

Student Attendance Patterns in Philadelphia, 2017-18 to 2021-22

Many staff members in the Office of Evaluation, Research, and Accountability contributed to the information that appears in this brief. Staff in the District Performance Office helped prepare the data files used for analysis, and major writing contributions were made by Motunrayo Olaniyan, Ph.D., Ebru Erdem, Ph.D., and Joy Lesnick, Ph.D.

Why Attendance Matters

Attendance is important for positive educational outcomes. Research has found that high attendance is associated with reading at or above a student's grade level, scoring at or above grade level in math, and being prepared for college and career.¹ In contrast, high absenteeism is linked to lower academic achievement in math and reading, and higher dropout rates.²

Ways to Measure Attendance

Attendance can be measured in a variety of ways. Two typical ways of summarizing student attendance are Regular Attendance and Average Daily Attendance (ADA).

- **Regular Attendance:** the percentage of students who attended school 90% or more days.
- **Average Daily Attendance (ADA):** the total number of days attended by all students divided by the total number of instructional days for all students. This can be calculated at the school or District level, and is typically aggregated by month or school year.

Both measures of attendance can be calculated monthly and yearly. Each calculation, based on the intervals of time over which attendance is being measured, provides different information about attendance patterns over time. ADA provides information about the average percentage of students present each day, while regular attendance provides information about the percentage of students with high attendance across a school year.

¹ High attendance was found to be associated with higher academic achievement and engagement with school in the paper, *Evaluating the Relationship Between Student Attendance and Achievement in Urban Elementary and Middle Schools: An Instrumental Variables Approach*, retrieved from: <https://doi.org/10.3102/0002831209350494>. For additional information on the District's attendance policy and guidelines, visit the Office of Attendance & Truancy's website found here: <https://www.philasd.org/studentrights/programsservices/attendance-truancy/>

² For more information, see: https://nces.ed.gov/programs/raceindicators/indicator_rcc.asp

In this brief, we describe patterns of attendance based on the percentage of days attended. We start by summarizing cumulative patterns of attendance during the 2017-18 to 2021-22 school years. *Cumulative attendance* shows how much instruction students have missed each year. To examine cumulative attendance, the District groups students into *attendance bands* based on the percentage instructional days attended, including 95% or more, 90 to 95%, 85 to 90%, 80 to 85%, and fewer than 80%.³ For all cumulative metrics, absences at the start of a school year continuously affect attendance rates throughout the school year. In this brief, we also summarize *within-month attendance* patterns during the 2020-21 and 2021-22 school years to examine attendance patterns during each month of the school year.

Covid-19 and Attendance Patterns

On March 13, 2020, all SDP schools transitioned to virtual learning in response to the Covid-19 pandemic. Students received virtual instruction through the end of the 2019-20 school year and the majority of the 2020-21 school year. During the 2020-21 school year, when schools were mostly virtual, multiple methods were utilized to determine if a student was present throughout the school year. These methods, which accounted for the unique virtual learning environment, ensured accurate attendance tracking. In 2021-22, students returned to fully in-person learning.⁴ In this brief, attendance trends are included for two years prior to the transition to virtual learning to provide information about attendance patterns prior to the pandemic.⁵

³ SDP traditionally reports 95%+ cumulative attendance at the District- and school-level. For further information on the District's attendance metrics and to download District attendance data, please visit:

<https://www.philasd.org/performance/programsservices/open-data/school-performance/#attendance>

⁴ SDP announced on May 19, 2021 that students would return to in-person learning at the beginning of the 2021-22 school year. To view the announcement, see: <https://www.philasd.org/blog/2021/05/19/inpersonlearning-2/>

⁵ For more detailed information about attendance during the 2020-21 period of virtual instruction see: <https://www.philasd.org/research/wp-content/uploads/sites/90/2021/04/School-Level-Student-Attendance-Patterns-During-Digital-Learning-Brief-April-2021.pdf>

Research Questions

This brief uses attendance data across all students enrolled in District schools, including alternative programs, to identify trends in student attendance from 2017-18 to 2021-22. Specifically, the brief addresses the following questions:

1. What were the overall trends in cumulative student attendance by the percentage of school days attended (95%+, 90 to 95%, 85 to 90%, 80 to 85%, fewer than 80%) from 2017-18 to 2021-22?
2. What were trends in student attendance by grade bands from 2017-18 to 2021-22?
3. What were the within-month 90%+ attendance patterns for students during the 2020-21 and 2021-22 school years?

Inclusion and Attribution Criteria for Student-Level District Attendance

Attendance metrics are calculated at the District level and school levels. For school-level metrics, as long as a student was enrolled in the same school for at least 10 days, their attendance and absences during the time they were enrolled is attributed to that school. This means that if a student was enrolled in more than one school for at least 10 days each in a given year, their attendance and absences at each of those schools are attributed to the respective school in the school-level metrics. The 10-day enrollment rule applies to metrics from all school years included in this brief. For the cumulative metrics, students were included if they were enrolled at least 10 days throughout the school year. For the within-month metric, students were counted if they were enrolled 10 or more days within the month.

How is monthly attendance calculated for months with varying numbers of school days?

The number of school days in a month is used to calculate attendance rates for both cumulative and within-month attendance calculations. For the school years included in this analysis, the number of school days in a month ranged from 1-23, and could change each year depending on school start date, school end date, holidays and other school closures. In a month with 20 or more school days, students can miss up to two days and still attain 90%+ attendance within the month (18 days present out of 20 total days = 90% attendance). However, if there are fewer than 20 school days in a month, missing two days would result in an attendance rate below 90%. Whenever making comparisons across months or school years, the number of school days within each month that are being used to calculate the attendance rate need to be kept in mind. Below are examples of the maximum number of absences a student may accrue to have a 90%+ attendance rate for the 2021-22 school year. These tables follow the main District Academic Calendar for the 2021-22 school year. Schools that were closed on District-wide instructional days for school-specific environmental, facilities, or staffing reasons will have fewer days and, therefore, fewer maximum absences for 90%+ attendance than what is displayed here.

Table 1: Maximum absences for 90%+ cumulative attendance in 2021-22

Month	Cumulative Days at End of Month	Cumulative Maximum Absences
Aug & Sep	20	2.0
Oct	40	4.0
Nov	58	5.5
Dec	75	7.5
Jan	94	9.0
Feb	112	11.0
Mar	135	13.5
Apr	151	15.0
May	170	17.0
Jun	180	18.0

Table 2: Maximum absences for 90%+ within-month attendance in 2021-22

Month	Days in Month	Maximum Absences per Month
Aug & Sep	20	2.0
Oct	20	2.0
Nov	18	1.5
Dec	17	1.5
Jan	19	1.5
Feb	18	1.5
Mar	23	2.0
Apr	16	1.5
May	19	1.5
Jun	10	1.0

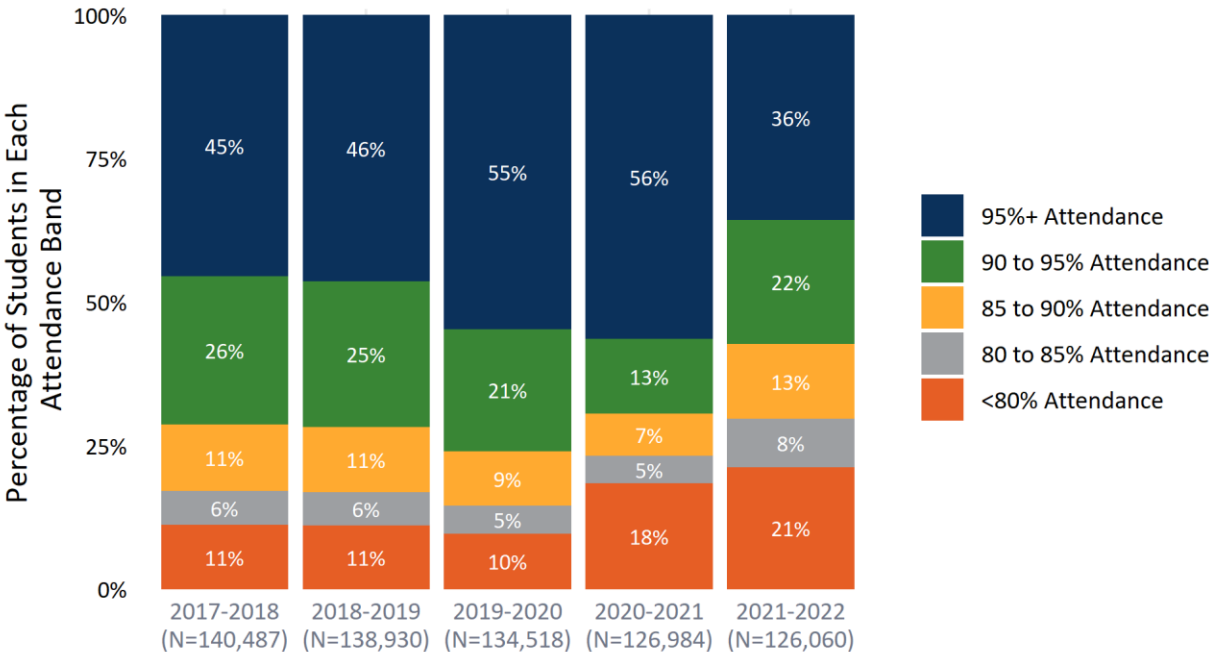
Key Findings

District-Level Cumulative Attendance at the End of the School Year

The percentage of District students attending 90% or more instructional days increased from 2017-18 to 2019-20, whereas 90%+ attendance rates dropped by 18% from 2019-20 to 2021-22.

To investigate the first research question about overall attendance trends in cumulative attendance for the 2017-18 to 2021-22 school years, we analyzed the percentage of students in each attendance band (Figure 1). From 2017-18 to 2020-21, District students who attended 95% or more instructional days increased from 46% to 56%. In the 2021-22 school year, the percentage of students in the highest attendance band declined by 20%. In the lowest attendance band (less than 80% attendance), there was an 11% increase from 2019-20 to 2021-22.

Figure 1: Percentage of students in each attendance band at end of year: 2017-18 to 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved March 15, 2023

Note: Percentages may not add up to 100% due to rounding. The total number of students included in each school year (N) represents the number of students who were enrolled in the District for at least 10 days that year, not the total number of students enrolled at a given point in time. All school years displayed in this figure end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.

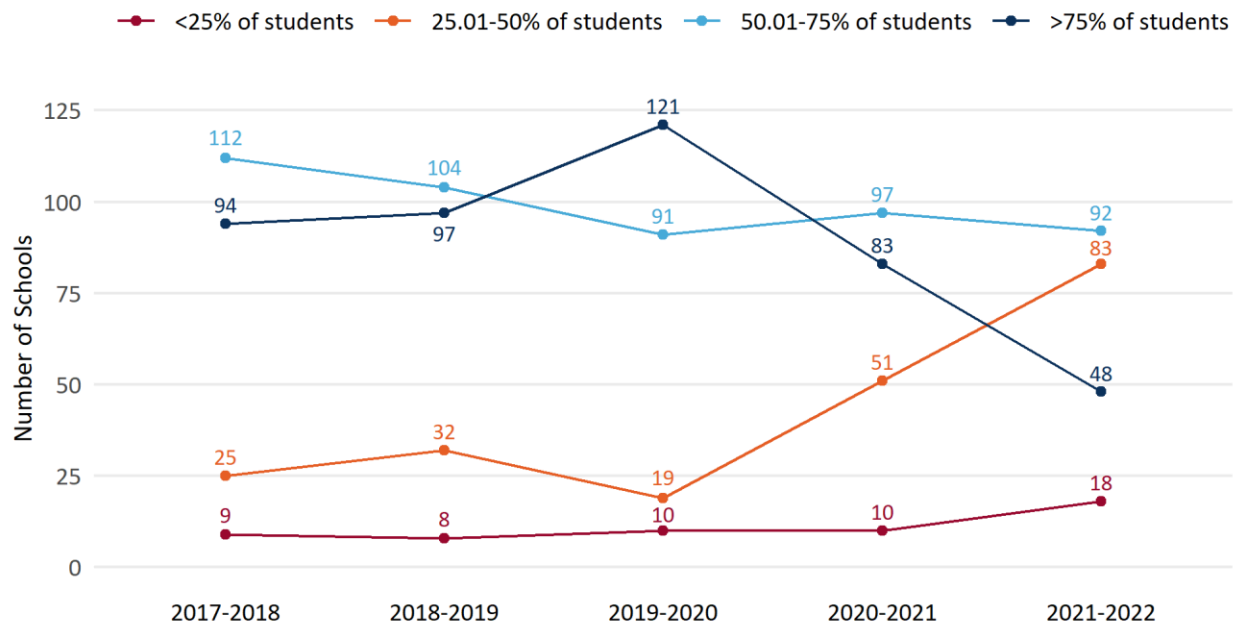
School-Level Cumulative Attendance at the End of the School Year

Between 2017-18 to 2021-22, the 2019-20 school year had the largest number of schools with high student attendance.

In addition to examining District-level attendance patterns, we identified school-level trends in student attendance over time. To see how school-level attendance changed from 2017-18 to 2021-22, we grouped schools based on the percentage of students who attended 90% or more school days. Schools that had more than 75% of students attending 90% or more days were considered to have high student attendance.

In 2019-20, prior to the start of the pandemic, half of all District schools (n = 121) had over 75% of students attending 90% or more instructional days (Figure 2). In comparison, 83 schools (34%) in 2020-21 and 48 schools (20%) in 2021-22 had 75% or more students regularly attending school.

Figure 2: Number of schools by the percentage of students who had regular attendance: 2017-18 to 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved April 28, 2023

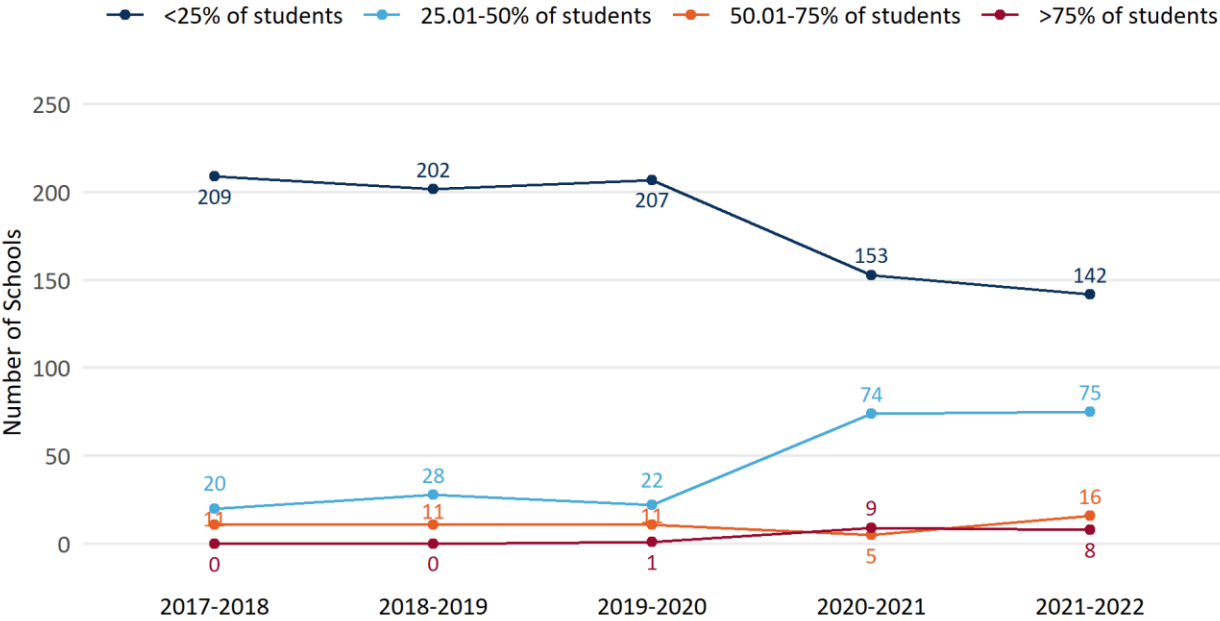
How to read this figure: This figure displays the total number of [District and Alternative schools](#) in operation during each school year and the percentage of students who attended 90% or more school days. In the 2017-18 school year, 9 schools had less than a quarter of students attending school 90% or more days, while 94 schools had over three-quarters of students attending regularly.

Note: Students who were enrolled at least 10 days each year were included in the 90%+ cumulative attendance metric. All school years displayed in this figure end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.

During the 2021-22 school year, there were more schools in which over half of students were in the lowest attendance band (<80% attendance) compared to previous years.

As an additional measure, we grouped schools based on the percentage of students who attended 80% or fewer school days. Schools were considered to have the most challenges with attendance if over 75% of students attended fewer than 80% of days. We found that more schools faced challenges to student attendance in the two school years after the onset of the Covid-19 pandemic than had previously. In 2019-20 there were 12 total schools with over 50% of students attending fewer than 80% of days, which increased to 14 schools in 2020-21 and 24 schools in 2021-22 (Figure 3).

Figure 3: Number of schools by the percentage of students who attended fewer than 80% of school days: 2017-18 to 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved April 28, 2023

How to read this figure: This figure displays the total number of [District and Alternative schools](#) in operation during each school year and the percentage of students who had low attendance. For example, in the 2021-22 school year, 142 schools had less than a quarter of students with low attendance (defined as missing more than 80% of days), while 8 schools had more than three-quarters of students with low attendance.

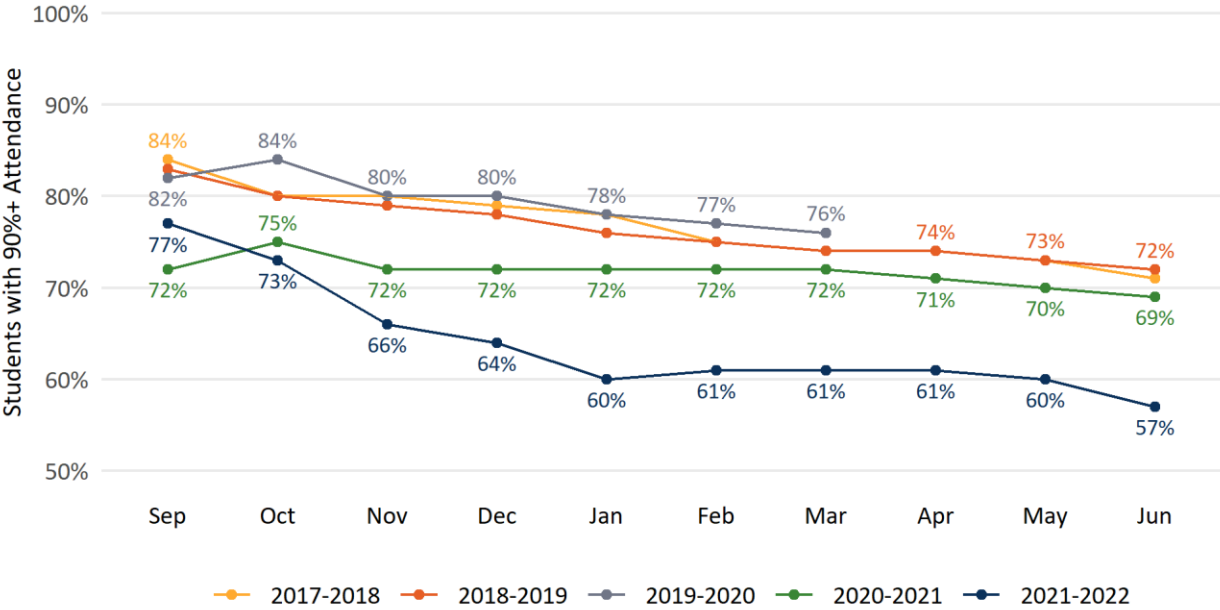
Note: Students who were enrolled at least 10 days each year were included in the >80% cumulative attendance metric. All school years displayed in this figure end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.

District-Level Cumulative Attendance Throughout the School Year

Prior to the Covid-19 pandemic (2017-18, 2018-19, and 2019-20 school years), a higher percentage of students had 90% or greater cumulative attendance from the beginning to the end of the school year compared to 2020-21 and 2021-22. The 2021-22 year had the largest change throughout the year, where there was a 20-percentage point decrease in cumulative attendance from September to June.

We examined 90%+ cumulative attendance from 2017-18 through 2021-22 to better understand attendance patterns throughout the school year. In general, cumulative attendance declined from September to the end of each school year (Figure 4). However, the largest decrease occurred in 2021-22, in which 90%+ attendance declined by 20 percentage points from 77% in September to 57% in June. Notably, the largest decline in 2021-22 happened in the first three months, with rates dropping to 66% in October before remaining relatively steady with smaller declines in subsequent months. In contrast, cumulative rates for the 2020-21 school year (when students were in virtual/hybrid learning) showed little change, with rates fluctuating slightly from 72% in September to 69% in June.

Figure 4: Students’ 90%+ cumulative attendance: 2017-18 to 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved March 15, 2023
Note: Percentages are rounded. The y-axis begins at 50% rather than 0% to improve the visualization of the data. All school years displayed in this figure end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning. In 2019-20 and 2020-21, enrollment increased from September to October, resulting in a higher percentage of students attending 90% or more school in October.

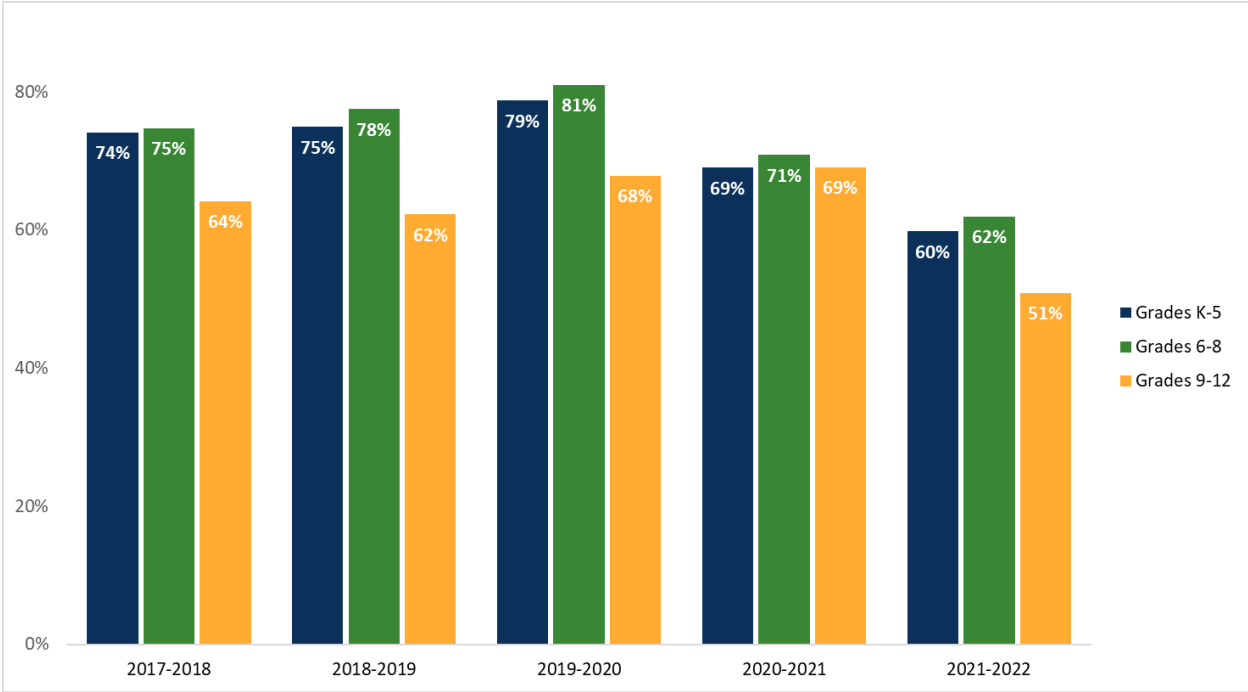
Cumulative Attendance Patterns by Grade Band

On average, students in grades 9-12 had the lowest rates of 90% or higher attendance from 2017-18 to 2021-22 compared to grades K-5 and 6-8.

We analyzed grade-level trends in cumulative attendance to address the second research question. Throughout the 5-year period covered in this report (2017-19 to 2021-22), grades 9-12 had the lowest percentages of students attending 90% or more instructional days compared to the other grade bands (Figure 5). However, in 2020-21, both grades 9-12 and K-5 had the same rate of students attending 90% or more school days, at 69%.

The trend of 90%+ cumulative attendance rates in grades K-5 and 6-12 followed a similar pattern to the overall District rates from year-to-year. Specifically, both groups had small increases in 90%+ student attendance from 2017-18 to 2019-20, followed by a gradual decline from 2020-21 to 2021-22. Among grades 9-12, the pattern of attendance varied over the years, with a 2 percentage point decline from 2017-18 to 2018-19, a subsequent 7 percentage point increase over the next two years, and then an 18-percentage point decrease from 69% to 51% in 2021-22.

Figure 5: Students’ 90%+ cumulative attendance by grade band at end of year: 2017-18 to 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved March 17, 2023

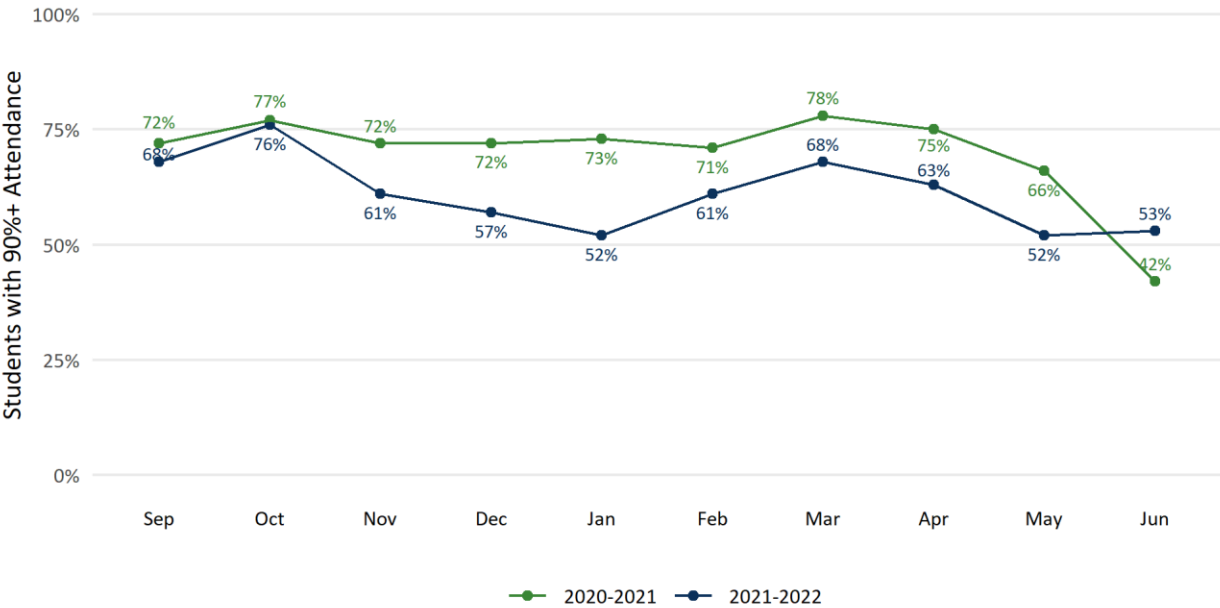
Note: Percentages are rounded. All school years displayed in this figure end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.

Within-Month Attendance Patterns During the 2020-21 and 2021-22 School Years

There are more variations in month-to-month attendance patterns than September-June cumulative attendance patterns.

During the 2020-21 and 2021-22 school years, there were fluctuations from month-to-month for 90% attendance within each school year (Figure 6). From September to October, the percentages of students attending 90% or more instructional days was nearly the same in 2020-21 and 2021-22. When looking at November, however, the 90% within-month attendance was 72% in 2020-21, compared to 61% the following year. Moreover, while attendance remained stable from November to January of 2020-21, attendance declined throughout these months in the following year. By June, there was a notable change to the pattern, in that just 42% of students had 90%+ attendance in 2020-21 compared to 53% in the following year.

Figure 6: Students’ 90%+ within-month attendance: 2020-21 and 2021-22



Source: QlikBAM Climate Matters dashboard, retrieved March 17, 2023
Note: Percentages are rounded. When comparing months between the two school years, note that only April and June differ in their maximum number of absences. In 2020-21, April had 20 days (2 maximum absences) and June had 9 days (0.5 maximum absences), whereas in 2021-22, April had 16 days (1.5 maximum absences) and June had 10 days (1 maximum absence). The 2020-21 school year consisted of mostly virtual and hybrid instruction.

Conclusions

Attendance plays a critical role in student success, as high attendance is linked to higher academic achievement and better preparation for college and career. This brief examined attendance patterns in Philadelphia from 2017-18 to 2021-22 using the cumulative and within-month percentage of school days attended. The results showed that the percentage of students attending 90% or more days through the end of the school year increased slightly from 2017-18 to 2019-20 and declined from 2020-21 to 2021-22. In the lowest attendance band (students attending fewer than 80% of school days), cumulative attendance remained relatively consistent at 10-11% for the first three years, then increased to 21% by the 2021-22 school year. Additionally, the study found that attendance patterns varied by grade band, with students in grades K-5 and 6-8 having higher attendance rates than students in grades 9-12.

Lastly, the study examined within-month attendance patterns to examine overall changes in attendance from month-to-month within the 2020-21 and 2021-22 school years. The within-month attendance metric showed fluctuations during both school years. Notably, September to May had similar 90%+ attendance patterns in both years, but 2021-22 had higher rates in June.

Appendix A

Table A-1: Number of schools by the percentage of students who had regular attendance: 2017-18 to 2021-22

	2017-18	2018-19	2019-20	2020-21	2021-22
Total Number of Schools	240	241	241	241	241
Number of schools with <25% of students attending 90% of days	9	8	10	10	18
Number of schools with 25.01-50% of students attending 90% of days	25	32	19	51	83
Number of schools with 50.01-75% of students attending 90% of days	112	104	91	97	92
Number of schools with >75% of students attending 90% of days	2	97	121	83	48

Source: QlikBAM Climate Matters dashboard, retrieved April 28, 2023

How to read this table: This table displays the total number of [District and Alternative schools](#) in operation during each school year and the percentage of students who attended 90% or more school days. In the 2017-18 school year, 9 schools had less than a quarter of students attending school 90% or more days, while 94 schools had over three-quarters of students attending regularly.

Note: Students who were enrolled at least 10 days each year were included in the 90%+ cumulative attendance metric. All school years displayed in this table end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.

Table A-2: Number of schools by the percentage of students who attended fewer than 80% of school days: 2017-18 to 2021-22

	2017-18	2018-19	2019-20	2020-21	2021-22
Total Number of Schools	240	241	241	241	241
Number of schools with <25% of students attending fewer than 80% of days	209	202	207	153	142
Number of schools with 25.01-50% of students fewer than 80% of days	20	28	22	74	75
Number of schools with 50.01-75% of students fewer than 80% of days	11	11	11	5	16
Number of schools with >75% of students attending fewer than 80% of days	0	0	1	9	8

Source: QlikBAM Climate Matters dashboard, retrieved April 28, 2023

How to read this table: This table displays the total number of [District and Alternative schools](#) in operation during each school year and the percentage of students who had low attendance. For example, in the 2021-22 school year, 142 schools had less than a quarter of students with low attendance (defined as missing more than 80% of days), while 8 schools had more than three-quarters of students with low attendance.

Note: Students who were enrolled at least 10 days each year were included in the >80% cumulative attendance metric. All school years displayed in this table end in June except 2019-20, which ends in March, the last month during the 2019-20 school year that students attended school in person before they transitioned to digital learning.