrates the impact of the transition to remote education on student learning. Data from grades 2 through 7 are combined in this graph, though inspection of the results for each grade shows a great deal of consistency.

Figure 1

Year-Over-Year Learning Gain Among Independent School Students



[2] *Nearly 2 million subject-specific CTP tests are typically taken each year by over 250,000 students drawn from over 1,000 schools, making any analysis of learning growth trends highly reliable. During fall 2020, however, fewer students took CTP tests than usual. Those who did so often took the tests at home, delivered online with their teachers serving as remote proctors. To ensure comparability, we examined score trends from 2018 and 2019 for this much smaller sample and found that they are representative of the larger universe of CTP test takers.*

COVID-related disruptions can be clearly seen to have reduced the rate of student learning during the spring and fall of 2020. Student growth from 2019 to 2020 in Mathematics, Reading Comprehension and Writing Skills and Concepts was only about 70% of the amount of growth exhibited by those same students the previous year. While significant, it is worth noting that a 30% loss of growth momentum was far less dire than results reported at the time based on national studies of statewide testing in public schools.

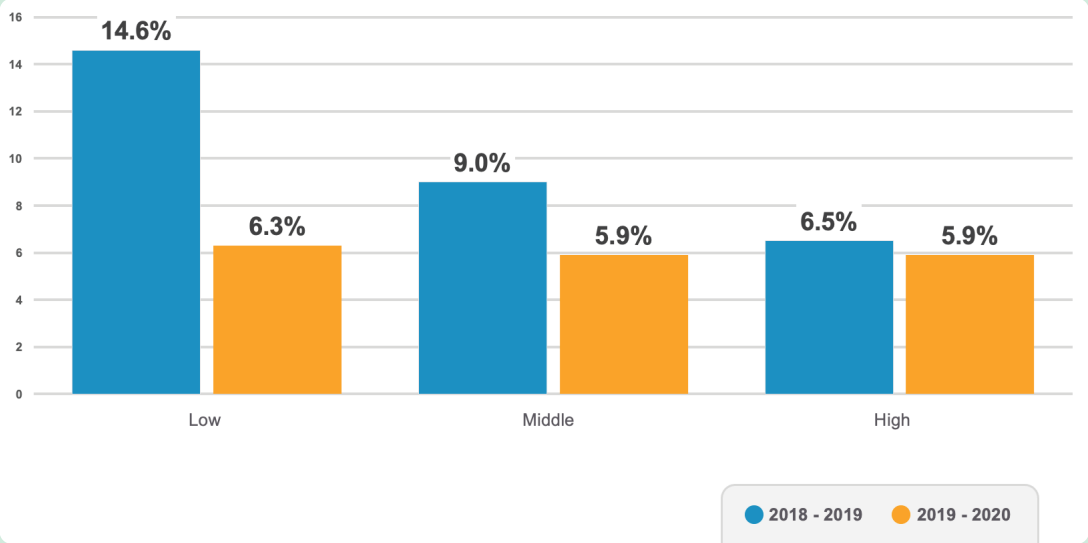
Figure 1 also shows that the impact on learning growth was greater in Quantitative Reasoning and Verbal Reasoning than in the CTP subject tests. Students had roughly half the amount of growth in reasoning skills from fall 2019 to fall 2020, compared to the growth shown by those same students one year earlier.

Reasoning skills are built over time by acquiring a depth of understanding that enables students to connect new material to what they already know, and to work through problems they have not yet encountered. That kind of deep engagement with the material—mastery rather than surface understanding of the facts—was disproportionately impacted when students abruptly lost daily contact with teachers and peers in the classroom.

These findings raise the question of whether the COVID disruption was greater on some groups of students than others. To address this question, we examined the rate of learning growth among the strongest and weakest students by dividing our population into the bottom 25% in test performance ("Low"), the middle 50% ("Middle"), and the top 25% ("High") based on their test scores one year earlier, in 2017–2018.

Figure 2

Test Score Growth by Level of Student Performance



Between spring 2018 and fall 2019, students in the Low group showed the greatest degree of test score gain (14.6%), followed by the Middle group (9.0%) and the High group (6.5%). This is the usual pattern of growth from one year to the next. Some students in the low performing group one year are ready to accelerate their growth, aided of course by the fact that teachers and learning specialists are focused on their needs. Students in the Low group also have more opportunity for growth since there is more material still to be learned at their grade level.[3]

[3] *This is an example of what statisticians call "regression to the mean"—a tendency of those who are low in one measurement to be higher in a subsequent measurement, while those who are highest in the first measurement will tend to be less high in the next. We find this consistently across each of the CTP subtests.*

In the pandemic-disrupted spring and fall of 2020, however, this typical pattern of growth changed dramatically. The amount of test score growth over that period was almost indistinguishable among the three groups, ranging from 6.3% in the lowest group to 5.9% in the highest group. While consistency in learning growth across student performance levels may at first seem gratifying, it is important to note that the lowest performing student group was actually the most disadvantaged compared to the growth they would typically have experienced from one year to the next. The virtual and hybrid learning models that schools were forced to adopt on short notice thus had the greatest negative impact on those students who were already in the lowest achievement group.

This pattern is exaggerated in the verbal and quantitative reasoning tests, with top quartile students demonstrating slightly more learning growth than those in the bottom quartile. The strongest students seem not to rely as much as others on teacher interaction to incorporate new knowledge into their reasoning process, thus enhancing their problem-solving success.

In our first report on COVID impacts on learning, published at the end of 2020, we noted that

> *Educators will need to be even more attentive to the distinctive needs of different students as independent schools reestablish the central role of teacher-student classroom interactions, while also retaining the most successful aspects of virtual learning. The lowest-achieving students have the greatest need of classroom interaction to maintain a pace of learning that enables them to catch up to others.*

Two full school years have now passed since we wrote those words. How effective have SAIS member schools been in fostering student academic achievement similar to pre-COVID levels, not only for their strongest students but for all students?

Restoration of Student Learning Patterns, 2021-22

By the beginning of the 2021-22 school year, teachers and students alike had accumulated 18 months experience working around the disruptions of the COVID pandemic. Education had largely returned to the classroom, albeit with more frequent absences due to quarantine periods. To see how these developments affected student learning growth, we compare student growth rates in SAIS member schools between 2018 and 2019 (pre-COVID) with growth rates between 2021 and 2022.

The establishment of a new "COVID-era normal" in education is reflected in a substantial recovery of pre-COVID rates of student learning growth. Figure 3 shows that in our three subject tests—Math, Reading Comprehension and Writing Concepts and Skills—there was more learning growth during 2021-22 than in the same grades during the last pre-COVID year of 2018-19. Learning growth on our two reasoning measures—verbal and quantitative—continues to lag pre-COVID rates by a small amount. Broadly speaking, though, rates of student learning growth in 2021-22 look very much like the pre-COVID rates. This stands in sharp contrast to reports on student learning based on state and national test data from public school systems.

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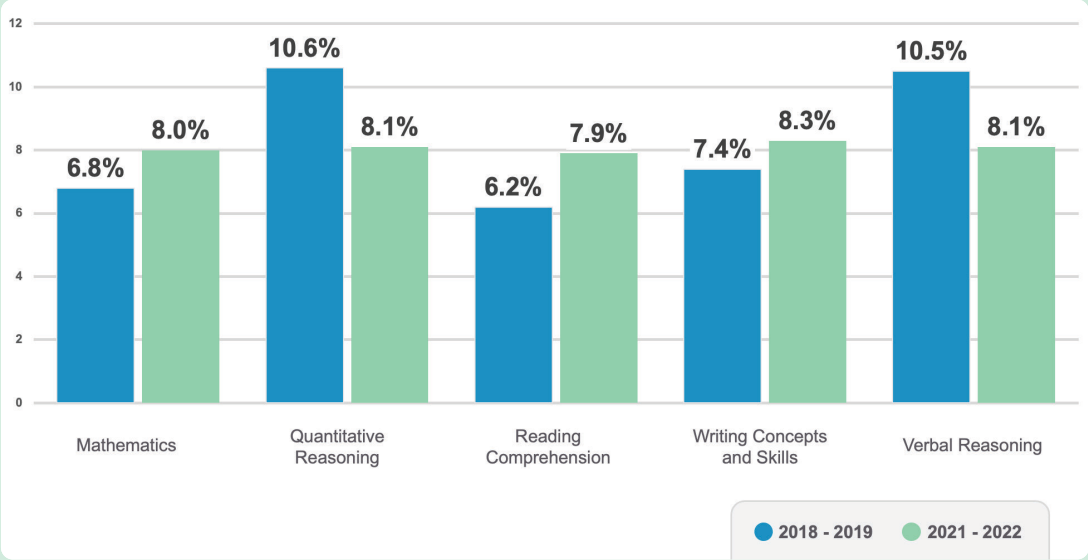
Figure 3

Test Score Growth in Mathematics and English Language Arts



How successful have SAIS member schools been in supporting the lower-achieving students who were most impacted by school closures of the first phase of the pandemic? Figure 4 shows a reestablishment in 2021-22 of the stair-step pattern in which lower achieving students experience higher rates of learning growth. It was however only a partial restoration of that pattern, as lower achieving students have not yet recovered the same rate of learning growth as they had pre-COVID. By contrast, students in the top quartile of performance exceeded pre-COVID rates of learning growth.[4]

Two factors may be contributing to the higher rates of learning growth by students in the top quartile of achievement. One is that these students have a catch-up opportunity created by the initial COVID impact. High achieving students are usually near the ceiling in growth potential because of their existing mastery of grade-level material. With the impact on learning experienced in spring 2020, however, there was an increased opportunity to accelerate subsequent learning growth.

[4] *When we separate the findings in Figure 4 for the math-focused CTP subtests and the ELA-focused subtests, we find very similar patterns across those fields. The same finding holds when we look separately at CTP subject tests and the two tests of reasoning: lower achieving students have not fully recovered pre-COVID levels of learning growth, students in the middle two quartiles fully recovered pre-COVID levels of learning growth in 2021-2022, and students in the top quartile exceeded pre-COVID rates of growth.*

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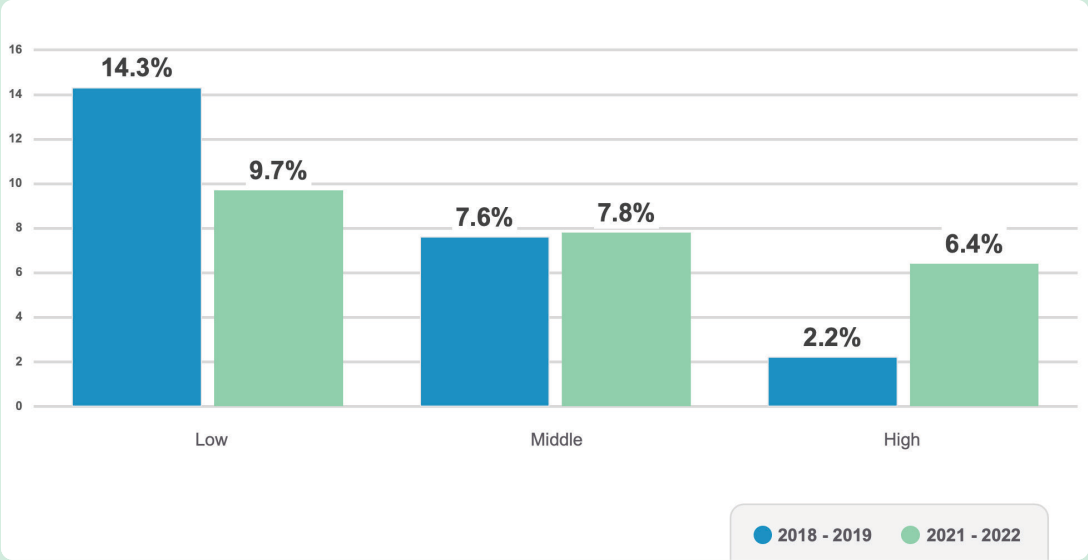
Figure 4

Test Score Growth by Level of Student Performance



It is also possible that the most capable students flourished precisely because of the habits of greater independence required of them during the initial phases of the pandemic. The 2022 NAEP study of academic performance by 9 year old students nation-wide was paired with a survey in which they were asked a number of questions about their educational experience during COVID. The NAEP report concludes that

> *Higher-performing students reported more confidence in their ability to recognize when they don't understand something they are learning, ask for help when they need it, and find learning resources online to learn more about something they don't understand, compared to their lower-performing peers.*

The COVID-19 pandemic has taught us many things about work, community and human nature. One of those lessons specifically applicable to education may be the extent to which the most capable students flourish when given greater independence and responsibility for their learning.

Conclusion and Action Implications

These findings on student learning growth suggest a number of take-away lessons. First and most importantly, SAIS member schools were highly successful in moderating the initial impact of COVID on student learning in 2020 and, by 2022, were even more successful in reestablishing pre-COVID rates of learning growth. This stands in sharp contrast to the results of national studies focused on students in public school districts, which have led to expressions of concern about a permanent generational gap.

That said, our data point to several areas for continued focus. The initial COVID impact on learning growth was greater in the areas of verbal and quantitative reasoning than in the acquisition of subject knowledge. Rates of growth on our reasoning measures have still, as of 2021-22, not achieved pre-COVID levels. Schools must therefore maintain a continued focus on developing reasoning skills—not just what you know but what you can do with what you know—in order to fully erase gaps created by the initial COVID disruption.

Nor has pre-COVID year-on-year learning growth been fully reestablished for students in the bottom quartile of academic performance. SAIS member schools are adept at identifying what each student needs and responding to those needs with appropriate learning resources. If the deficit created by the initial COVID disruption is to be remedied for the lowest achieving students, those strengths must be fully brought to bear.

Finally, the accelerated learning growth experience of the highest-performing students during the COVID era presents schools with an opportunity to reflect on ways they might capitalize on the habits of independent learning that these students have developed. The goal here would be to institutionalize habits of greater autonomy that in spring 2020 were a side product of school responses to the COVID emergency. Success would mean that the accelerated growth rates of the highest achieving students becomes the new norm, rather than a distinctive marker confined to the COVID generation.

Interested in exploring your data further?

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