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Student Experiences through the COVID-19 Pandemic

Attendance, Online Learning Platform Use, and Annual Survey Reports

Julia A. Gwynne, Elaine M. Allensworth, Christopher Young, and Holly Hart

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Introduction

The COVID-19 pandemic created an unprecedented disruption in schooling for teachers, students, and their families. Chicago Public Schools (CPS), like many districts around the nation, shifted to fully remote learning in spring 2020, and most of its schools remained closed during fall 2020. Beginning in January 2021, the district gradually began to reopen its schools; many CPS students continued learning remotely, while others attended school in hybrid mode—some days spent learning from home and other days in person. This study looks at the student experience during this time, with a particular focus on attendance and student engagement.

The switch to remote learning was a challenge. Teachers suddenly had to figure out how to connect with students and engage them in online learning. Families had to support students in online learning while navigating shifts in their own jobs, as well as share space and internet bandwidth among multiple family members who might be working and learning from home. Students, families, and teachers were simultaneously navigating health concerns and related stress. These issues were particularly challenging within Black and Latinx communities because of higher rates of illness and job displacement, and lower access to health and mental health services.[1]

The U.S. media has largely assessed the "COVID impact" on students and their learning by reporting test score declines (vs. pre-pandemic years) in math and English language arts (ELA) in schools across the country. In Chicago, math scores declined significantly in 2022 vs. 2019 on the National Assessment of Educational Progress in grades four and eight; while ELA scores did not decline significantly. Scores on the Illinois Assessment of Readiness (IAR), were below pre-pandemic levels in school years 2021–22 and 2022–23 for students in grades 3-8, especially in math.[2] However, between the 2021–22 and 2022–23 school years, IAR scores in both subject areas improved considerably, with CPS showing some of the largest improvements in test scores of all school districts in the country.[3]

But test scores provide just a partial understanding of the pandemic's effects on students. It is also important to understand the pandemic's effect on other indicators of student achievement and engagement—such as grades, attendance, and student reports about instructional experiences, social emotional experiences in school, and academic behaviors such as study habits—as these are factors which matter considerably for students' life outcomes.[4]

Given the challenges brought on by the pandemic, coupled with the shift to remote learning, we would not expect students' experiences with school and learning to be the same during the pandemic as in pre-pandemic years. But there has been little systematic evidence available about what changed during the remote learning period, and what did not. In this study, we provide evidence about the experiences of CPS students in grades K-12 during the remote/hybrid school year (2020–21) and the two subsequent years (through 2022–23), answering two big questions about student engagement during the COVID-19 pandemic:

1 United States Department of Education (2021).
2 Illinois State Board of Education (n.d.).
3 The Educational Opportunity Project (n.d.).
4 Allensworth, Gwynne, Moore, & de la Torre (2014); Jackson, Porter, Easton, Blanchard, & Kiguel (2020) ; Porter, Jackson, Kiguel, & Easton (2023).

RQ1: What happened to different indicators of student attendance in grades K-12, including:

- Student attendance as measured by official absence rates collected by the district
- Participation in online learning during the remote/hybrid school year 2020–21
- The relationships of indicators of attendance and online participation with students' grades during the remote/hybrid school year.

RQ2: What happened to students' reports of their school experiences in grades 6-12

- Using student responses on the annual *5Essentials* Survey, we examine changes over time in student reports about:
  - Relationships with teachers, peers, and parents
  - Social skills, perseverance, and study habits
  - Instructional practices and academic engagement.

This report offers families, school staff, and policymakers much-needed information about how students fared during remote learning and in the years that followed. And it provides information which could be helpful to school districts, should there be another event which requires learning to return to a remote environment. For example, when learning first went remote, there were questions about how much time students should be expected to spend online, but school districts had no evidence to guide their decision-making. And before the pandemic, schools used attendance data to identify students who needed extra support, but whether attendance was still predictive of grades or whether other indicators of participation in remote learning would be better predictors was unclear.

This study also provides context for understanding findings shared in a prior Consortium report. In 2021, we released a study showing how course grades of CPS students in grades 4-12—across all subjects—changed during the remote learning period, compared to pre-pandemic years.[5] That study revealed that, despite the abrupt changes caused by the pandemic, many students earned similar or higher grades as before the pandemic, particularly at the high school level. However, grades declined for about 10% of students in grades 4-8, with twice as many students receiving at least one F than in previous years (22% in spring 2021 vs. 11% in 2017–19).

Most of the students who started failing classes during the remote learning period failed multiple classes—suggesting extreme difficulties for that subset of students. These findings spurred many questions about why grades declined for some, but not all, students, and we examine these questions in this report. Did students spend less time in instruction? What happened to students' attendance and their study habits? Did students feel supported by teachers, peers, and parents? Understanding students' experiences is important for contextualizing the shifts in students' grades—why they occurred when they occurred.

Data, sample, and methods

We used four sources of data for this study:

1. District **attendance data** from 2010–11 through 2022–23;
2. Data from **Google Meets,** which includes the total number of minutes students were logged in to the platform each day with an instructor present during the fall semester of 2020;
3. Data on course grades from 2020–21;
4. Responses on **annual *5Essentials* Surveys** administered in the early spring from the 2010–11 school year through 2022–23.[6]

5 Gwynne, Allensworth, and Liang (2022).

6 Prior research has found students' survey responses on the *5Essentials* Surveys to be highly predictive of their academic outcomes.

Attendance and Google Meets analyses. Analyses of district attendance data are based on publicly available data on students in preschool through twelfth grade in all CPS schools (including charter, contract, special education, and Options schools). Analyses of Google Meets are based on students in grades K-12, enrolled in regular district schools; it excludes students in charter and contract schools, since these schools were not required to use Google Meets for remote learning, and students in Options schools and special education schools, which had different contexts for learning. The analysis examining the relationship between indicators of attendance and participation in online learning and students' course grades is based on students in grades 4-12 who were enrolled in regular district schools (excluding students in charter schools, special education schools, and Options schools).

Survey data and analysis. Analyses of survey data (e.g., relationships with teachers, peers and parents; social skills, perseverance and study habits; instructional experiences and academic engagement) are based on students at all CPS schools (including charter, contract, special education, and Options schools). However, they only include students in grades 6-12 because only those students took the survey in *all* of the years included in this study.[7] The 2022 Consortium brief examining how students' course grades changed during the remote learning years examined differences at each grade level separately and found similar patterns for students in grades 4-8, which were different from students in grades 9-12. As this study builds on the prior, we combined grades 6-8 and grades 9-12 together for RQ2 survey trends analyses. Survey trends are adjusted for any changes in student demographics over time. We also conducted an analysis of missing data to address potential bias with changes in survey participation rates through the pandemic but found that survey respondents were very similar to the full population of students who were eligible to take survey in terms of their background characteristics. **Details about survey measures and analyses are provided in Appendices C and D.**

7 Fourth- and fifth-grade students were surveyed beginning in 2020, and students below fourth grade had never been surveyed.

Key Findings

Research Question 1

What happened to student attendance in grades K-12?

Daily school attendance is one of the most fundamental requirements for learning, and research consistently shows attendance is strongly associated with students' learning gains, grades, and later educational outcomes.[8] Students who are chronically absent, defined as missing 10% or more of days during a school year, are more likely to drop out of high school and have lower test scores and weaker socioemotional outcomes.[9]

The challenges associated with the pandemic, such as higher rates of illness, increased stress, and more distractions from family members all being home simultaneously, made consistent attendance difficult for many students. Having to attend school via computer each day likely contributed to more partial days of participation in instruction, given the limited attention spans for remaining on computers and devices. Concerns about COVID-19 infection continued even after the return to school in 2021–22, keeping students out of school if they had any potential symptoms, and prompting schools to revert back to remote learning when multiple students in a class or school were infected. The disruptions in routines and relationships brought by the pandemic, along with the rise in mental health concerns in the years before and subsequent to the pandemic, brought further challenges to school attendance.

In this chapter, we examine changes over time in official absence rates. We then look more deeply at attendance in the remote/hybrid year, since attendance had a different meaning when students were not expected to attend school in-person every day.

RQ1 Findings

A. Absence rates: increased during the remote/hybrid year (2020–21) and increased further in the year students returned to in-person instruction (2021–22). They improved slightly in the 2022–23 school year but remained above pre-pandemic levels (**see Figure 1 for details**).

B. K-12 participation in remote learning: During the remote/hybrid school year (2020–21), students at all grade levels spent approximately four hours in synchronous instruction. As a result, a natural threshold surfaced for remote instructional time. (**See Figure 3 for details**).

C. High school participation in remote learning: High school students participated in synchronous remote instruction on more days than they were counted present for school. This suggests that high school students spent less than the required number of minutes in synchronous instruction, rather than missing entire days of school (**see Figure 4 for details**).[10]

8 Allensworth et al. (2014); Allensworth & Easton (2007); Ehrlich et al. (2014).

9 Gottfried (2014); Romero & Lee (2007); Ready (2010); Allensworth & Easton (2007).

10 Logins to the remote learning platform and district requirements for daily attendance online during the remote/learning year were only recorded in minutes. Although schools' record keeping regarding which students were absent or present each day was collected each period in high schools, we do not have access to absence rates by course period. Elementary schools collected attendance once a day.

1A: Absence rates

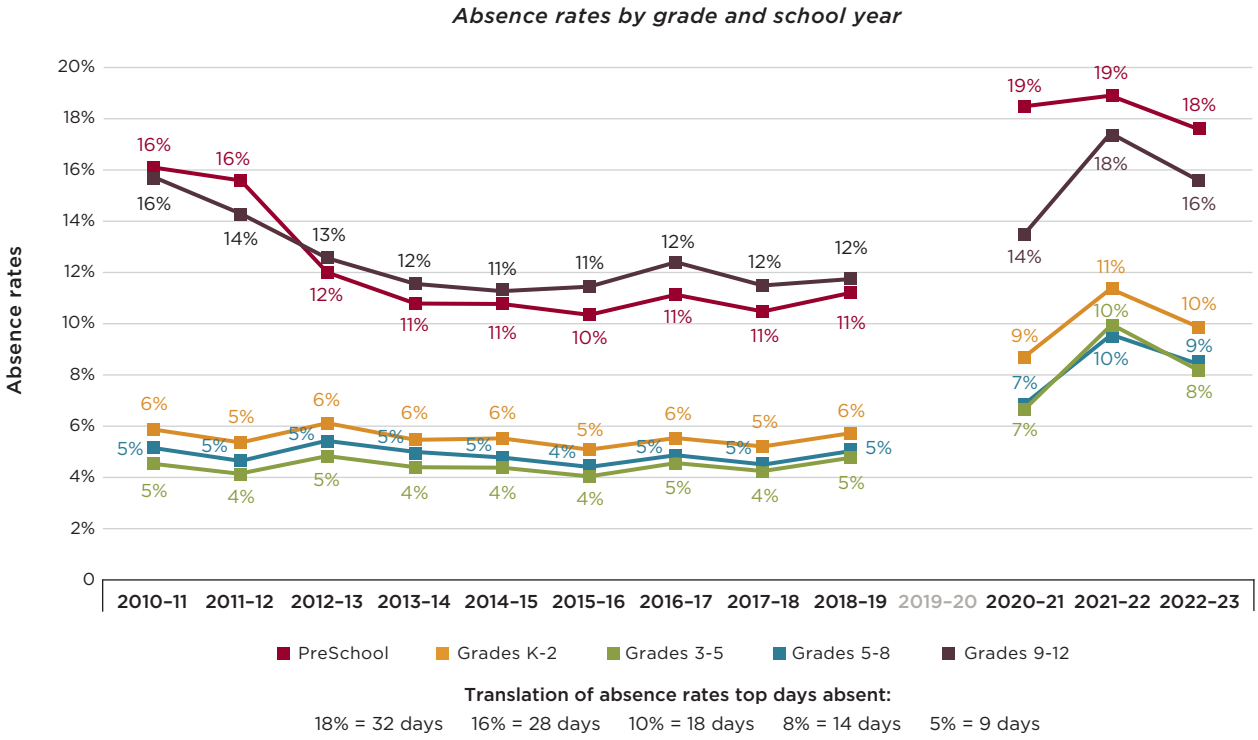
Absence rates increased considerably with the COVID-19 pandemic, peaking the year following the remote/hybrid year (2021–22).

Absence rates in CPS were fairly steady in the latter half of the 2010s. This followed an improvement in absence rates at the high school and preschool levels in the first part of the decade from 16% to 10%-12%, while elementary and middle grade rates hovered around 4% to 6% during the same period (**see Figure 1**). In the remote/hybrid year (2020–21), official absence rates increased considerably in all grade levels, by 2-7 percentage points. They increased even further the next year (2021–22), when students returned to fully in-person learning, but schools, students, and families were still struggling with the demands and uncertainties of the pandemic. In 2022–23, there was a slight improvement, but attendance rates were 3-6 percentage points higher than they were in 2018–19. Five percentage points is equivalent to missing nine days of school. In the 2022–23 school year, the average high school student was counted as absent 18% of days, which is equivalent to 32 days of school.

The increases in absence rates in Chicago were mirrored in national trends, where schools saw a large increase in absences in 2020–21, and another large increase in 2021–22.[11] For states where data are available, there was a slight improvement in 2022–23, but absence rates remained high in those states, as they did in Chicago.[12] This is an issue that affects schools across the country.

FIGURE 1

Absence rates have not recovered from the increases during and after the remote/hybrid year



Note: Figure 1 is based on CPS public-use data on attendance rates by grade; see https://www.cps.edu/about/district-data/metrics/. These are the unweighted averages of the grades represented in each line (i.e., absence rates for grades 9-12 averaged together). Absence rates are not included for the 2019–20 school year, because once the district went remote in spring 2020, it no longer required schools to collect student attendance data for the remainder of the school year. Instruction was remote in the 2020–21 school year, and in-person in all other years.

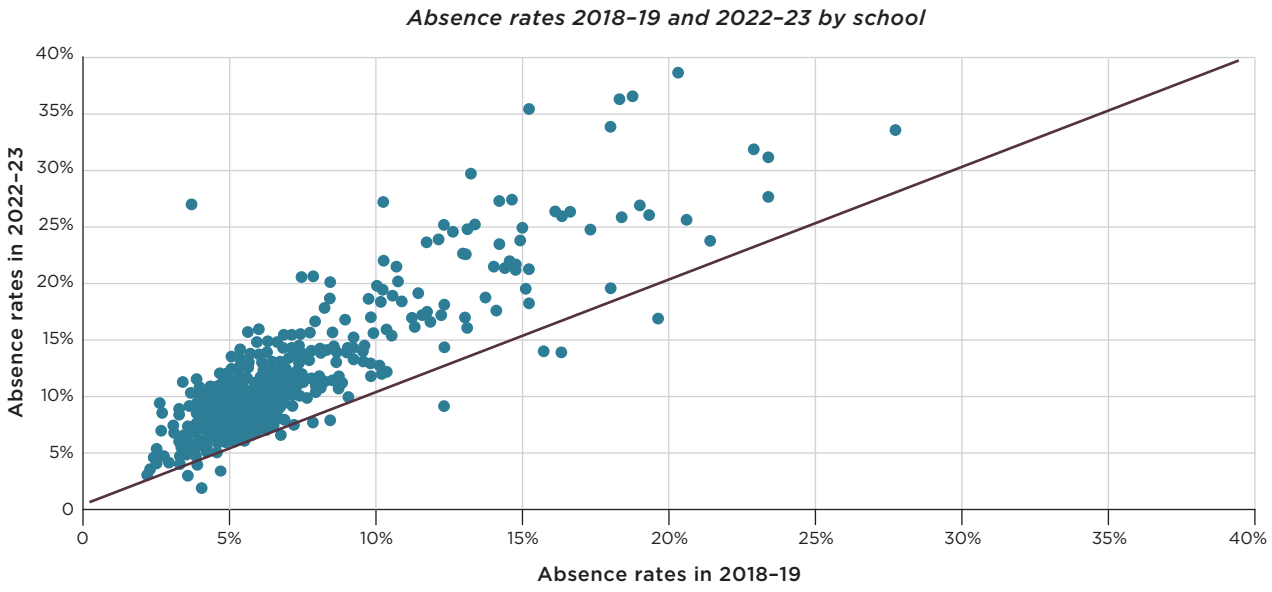
11 See, for example, Attendance Works (n.d.).
12 See, for example, Attendance Works (2023).

Changes in absence rates from 2018–19 to 2022–23 varied by school

Although absences improved during the 2022–23 school year (as shown in **Figure 1 on p.5** by a downtick in absence rates at all grade levels between 2021–22 and 2022–23), they were still higher, on average, than before the pandemic. The amount by which absences changed between 2018–19 and 2022–23 varied considerably by school. **Figure 2** shows absence rates before and after the pandemic. Each dot represents a school, and the dot's vertical distance from the diagonal line shows how much absence rates changed in that school between the two years. Dots that are above the line represent schools where absences increased, while dots below the line represent schools where absences declined, and dots on the line represent schools with no change in absence rates between the two periods. Out of the 603 schools shown, absences were about the same at 77 schools in 2022–23 as in 2018–19—increasing by less than two percentage points, staying exactly the same, or slightly declining (by as much as three percentage points). Many CPS schools (332 schools) experienced moderate increases in absence rates, of between two and five percentage points, from 2018–19 to 2022–23. Still other schools had large increases in absences, with 169 schools showing increases of more than five and up to 10 percentage points, and at 25 schools absence rates increased by more than 10 percentage points. A number of the schools with the smallest increases in absences (with no increase or less than 2% increase) were selective schools (e.g., King, Bronzeville, Hancock, and Payton High Schools). At the same time, there were schools with small and large changes in absences among schools with both high and low absence rates in 2018–19.

FIGURE 2

Changes in attendance relative to pre-pandemic years vary considerably across schools



Note: Figure 2 shows attendance rates in 2018-19 and 2022-23 for 603 CPS elementary and high schools, including charter and contract schools. The data shown here excludes Options schools and special education schools. Attendance rates for each school come from the CPS public-use data file which can be found at https://www.cps.edu/about/district-data/metrics/.

1B: K-12 participation in remote learning

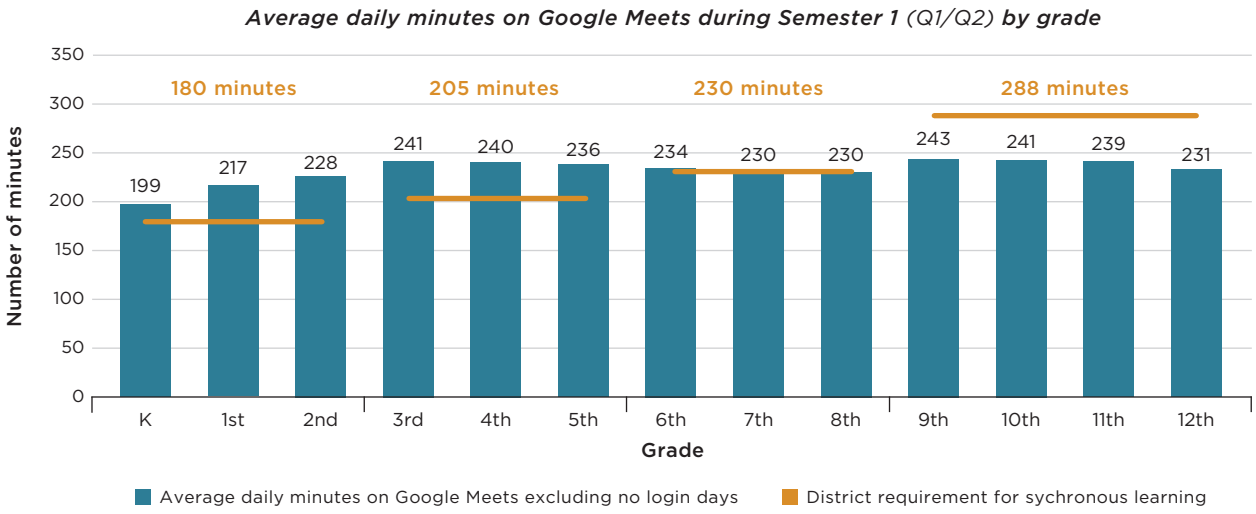
During the remote/hybrid school year (2020–21), students at all grade levels spent approximately four hours in synchronous instruction.

School attendance had a different meaning during the remote/hybrid year than all other years. Remote instruction consisted of students logging into the Google Meets platform, participating in synchronous in-person instruction, and doing asynchronous learning activities on their own, for a specified number of minutes each day. The number of minutes students were expected to engage in online learning varied by grade level. **Appendix A provides details about the requirements.** By examining how often students logged onto the Google Meets platform and how long they were logged on with a staff member present, we can see the specific ways that students engaged in remote learning by grade level.

Figure 3 shows the average number of minutes students spent in synchronous instruction via the Google Meets platform with a staff member present, alongside the district requirements for each grade. Students in grades K-5 spent about 20 to 50 minutes more time in synchronous instruction each day than the district-required 180-205 minutes. Students in grades 6-8 spent about 230 minutes in synchronous instruction each day, matching district requirements. High school students typically spent less than 243 minutes in synchronous instruction each day, about 45-60 minutes less than the district requirement. Note that these are averages—individual students' and different schools' averages—varied considerably. **But regardless of requirements, students at all grade levels were engaged in synchronous instruction for about four hours a day (240 minutes).** The exception was kindergarteners and first-grade students, who spent an average of 199 minutes and 217 minutes, about 3.5 hours, in instruction each day.

FIGURE 3

Students participated in online synchronous instruction for about four hours a day, across grade levels



Note: Figure 3 shows the average number of minutes students spent logged into Google Meets each day when a staff member was present, excluding days in which students did not log in. It also includes district requirements for the number of minutes students should spend in synchronous learning each day, which differed by grade level. Analyses are based on 270,061 students who were enrolled for at least 20 days during the first semester of 2020–21 in grades K-12. We limit analyses to first semester logins (i.e., September 8, 2020 to February 4, 2021) since nearly all students were remote during this timeframe. Students in charter schools, contract schools, special education schools, and Options schools were not included since these schools were allowed to choose their own platforms for remote learning or had different remote learning requirements.

1C: High school participation in remote learning

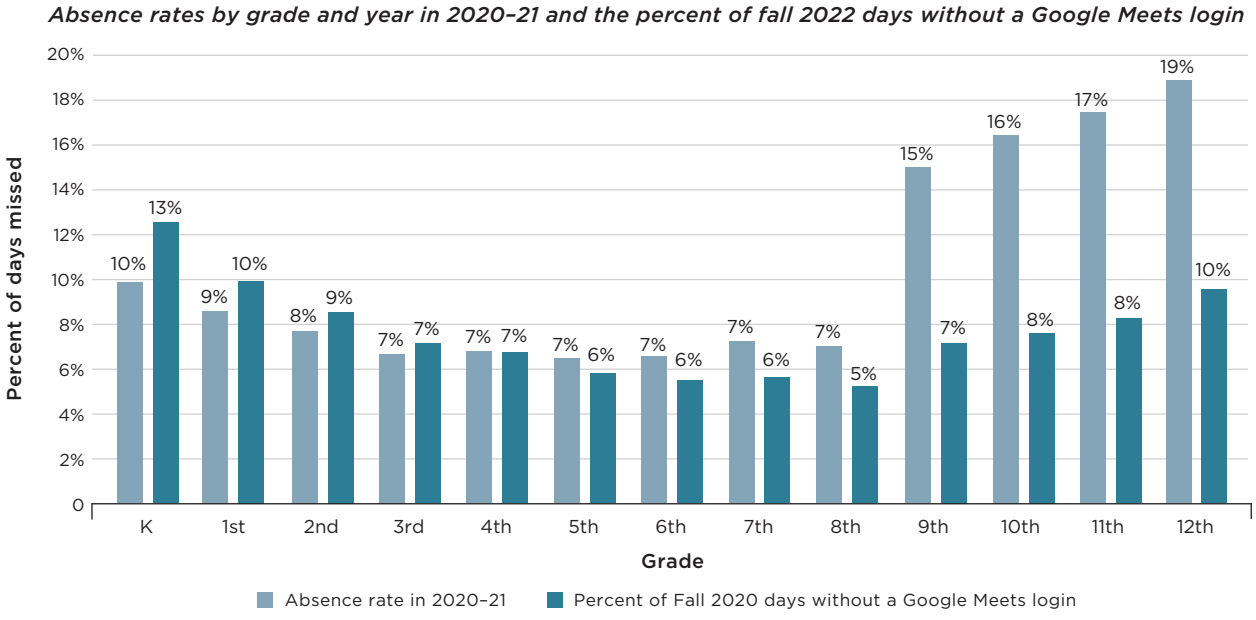
High school students participated in synchronous remote instruction on more days than they were counted present for school.

The large rise in absences among high school students shown in **Figure 1 on p.5** seems to have been driven by students spending less than the required number of minutes in synchronous instruction, rather than missing entire days of school. **Figure 4** shows official absence rates for school year 2020–21, which was the remote hybrid year, along with the percentage of days students did not log into Google Meets with a staff member present in the fall of 2020. We only examine Google Meets logins for the fall semester because instruction was remote for students at all grade levels only in the fall. Official absence rates were only available for the full year. So, when we compare the days with no Google Meets login to the absence rates, we are comparing differences in the fall when learning was fully remote to differences across the entire year that included both remote and hybrid instruction, as well as using different means for calculating attendance.

Official year-long absence rates for high school students in the 2020–21 school year ranged from 15% to 19%. The proportion of days in fall 2020 without a Google Meets login was about one-half the absence rate for high school students, ranging from 7-10%. This suggests that either students attended school much less in the spring than in the fall, or that high school students were often counted as absent during remote learning in the fall because they did not participate for the required number of minutes. As shown in **Figure 3 on p.7**, the

FIGURE 4

Middle grade and high school students participated in synchronous instruction on more days than they were counted present during remote learning



Note: Absence rates from the 2020–21 school year are based on 270,981 students who were enrolled for at least 20 days during the school year in district-run schools only. Students in charter schools, contract schools, Options schools, and special education schools were not included in this figure because they were not required to participate in the Google Meets platform or had different requirements. The percent of days without a Google Meets login is only calculated for the fall semester when all instruction was remote; many students moved to hybrid instruction in the spring semester at different times based on grade level.

average number of minutes that high school students participated in synchronous online instruction was lower than what was required. This would lead them to be counted as absent, even though they averaged over 230 minutes of synchronous online instruction on the days they participated at all.[13]

Middle school students also logged into Google Meets on more days than they were counted present in school, but differences between the rates were small (1-2 percentage points); the average number of minutes they participated in synchronous instruction was similar to what was required for full-day attendance at their grade level.

In the early elementary grades (K-2), the percentage of school days without a Google Meets login in the fall semester was larger than the absence rate for the year. Differences between the two rates were largest for kindergarten students (13% vs. 10%). This suggests that students in the youngest grade were absent from instruction on more days in the fall semester, when instruction was fully remote, than in the spring when in-person instruction resumed.[14]

Absence rates and Google Meets participation rates were both predictive of students' grades under remote learning.

When the pandemic hit and students were no longer coming to school, school practitioners and partners who use school attendance to identify students for additional support asked us:

Did students' attendance remain predictive of their grades? Or was students' remote learning participation related to their grades differently than it had been during pre-pandemic in-person learning?

We found that the relationships between attendance (measured as official attendance, or time in synchronous instruction) and course grades were as large or larger during the remote/hybrid year as in pre-pandemic years. **This means that attendance during remote learning could continue to be used as an effective indicator** to identify students who were at risk of failing courses during remote learning. See Appendix B for more details.

13 An alternative explanation for the patterns is that absence rates were much higher in the spring than in the fall, contributing to higher overall absence rates during the remote/hybrid year than indicated by fall semester Google Meets logins. However, this seems less plausible, as it would imply high school students were absent from instruction three times more often in the spring term than in the fall.

14 The school year 2020-21 absence rate is a combination of the fall and spring semesters. In kindergarten, if students were absent 13% of days from remote instruction in the fall, their spring absence rates would need to be 7% to produce a full-year absence rate of 10%.

Research Question 2

What happened to students' reports about their school experiences?

In the decade prior to the COVID-19 pandemic, there were sizable improvements in the learning conditions in CPS schools, with sharply rising graduation rates, test score gains that were at the 96th percentile of all districts in the country, and increasingly positive reports about school conditions from students and teachers on the *5Essentials* Surveys.[15] The COVID-19 pandemic disrupted in-person instruction for a year, and brought new stresses to students, families, and school staff. Here, we look at what happened to students' experiences in school in the remote/hybrid year (2020–21), and their experiences in the two subsequent years vs. pre-pandemic experiences.[16]

RQ2 Findings

A. Relationships with teachers, peers, and parents: In the remote/hybrid year, students reported feeling more supported by teachers and peers. Yet, particularly in elementary school, they also reported lower levels of instructional quality. Middle-grade students reported a decline in support from parents.

In the subsequent two years, when students returned to in-person schooling, reports from high school students on most aspects of schooling (e.g., relationships with teachers and peers, instructional experiences) either remained high or returned to pre-pandemic levels, while they fell below pre-pandemic levels in elementary schools.

B. Social skills, perseverance, and study habits: Student reports of their social skills, perseverance, and parent support were declining prior to the pandemic, then declined considerably in the remote/hybrid year, and remained at 2011 levels or lower in the two following years. Study habits for middle school students also followed this pattern but for high school students, reports of study habits spiked up in the remote/hybrid year but returned to pre-pandemic levels by 2023.

C. Instructional experiences and academic engagement: Student reports about instructional experiences and engagement have not recovered to the high levels observed just before the pandemic but are mostly above 2011 levels.

15 See Bryk, Greenberg, Bertani, Sebring, Tozer, & Knowles (2023) and Reardon & Hinze-Pifer (2017).

16 Responses rates on the student version of the *5Essentials* Survey were around 80% in pre-pandemic years (2011 through 2019). In 2021, 2022, and 2023, response rates were 59%, 71%, and 75% respectively. Details on the questions asked on the survey to measure specific constructs are available in Appendix C. Note that student survey reports were only available for all years for students in grades 6-12, so we cannot report on the experiences of the youngest learners.

2A: Relationships with teachers, peers, and parents

Students reported stronger relationships with teachers and peers during the remote/hybrid year.

Figure 5 shows changes in student survey reports on select survey measures about their relationships with teachers, peers, and parents with 2011 as the baseline, calculated separately for students in the middle grades (6-8) and students in the high school grades (9-12). From 2011 to 2017, a period of improving achievement in CPS, students reported increasingly more trust of their teachers (referred to as Student-Teacher Trust in Figure 5), and more personalized academic support from their teachers (Academic Personalism).[17]

When the COVID-19 pandemic hit and learning went remote, students reported even higher levels of support from teachers and peers than in pre-pandemic years, especially high school students. Academic Personalism, Student-Teacher Trust, and Peer Relationships improved by 0.13, 0.17, and 0.30 standard deviations (s.d.), respectively, at the high school level from 2019 to 2021, reaching levels that were 0.40 s.d. above reports in 2011. Middle grade students also reported stronger Student-Teacher Trust during the remote/hybrid year (improving by 0.07 s.d. from 2019 to 2021) and in Peer Relationships (by 0.17 s.d.)—levels that were 0.24 to 0.30 s.d. higher than in 2011.[18]

These improvements in students' perceptions of their relationships with teachers and peers did not continue once students returned to in-person schooling in 2021–22. At the high school level, student reports of relationships with teachers returned to pre-pandemic levels. At the middle grade level, students' reports about their relationships with their teachers and peers declined below what they were in 2019, to levels that were as low as they were in 2011. Nevertheless, middle school students were still generally very positive about the degree to which they trusted their teachers and reported strong academic personalism. On each of the questions asked about student-teacher trust, 67-91% of students either agreed or strongly agreed with statements such as, "my teachers treat me with respect" (89% agree) and "my teachers will always listen to students' ideas" (81% agree). The reported scores were lower because there were fewer students who strongly agreed to the statements more so than switched their responses from agree to disagree. While this indicates a shift for some students in the strength of their feelings, overall the vast majority of students continued to trust their teachers. **See Appendix D on p.26–27** for the responses of students on the questions in selected survey measures in 2019 to 2023 among students in the middle grades.

17 By 2017, students' trust in teachers had increased by 0.24 s.d. and Academic Personalism (the degree to which teachers provide personalized academic support) increased by 0.19 s.d. among students in the middle grades, and by 0.21 s.d. and 0.13 s.d., respectively, among high school students. For context, a difference of 0.24 s.d. would be like moving from the 50th to the 60th percentile. Students also reported somewhat more supportive relationships with peers (Peer Relationships) in 2017 compared to 2011 (increases of 0.17 and 0.13 s.d. in middle and high school grades, respectively).

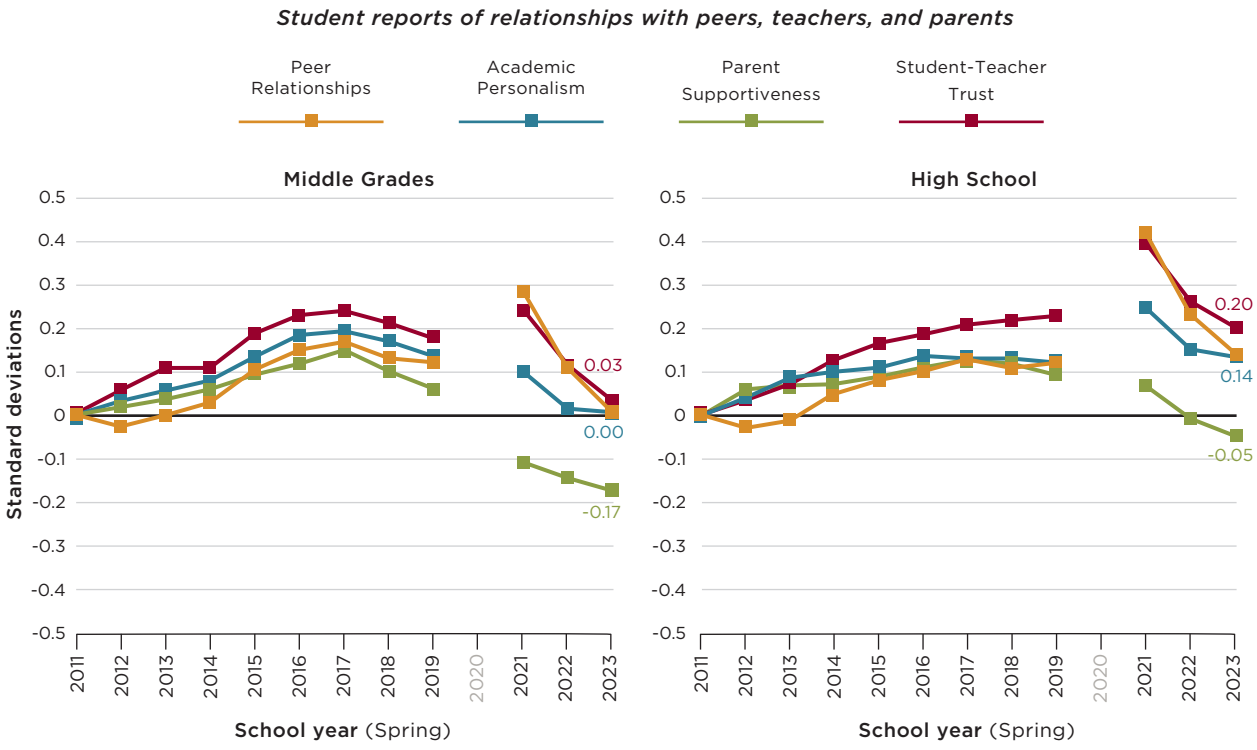
18 We consider changes in survey measures to be meaningful when the difference is +/- 0.2 s.d. or larger.

Students' reports of support from parents declined with the pandemic, especially among middle-grade students.

Remote/hybrid instruction put new demands on parents to facilitate, encourage, and support student learning at home, while also adjusting to changes in their own support systems, responsibilities, and work expectations brought by the pandemic. These changes seem to have influenced the degree to which students felt supported by their parents. As shown in **Figure 5**, middle grade students' reports about support from their parents (Parent Supportiveness) improved from 2011 to 2017 but declined in the years immediately preceding the pandemic. When the pandemic hit and schooling went remote/hybrid, there was a decline in middle grade students' report of support from parents (declining by 0.17 s.d. from 2019 to 2021). The return to in-person schooling did not lead to improvements in parent support—middle grade students' reports of parental support continued to decline in school years 2021–22 and 2022–23, ending 0.17 s.d. below what they were in 2011. High school students did not report much of a change in parent support during the remote learning year, but did report less parent support in the following two years, to levels slightly below those in 2011. As with reports about teacher relationships, parent relationships scores were lower than they were in 2011, but students still generally reported that their parents were supportive. In 2023, just under 80% of middle grade students agreed with statements such as their parents "show they are proud of you" and "listen to you when you need to talk." (**See Table D.3. in Appendix D** for details.)

FIGURE 5

Students reported higher levels of support from teachers during remote learning, while reports of relationships with parents declined



Note: Figure 5 shows trends in survey measures for students in grades 6-8 (middle grades) and students in grades 9-12 (high school) in which each measure is compared to its level in 2011. The absolute levels cannot be compared between the middle grade and high school figures. The total number of respondents each year ranged from 138,425 to 168,648. Years are labeled with spring of the academic year, which is when surveys were taken (e.g., 2023 for the 2022–23 school year). No survey data is shown for spring 2020, because the survey was suspended that year due to the pandemic.

2B: Social skills, perseverance, and study habits

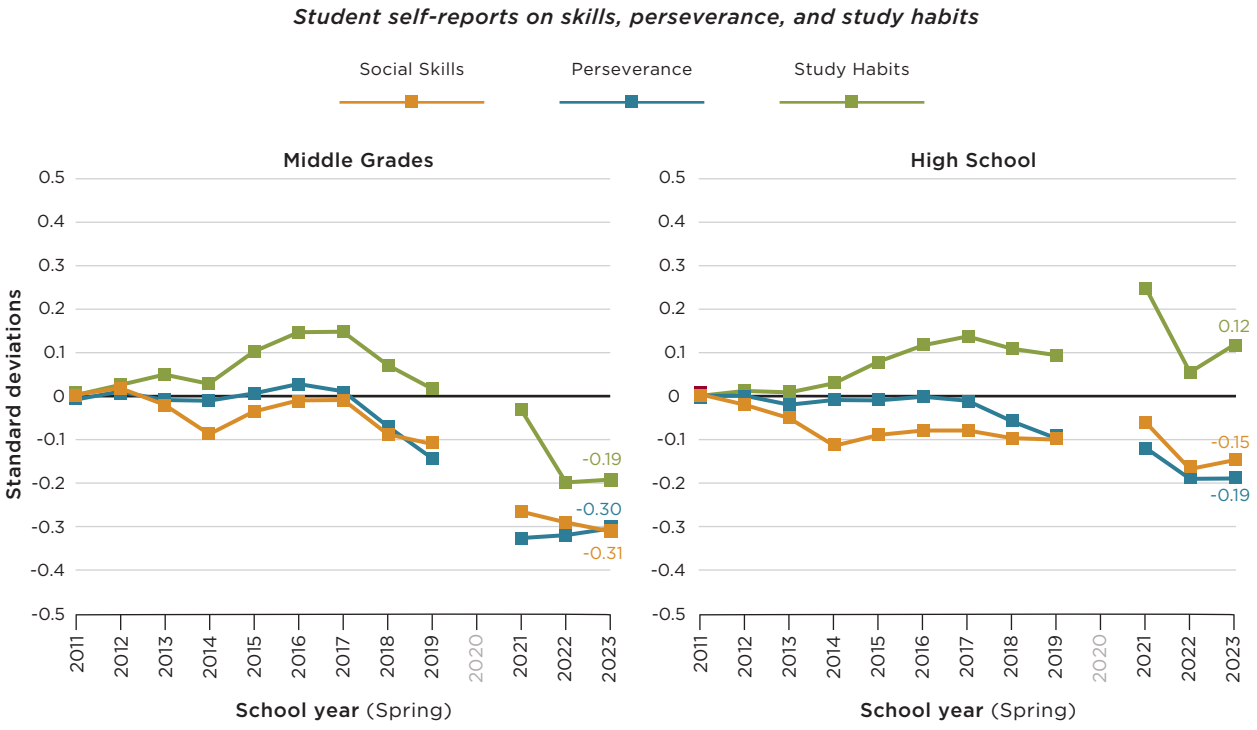
Students' reports about their social skills and perseverance have been declining, especially in the middle grades.

These trends started pre-pandemic, around 2017, at both grade levels (**see Figure 6**). They declined even more at the middle grade level during the remote/hybrid year, falling by 0.16 s.d. and 0.19 s.d. from 2019 to 2021. Students continued reporting lower levels of social skills and perseverance through the 2022–23 school year, at levels that were about 0.30 s.d. below what they were in 2011.[19]

High school students' reports about their social skills and perseverance were similar in the remote/hybrid year as in the years immediately before the pandemic, but trends for these measures had also been declining over time and fell further in the two years after the remote/hybrid year, ending at 0.15 s.d. and 0.19 s.d. below 2011 levels, respectively.

FIGURE 6

Students reported declining social skills and perseverance, accelerating with the pandemic



Note: Figure 6 shows trends in survey measures for students in grades 6-8 (middle grades) and students in grades 9-12 (high school) in which each measure is compared to its level in 2011. The absolute levels cannot be compared between the middle grade and high school figures. The total number of respondents each year ranged from 138,425 to 168,648. Years are labeled with spring of the academic year, which is when surveys were taken (e.g. 2023 for the 2022–23 school year). No survey data is shown for spring 2020, because the survey was suspended that year due to the pandemic.

2C: Instructional experiences and academic engagement

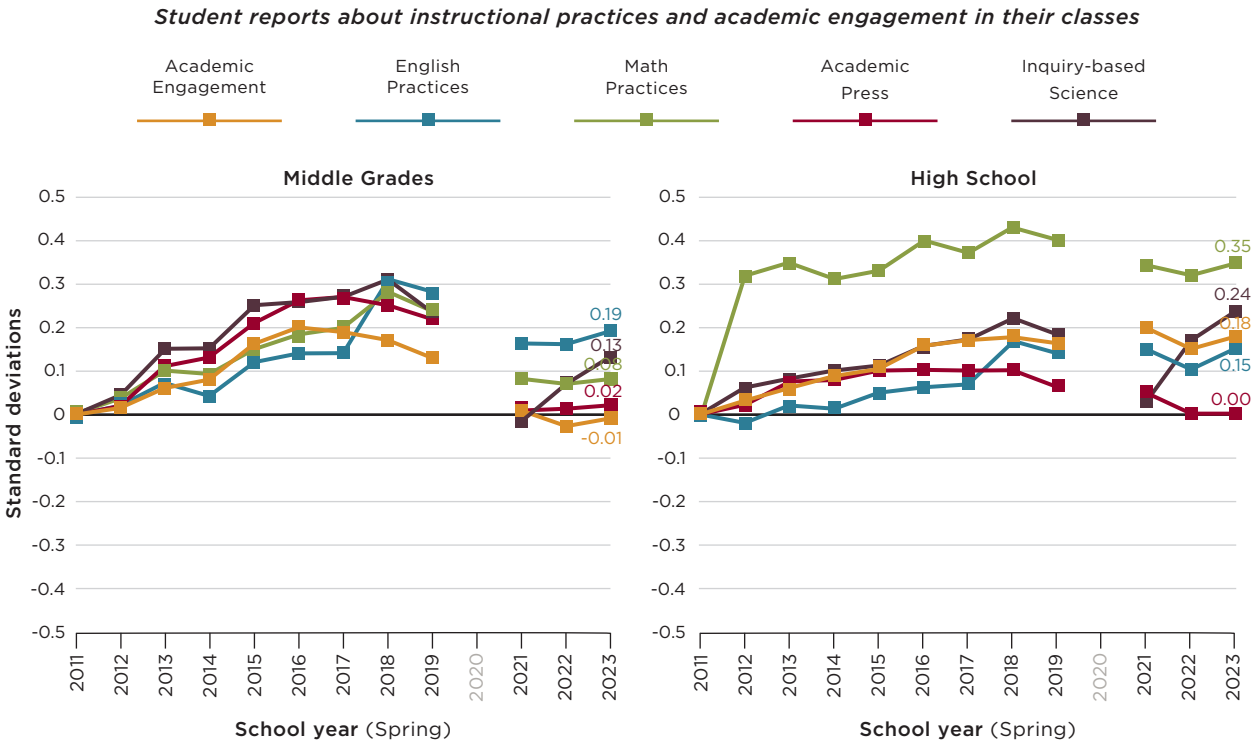
Student reports about instructional experiences and engagement have not recovered to the high levels observed just before the pandemic but are mostly above 2011 levels.

From 2011 to 2018, students' reports about the instructional quality in their classes increased considerably. The quality of math and English instruction (referred to as "Math Practices" and "English Practices" in **Figure 7**), and the degree to which students reported feeling challenged to work hard (Academic Press) in the middle grades improved by over a quarter of a standard deviation from 2011 to 2018.[20] This is equivalent from moving from the 50th percentile to about the 60th percentile. There were also improvements in instructional measures in the high schools from 2011 to 2018.[21] Thus, the COVID-19 pandemic occurred after a period of considerable improvement in instructional quality at the middle grade level and moderate improvements at the high school level.

During the remote/hybrid school year (2020–21), all measures of student-reported instructional quality declined considerably at the middle grade level. Students reported that they engaged less frequently in strong instructional practices in science, math, and English

FIGURE 7

Students' reports about classroom instruction did not return to the high levels reported in the years immediately before the pandemic



Note: Figure 7 shows trends in survey measures for students in grades 6-8 (middle grades) and students in grades 9-12 (high school) in which each measure is compared to its level in 2011. The absolute levels cannot be compared between the middle grade and high school figures. The total number of respondents each year ranged from 138,425 to 168,648. Years are labeled with spring of the academic year, which is when surveys were taken (e.g. 2023 for the 2022–23 school year). No survey data is shown for spring 2020, because the survey was suspended that year due to the pandemic.

20 Improvements were 0.31, 0.28, 031, and 0.25 s.d. in English, math, science, and academic press, respectively.

21 Improvements were 0.17, 0.43, 0.22, and 0.10 s.d. in English, math, science, and academic press, respectively.

than in 2019. The largest change occurred in science, followed by math, and then English.[22] The degree to which students said they were pressed to work hard declined more than any other measure, back to levels seen in 2011. Middle grade students also reported considerably less engagement in their classes in the 2021 survey, declining to slightly below the levels reported in 2011.[23] In-person instruction resumed the next two years, but students' reports about the quality of instruction remained at the same levels as during the remote learning year for middle grade students—with the exception of science instruction, which showed improvements relative to the remote/hybrid year.

At the high school level, instructional quality changed much less through the pandemic years than at the middle grade level. The biggest change was in the frequency of inquiry-based practices in science which declined considerably during the remote/hybrid year (back to 2011 levels), but returned to pre-pandemic levels in the two subsequent years. The quality of English instruction and students' overall academic engagement declined slightly in 2020–21, but then returned to pre-pandemic levels at the high school level. There was a modest decline in the frequency in which high school students engaged in high-quality practices in math in the remote learning year (by 0.07 s.d.), which remained lower in the two subsequent years. High school students' reports of being pressed to work hard had started to decline just prior to the pandemic, did not decline during the remote/hybrid year, but then declined again in the subsequent two in-person years, back to 2011 levels.

22 Declines were 0.12, 0.16, 0.25 and 0.20 s.d. in English, math, science, and academic press, respectively.

23 Engagement declined 0.11 s.d. from 2019 to 2021.

Interpretive Summary

Maintaining strong instruction and support for students early in the pandemic was an unprecedented challenge, feeding concerns about students' opportunities to learn. These concerns have continued in more recent years as schools across the country are working to address high rates of absence, and to regain the achievement levels observed just prior to the pandemic. In Chicago, school absence rates continue to be high, and at the same time many students' reports about their school experiences are down, relative to pre-pandemic years. However, while students' reports of their school experiences have declined compared to the high levels reported in the years just before the pandemic, most are still at or above what students reported in 2011.

School attendance remains below pre-pandemic levels, with potential ripple effects for instructional rigor.

Absences increased dramatically the year that students in all grades returned to in-person schooling in CPS (2021–22). That year, there were continued COVID-19 outbreaks and health protocols asked students and staff to stay home when sick. Families had to deal with transportation issues with continually changing circumstances both in schools and in the workplaces of adults. It is not surprising that school absence rates were high, but it is concerning that they continued to be almost as high the subsequent year. It is also notable that the changes in attendance differ considerably by school, suggesting that school policies and practices influence attendance rates even as national trends lead them to be higher.

Attendance issues affect individual students' opportunity to learn, and when many students are frequently absent, it can undermine the quality of instruction for all students. When students do not come to school every day it can be difficult to ask them to do challenging work, and teachers have to help students who missed school catch up. The effects are reciprocal, since a lack of academic challenge can lead students to think they won't miss much if they are absent. We see evidence that this is happening in schools, based on students' reports of academic press in the middle grades and high school level, and even more evidence in the middle and elementary grades from students' reports of their study habits and academic engagement. Improving attendance requires clear messages about why it is important, and strategies to address the barriers that many students face.[24] Efforts to improve attendance in the past were successful, and by reaching out to students and providing supports for their needs so they could engage in school, teachers and school staff also built stronger relationships with students and families.[25]

Instructional quality has been improving post-pandemic, although there are still areas of concern.

It was difficult for students to engage as frequently in high-quality instructional practices during remote learning as during in-person learning. This can be seen in the changes in students' reports about instructional quality, especially in math and science. In the years since, English and science instructional quality have rebounded to pre-pandemic levels. The quality of math instruction had not yet recovered to what it was just before the pandemic. Just prior to the pandemic, from 2015 to 2018, district investments in support for math instruction led to large improvements in practices, and students with the lowest tested skills benefited the most from these efforts.[26] There may be a need for concerted supports around high-quality practices in math that are similar to the efforts that occurred before. More concerning are students' reports of academic

24 Jordan (2023).
25 Philips (2019); Roderick, Kelley-Kemple, Johnson, & Beechum (2014).
26 Allensworth, Cashdollar, & Cassata (2022).

engagement in the middle grades, and academic press at all grade levels. Instructional quality has resumed in terms of practices, but has not yet returned to the high levels observed just prior to the pandemic in terms of students' overall experiences.

The pandemic accelerated downward trends in students' reports of their social skills, perseverance, and parent support, especially at the middle grade level.

Students' reports of their social skills, their perseverance on tasks, and their support from parents began to decline before the pandemic, and then markedly declined starting in 2020. Much has been written about the national mental health crisis that exists among youth and adults, and it may be tempting to see these outcomes resulting from the pandemic alone. But there are many potential sources of influence on students' and parents' mental health that could have been accelerated by the pandemic—the influence of social media, the Internet, and digital media, substance abuse crises, loss of family members, continued health effects from the pandemic (e.g., long COVID), and disruption on work, family routines, and social interactions. In the remote/hybrid year, teachers and peers rallied around each other because there was such a clear need for support. There seems to be just as much of a need now for prioritizing emotional supports and relationships for students, parents, and teachers, and understanding how they are experiencing their classes and the school environment.

What have we learned that could guide remote policies and practices if needed again in the future?

The human experience took priority during the pandemic, with noticeable results.

Educators and families recognized that students' needs for both emotional and academic support were much higher in the context of the pandemic. Attention to students' emotional needs is critical for students to be able to engage in academic work, and for students' healthy development overall.[27] Teachers had to develop new strategies for connecting with students long-distance.[28] These findings suggest that those efforts paid off for many students, with stronger reports of teacher-student relationships during the remote/hybrid year than in pre-pandemic years, especially among high school students. Students also felt more positively about their peers, and felt peers provided more support for academic work and more positive relationships than students reported in the past.

With the elevated support, high school students were able to manage the remote context. Course grades improved for high school students during the remote/hybrid year while declining, on average, in the elementary grades.[29] Academic demands, study habits, and teacher support are all factors that influence student grades.[30] High school students put more emphasis on studying and had much more support from teachers and peers. High school students were likely more able to engage in academic work without a staff member present than students in the elementary grades, doing asynchronous work on their own or with peers—declines in academic demands and instructional quality were smaller at the high school level than in the middle grades, and student engagement did not decline among high school students. A statewide examination of test scores suggested that the decline in high school students' scores during the pandemic was less dependent on the mode of instruction (in-person vs. virtual) than were elementary students' scores.[31] With the elevated support, high school students were able to manage the remote context to largely engage in learning—although for a more limited number of hours per day than during in-person schooling, and with more limited participation in high-quality instructional tasks.

There seems to be a natural threshold for the amount of time students spend in a virtual learning environment.

Students in grades 3-12 participated in online synchronous instruction with an adult present an average of about four hours per day, regardless of their grade level

27 Allensworth et al. (2018).
28 Orta & Gutiérrez (2022).
29 Gwynne et al. (2022).
30 Hart, Young, Chen, Zou, & Allensworth (2020).
31 Cashdollar, Wang, Barragan Torres, & Bates (2022).

and what was required. For high school students, this was less than the required minutes, for elementary students it was more than required. More than four hours may have been too much for high school students.

Attendance rates and time spent in online instruction were at least as predictive of students' course grades during remote learning as attendance was in pre-pandemic years. Attendance continued to be predictive of students' course grades during the pandemic. And participation rates in the online learning platform showed a similar relationship with students' grades as attendance did in years prior to the pandemic. When the pandemic hit, there was no guidance on whether student attendance could still be used as an early warning indicator of students' risk of failing courses, and whether participation in the online learning environment would be an alternative metric that schools could use as an indicator of student engagement in learning. The results of this study suggest that schools can continue to rely on attendance data to identify students at risk of failing should remote learning occur again.

Subjects other than math and English may have needed more support than available.

There has been considerable attention on math and English, because those are tested subjects for which post-pandemic data have been released,[32] but the more sizable decline in inquiry-based instructional practices in science is a reminder that students may have missed out on even more content in other subject areas during the remote learning year. The remote context likely required large changes in science instruction delivery and made it extremely difficult to conduct engaging hands-on learning experiences. The 2022 Consortium report on students' remote-learning grades found that elementary grade students completed one course less, on average, during the remote learning year, and these courses were most often non-core courses, such as physical education, art, and music. It is important not to lose sight of students' growth across subject areas with the emphasis on accelerating learning in math and reading.

Supporting schools and families under remote learning was complex, and requires varied, tailored efforts.

The demands on teachers and families with the transition to at-home virtual learning were sudden and large. Each person had to figure out how to engage and support students given their own personal conditions and constraints. While there were many factors that come into play supporting teachers and families during remote learning, survey data provides some insight on measures of school climate connected to support and outcomes. In some schools, there seem to have been stronger communities of support and collaboration that helped; however, in many schools there may have been too many demands for teachers and families to be able to provide sufficient support to each other. This suggests a need for school-by-school monitoring and support, beyond any universal strategies.

Several years after the onset of COVID-19 pandemic, schools are still grappling with its aftermath, working to restore student learning, school attendance, instructional rigor, and school climate to pre-pandemic levels. At the same time, undergirding these interconnected issues is a growing awareness of the need to attend to the emotional well-being of teachers, students, and, families. Yet schools are having to do more with less as federal pandemic funding has wound down. As districts and schools consider the best way to allocate existing resources, they could also consider how to expand partnerships with key stakeholders, including local philanthropic organizations, community-based organizations, and health and mental health professionals. Formalizing and strengthening ties between these groups may provide a critical structure for bolstering schools with additional supports to share in the load of tackling some of these issues.

32 The U.S. Department of Education has not released results on the NAEP science exam since 2019.

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Appendix A

Attendance Requirements for Remote Learning During School Year 2020–21

Tables A.1 and A.2 show requirements for instructional learning time and for attendance during school year 2020–21. In a typical school year, Illinois State law requires students to receive at least 300 instructional minutes each day; students are counted as present for a full day when they participate in all 300+ minutes and they are counted as present for a half day when they participate in 150-299 instructional minutes; participation of less than 150 minutes is counted as a full day absence (**Table A.1**).

During the 2020–21 school year, the attendance policy was adjusted out of recognition of the challenges associated with learning remotely. Instructional time consisted of synchronous and asynchronous time, the combination of which was expected to be 360 minutes for students in kindergarten and above (**see Table A.2**). Students were required to participate in 100% of synchronous instruction each day to be counted as present; participation in less than 100% of synchronous instruction, but for at least 150 minutes, was counted as present for a half day and participation of less 150 minutes was counted as a full day of absence. The amount of synchronous instructional time provided each day varied by grade level.

TABLE A.1

Comparison of attendance requirements during remote learning (2020–21) and traditional years

Attendance	Remote Learning	Traditional Year
Full day of Attendance	100% of synchronous instructional minutes (varies depending on grade level—see Table A.2)	300 instructional minutes or more
Half day of Attendance	Less than 100% of synchronous instructional minutes but more than 150 synchronous instructional minutes	Between 150 and 299 instructional minutes
Full day Absence	Less than 150 minutes of synchronous instructional minutes	Less than 150 instructional minutes

Note: Attendance is taken once a day in elementary schools and during each period in high schools. Information received from CPS district personnel through personal correspondence.

TABLE A.2

Requirements for instructional learning during the 2020–21 school year.

Grade Level	Requirements
Pre-K	60 minutes of real-time instruction (***synchronous***) and 90 minutes of learning activities (***asynchronous***)
K-2	180 minutes of real-time instruction (***synchronous***) and 180 minutes of learning activities (***asynchronous***)
3-5	205 minutes of real-time instruction (***synchronous***) and 155 minutes of learning activities (***asynchronous***)
6-8	230 minutes of real-time instruction (***synchronous***) and 130 minutes of learning activities (***asynchronous***)
9-12	Real-time instruction (***synchronous***) will make up 80% of the school day with the remaining 20% saved for learning activities (***asynchronous***)

Note: Information received from CPS district personnel through personal correspondence.

Appendix B

Relationships of Absences and Google Meets Participation with Student Course Grades During the Remote/Hybrid Year

There was a strong relationship between students' absences and their course grades. The relationship between average number of minutes logged into the Google Meets platform in fall 2020 and fall course grades (**see Table B.1, row 2**) was about the same as the relationship between attendance and grades during in-person learning in 2018–19 (**row 1**). For students in grades 4-8, the correlations were around 0.30 (an absolute value of -0.31 and 0.30), while the correlations were around 0.5 for high school students (an absolute value of -0.58 and 0.47). The relationship between official absences and fall course grades was even stronger in 2020–21 than in 2018–19 for students in grades 4-12, with a correlation of -0.52 in the elementary grades and -0.70 in the high school grades, compared to -0.31 and -0.58 respectively in 2018–19.

TABLE B.1

Relationships between school attendance/participation and course grades were as strong or stronger under remote learning as in-person learning

Row	Time Period	Correlation between GPA and:	Grades 4–8	Grades 9–12
1	2018–19 School Year (Pre-pandemic)	Percent of days absent during school year	-0.31	-0.58
2	2020–21 School Year (Remote Learning)	Average number of minutes logged into Google Meets with a staff member present in fall 2020	0.30	0.47
3	2020–21 School Year (Remote Learning)	Percent of days absent during school year	-0.52	-0.70

Note: This table shows Pearson's correlation coefficients, which can range from -1 to 1; correlations between 0.10 to 0.29, or -0.10 to -0.29, indicate a modest relationship between two indicators, while correlations between .30 to .49 (or -0.30 to -0.49) indicate a moderate relationship and correlations of 0.5 and higher or (-0.5 and smaller) indicate a strong relationship. Coefficients describing the strength of the relationship between attendance in 2018–19 and students' full-year grade point average (GPA) are based on 115,546 students in grades 4-8 and 71,789 students in grades 9-12. Correlations between attendance in 2020–21 and students' full-year GPA is based on 110,563 students in grades 4-8 and 72,907 students in grades 9-12. Correlations between minutes logged into Google Meets and fall 2020 GPA is based on 110,628 students in grades 4-8 and 72,430 students in grades 9-12.

Appendix C

Survey Methodology, Response Rates, and Items

The analysis of survey trends uses Rasch measure scores for each student tied to administrative records on their background characteristics (e.g., grade level, race, ethnicity, gender, free or reduced-price lunch status, English Learner status, diverse learner status, and census variables on poverty, employment, and income in students' census blocks) so that we can adjust survey trends for any changes over time in the characteristics of students in the district. Student survey responses were weighted based on the standard error for each score, determined by completeness of their data and consistency of their response patterns, so more complete and consistent reports get more weight in trends. The model for discerning survey trends was comprised of 4 levels in an HLM: a measurement model correcting for fit inflated standard error (FISE), a respondent model controlling for *K* individual covariates as fixed effects, a year level from which the year-over-year change are collected with year indicators, and a school level, where the average score for each school is estimated. The main terms used for constructing trends are an intercept representing the baseline score for the first year, and year terms representing the change from the baseline score in that year. The subscript *i* refers to the student, *j* refers to school, and *t* to the year of the survey:

$$\frac{Measure_{itj}}{FISE_{itj}} = \psi_{itj} * \frac{1}{FISE_{itj}}$$

$$\psi_{itj} = \pi_{0tj} + \pi_{Ntj} * \sum_{k=1}^{K} \square\, covariate_{itjk} + e_{itj}$$

$$\pi_{0tj} = \beta_{00j} + \sum_{k=1}^{T} \square\, \beta_{0kj} * Year_{tj} + r_{tj}$$

$$\beta_{00j} = \gamma_{000} + u_j$$

Missing data analysis

The response rate on the student survey was much lower in 2021 than in previous years (59% in 2021 vs. 81% in both 2018 and 2019), potentially creating a biased sample in which survey respondents differ considerably from the full population of students who were eligible to take the survey. Following Zhang et al. (2019), we investigated the possibility of bias by calculating the standardized mean difference (SMD) between survey respondents and the full population of students in grades 4-12 on a series of background characteristics. The comparison included students who were enrolled in district-run and charter elementary and high schools, run separately for students in the middle grades and those in high school. Zhang et al. (2019) propose that a SMD exceeding +/- 0.1 on a given characteristic indicates that the two groups are not balanced on that characteristic. In our analysis, we found only one SMD that exceeded 0.10: survey respondents in grades 4-8 were less likely to have an identified disability, and the SMD between the respondents and the full population was 0.106, barely exceeding 0.10.

TABLE C.1

Survey measures and corresponding questions (items) measuring relationships with teachers, peers, and parents

Survey Measure	Questions in the Measure	Response Options
Peer Relationships	*How much do you agree with the following statements about students in your school? Most students in my school:* • Like to put others down. • Help each other learn. • Don't get along together very well. • Treat each other with respect.	• Strongly disagree, • Disagree, • Agree, • Strongly agree
Academic Personalism	*How much do you agree with the following statements about your [TARGET] class? The teacher for this class:* • Is willing to give extra help on schoolwork if I need it. • Helps me catch up if I am behind. • Notices if I have trouble learning something. • Gives me specific suggestions about how I can improve my work in this class. • Explains things in a different way if I don't understand something in class.	• Strongly disagree, • Disagree, • Agree, • Strongly agree
Parent Supportiveness	*How often does a parent or other adult living with you:* • Encourage you to work hard at school. • Support the things you like to do outside of school. • Listen to you when you need to talk. • Show they are proud of you. • Take time to help you make decisions.	• All of the time, • Most of the time, • Some of the time, • Never
Student-Teacher Trust	*How much do you agree with the following statements about your teachers: My Teachers:* • My teachers always keep their promises. • I feel safe with my teachers at this school. • I feel comfortable with my teachers at this school. • My teachers will always listen to students' ideas. • My teachers treat me with respect.	• Strongly disagree, • Disagree, • Agree, • Strongly agree

TABLE C.2

Survey measures and corresponding questions (items) capturing students' social skills, perseverance, and study habits

Survey Measure	Questions in the Measure	Response Options
Social Skills	*How much do you agree with the following:* • I'm good at working with students. • I'm good at helping other people. • I can always find a way to help people end arguments. • I listen carefully to what other people say to me.	• Strongly disagree, • Disagree, • Agree, • Strongly agree
Perseverance	*To what extent do the following describe you:* • I finish whatever I begin. • I am a hard worker. • I continue steadily toward my goals. • I don't give up easily.	• Very much like me, • Mostly like me, • Somewhat like me, • Not much like me, • Not at all like me
Study Habits	*How much do you agree with the following:* • I set aside time to do my homework and study. • I try to do well on my schoolwork even when it isn't interesting to me. • If I need to study, I don't go out with my friends. • I always study for tests.	• Strongly disagree, • Disagree, • Agree, • Strongly agree

TABLE C.3

Survey measures and corresponding questions (items) capturing instructional experiences and academic engagement

Survey Measure	Questions in the Measure	Response Options
Academic Engagement	***How much do you disagree or agree with the following statements about your [TARGET] class?*** • I usually look forward to this class. • I work hard to do my best in this class. • Sometimes I get so interested in my work I don't want to stop.	Strongly disagree, Disagree, Agree, Strongly agree
English Practices	***In your English class this year, how often do you do the following:*** • Discuss connections between a reading and real-life people or situations. • Rewrite a paper or essay in response to comments. • Discuss how culture, time, or place affects an author's writing. • Improve a piece of writing as a class or with partners. • Debate the meaning of a reading. • [GRADES 9-12 ONLY] Explain how writers use tools like symbolism and metaphor to communicate meaning	Almost every day, Once or twice a week, Once or twice a month, Once or twice a semester, Never
Mathematics Practices	***In your MATH class this year, how often do you do the following:*** • Write a few sentences to explain how you solved a math problem. • Explain how you solved a problem to the class. • Write a math problem for other students to solve. • Discuss possible solutions to problems with other students. • Apply math to situations in life outside of school. • [Grades 9-12 ONLY] Solve a problem with multiple steps that takes more than 20 minutes.	Almost every day, Once or twice a week, Once or twice a month, Once or twice a semester, Never
Inquiry-based Science	***In your SCIENCE class this year, how often do you do the following*** • Use laboratory equipment or specimens. • Write lab reports. • Generate your own hypotheses. • Use evidence/data to support an argument or hypothesis. • Find information from graphs and tables.	Almost every day, Once or twice a week, Once or twice a month, Once or twice a semester, Never
Academic Press	***How much do you agree with the following statements about your [TARGET] class? The teacher for this class:*** • Expects me to do my best all the time. • Expects everyone to work hard. • Wants us to become better thinkers, not just memorize things. ***How much do you disagree or agree with the following statements about your [TARGET] class?*** • This class really makes me think. • I'm really learning a lot in this class. ***In your [TARGET] class, how often:*** • Are you challenged? • Do you have to work hard to do well? • Does the teacher ask difficult questions on tests? • Does the teacher ask difficult questions in class?	Strongly disagree, Disagree, Agree, Strongly agree All the time, Most of the time, Once in a while, Never

Appendix D

Responses on selected survey questions in 2019 and 2023

The figures below compare student responses in 2019 and 2023 on survey questions comprising four survey measures: Student-Trust (**Figure D.1**), Academic Personalism (**Figure D.2**), Parent Supportiveness (**Figure D.3**), and Social Skills (**Figure D.4**).

FIGURE D.1

Students were less likely to answer "strongly agree" and more likely to answer "agree" in 2023, compared to 2019 to each of the items included in the Student-Teacher Trust measure.

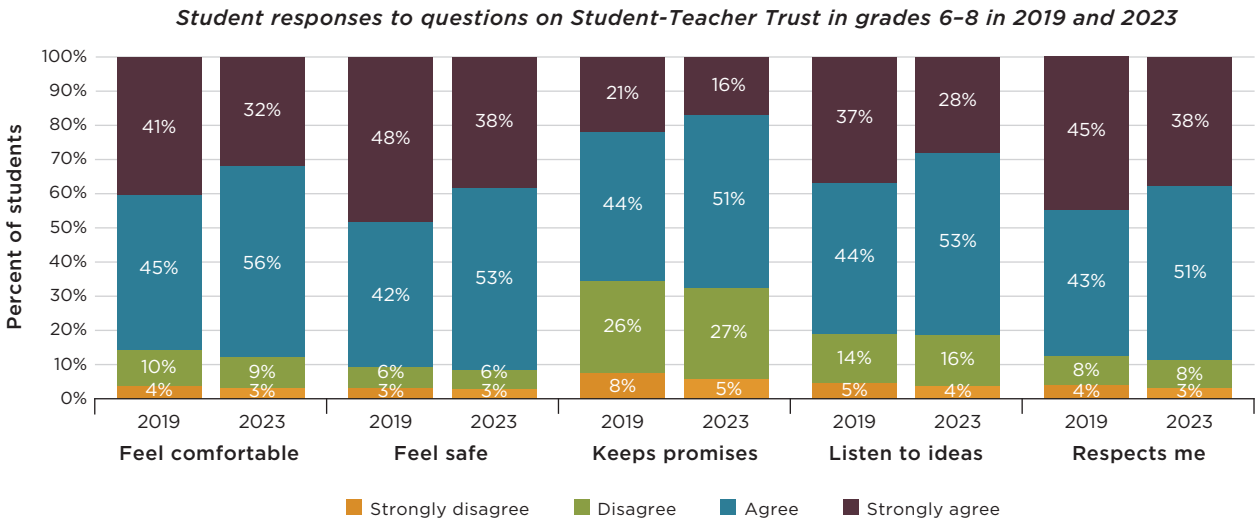


FIGURE D.2

Students were somewhat less likely to answer "strongly agree" and more likely to answer "agree" in 2023, compared to 2019 to each of the items included in the Academic Personalism measure

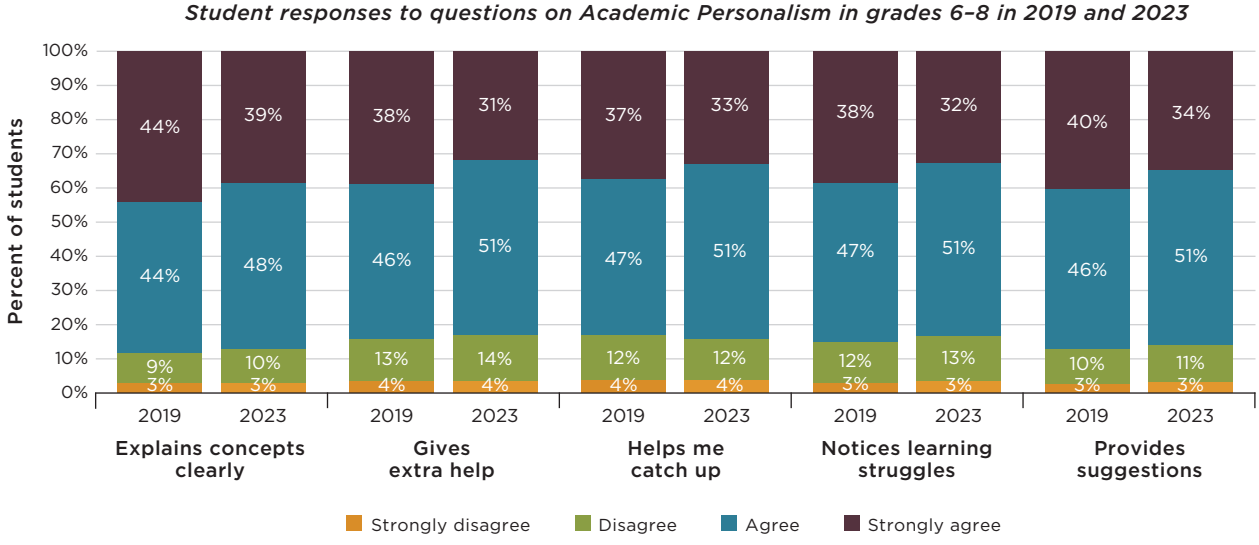


FIGURE D.3

Students were less likely to answer "strongly agree" and somewhat more likely to answer "agree and disagree" in 2023, compared to 2019 to each of the items included in the Parent Supportiveness measure

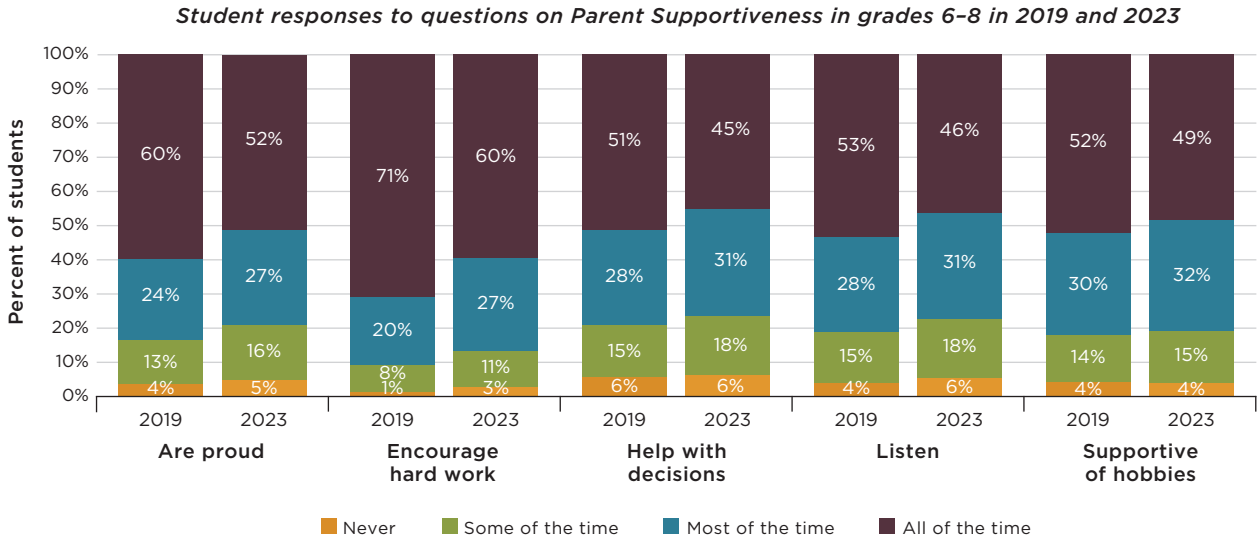
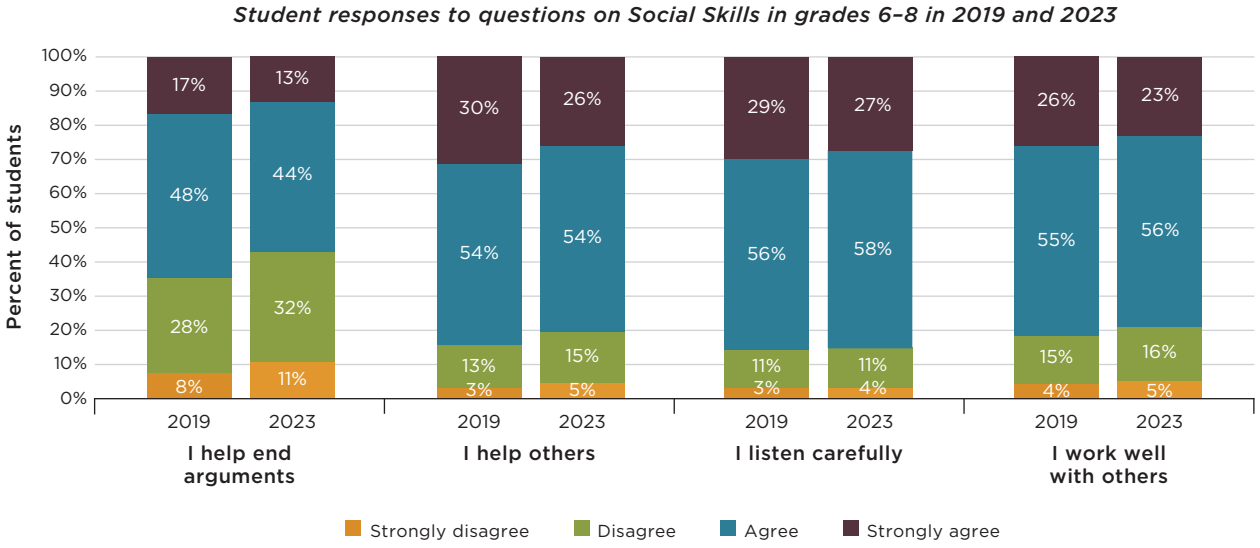


FIGURE D.4

Students were somewhat less likely to answer "strongly agree" and somewhat more likely to answer "disagree" in 2023, compared to 2019 to each of the items included in the Social Skills measure



ABOUT THE AUTHORS

JULIA A. GWYNNE is a Senior Research Scientist at the UChicago Consortium, where she has conducted a number of studies examining the skills and academic behaviors students need to be ready for high school and college. She has also conducted research looking at high school graduation rates, school closings, student mobility, charter high schools, and preschool attendance.

ELAINE M. ALLENSWORTH is the Lewis-Sebring Director of the UChicago Consortium, where she has conducted research on educational policy and practice for over 25 years. Her research examines factors influencing students' educational attainment, school leadership, and school improvement. She works with policymakers and practitioners to bridge research and practice, serving on panels, policy commissions, and working groups at the local, state and national levels.

CHRIS YOUNG is the psychometrician at the University of Chicago Consortium on School Research. His responsibilities include the development and refinement of survey questions and survey measures and providing statistical advice across projects at the Consortium. Chris' quantitative training consists of many methods, particularly Rasch models, IRT, hierarchical linear modeling, and model selection. He has worked on large scale studies of spatial and mathematical skills, experimental design optimization, and adaptive formative assessments of children's mathematical and literacy and language abilities. At the Consortium Chris conducts research on ways to increase the reliability of survey measures, assess their validity as predictors of academic performance, and how best to support school stakeholders' efforts to improve school organization.

HOLLY HART is currently Survey Director at the UChicago Consortium. In this position she oversees content development and research on the 5Essentials Survey and School Climate. Holly is a mixed-methods researcher with a background in psychology and adult development. Before joining the UChicago Consortium, Holly oversaw survey research on a variety of topics at the Survey Research Lab at UIC. In addition to survey research, as a Senior Research Associate at the UChicago Consortium, she has conducted studies focused on teachers and principals at different points of their careers. Her teacher-focused work has included studies of teacher training and coaching by the Urban Teacher Education Program and the Chicago New Teacher Center. She has also studied Chicago's REACH teacher evaluation system. Her research on principals ranges from principal preparation in Chicago and Illinois, to an Institute of Education Sciences study of the key mechanisms through which school leaders influence student achievement.

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950 E. 61st Street
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consortium.uchicago.edu

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