



School Impacts on Absenteeism in the High School Grades following the COVID-19 Pandemic: Identifying School Factors and Strategies for Improvement

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**School Impacts on Absenteeism in the High School Grades following the COVID-19
Pandemic: Identifying School Factors and Strategies for Improvement**

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Abstract

Chronic absenteeism has increased sharply in U.S. high schools following the COVID-19 pandemic, with Chicago Public Schools (CPS) mirroring national trends. Although student attendance has long been recognized as a critical factor in academic success, persistently high chronic absenteeism rates among high school students necessitate a closer examination of which school-based strategies have been effective in re-engaging with students and improving attendance in the post-pandemic context. This study employs a sequential mixed-methods design, integrating attendance value-added modeling with qualitative interviews to identify and describe practices used in four CPS high schools that have higher-than-expected attendance rates. Key strategies across the schools include frequent and timely family outreach, close monitoring of attendance data, academic recovery opportunities paired with clearer expectations for student effort, and intentional efforts to elevate student voice and cultivate safe, supportive school climates. Quantitative analyses across CPS high schools show that creating supportive school environments and contacting families quickly after student absences are all positively associated with school attendance value-added. The study contributes evidence on school-level practices associated with improved attendance outcomes.

Keywords: attendance, chronic absenteeism, value-added model, school practices, mixed methods, school impact

School Impacts on Absenteeism in the High School Grades following the COVID-19**Pandemic: Identifying School Factors and Strategies for Improvement**

In the years following the pandemic, increasing rates of chronic absenteeism emerged as a major issue for high schools, districts, and policymakers nationwide (Barshay, 2025). In Chicago Public Schools (CPS), where this study is based, chronic absenteeism rates among high school students jumped from 32% in 2017 to approximately 53% in 2024 (Allensworth et al., 2026). This trend is particularly troubling, as research shows that disengagement during adolescence can exacerbate educational and wellbeing disparities well into adulthood (Ansari et al., 2020; Balfanz & Byrnes, 2021; Rumberger & Rotermund, 2012). The importance of school attendance for student achievement and educational attainment is well documented, including research showing that absence rates among high school students are strongly related to whether students graduate on time (e.g., Allensworth & Easton, 2007; Ansari & Pianta, 2019; Gottfried, 2014; Marshall, 2024; Barragan Torres, 2025). Yet, because attendance is shaped by myriad factors inside and outside of schools, it can be difficult to know whether school practices can have large effects, and what types of practices matter most.

This study employs a sequential mixed-methods design to examine school-level practices associated with stronger-than-expected high school attendance in the post-pandemic period. We begin by estimating school attendance value-added for CPS high schools during the 2021–22 through 2023–24 school years. These estimates identify schools whose students attended at higher rates than would be expected based on student and peer demographics, baseline achievement, and other observed characteristics. Value-added (VA) modeling offers a validated approach for assessing the contributions of schools and teachers to student outcomes (grades, test

scores, socio-emotional development, and attendance) (Jackson, 2018; Jackson et al., 2020; Jackson et al., 2024; Liu, 2022).

Prior literature on attendance value-added (VA) has examined how teachers and school leaders affect student absences. Studies of teachers' effects on non-test outcomes have found that teachers influence student absences (Jackson, 2018; Liu & Loeb, 2021). Using data that linked secondary teachers to students' class-by-class attendance, Liu and Loeb (2021) showed that teachers differ meaningfully in how much they reduce unexcused absences. These differences persist over time to about the same degree as differences in teachers' impact on test scores, yet a teacher's effect on attendance is only loosely related to their effect on achievement. Teachers who were strong on attendance also did more to help students complete high school than teachers who were strong on achievement (Liu & Loeb, 2021). The approach has since been applied to school leaders. Drawing on roughly ten years of statewide Tennessee data, Bartanen (2020) estimated principals' contributions to student absences and found them to be about as large as their contributions to achievement.

Liu (2022) is, to our knowledge, the closest precedent for school-level attendance value-added. Using sixteen years of administrative data (2002-03 to 2017-18) from a large California district that recorded partial-day absences, Liu estimated high schools' contributions to attendance net of students' prior absenteeism and other observable characteristics. First, attendance value-added varies widely across schools and is highly stable over time, as test-based value-added is. Second, attendance value-added appears to capture a different dimension of school quality than test-based value-added, and it is positively correlated with students' perceptions of school safety and clear behavioral expectations. Recent work in Michigan reports similarly stable estimates and finds that schools serving more low-income students have lower

attendance rates but higher attendance value-added on average (Singer et al., 2026), which underscores the difference between the conditions schools face and the contributions they make. Because attendance value-added isolates schools' contributions from the students they serve, it gives us a fairer basis for identifying schools that are succeeding at re-engaging students, and so for learning what those schools do differently.

Therefore, we use the attendance-VA estimates to select high value-added (VA) schools for qualitative interviews with principals and school staff. The interviews provide detailed evidence on the practices, routines, and implementation conditions that staff believe contributed to student re-engagement and improved attendance. The study then links the qualitative findings back to quantitative data from all CPS high schools. Specifically, we examine whether the practices that emerged from interviews—supportive school environments, academic recovery and expectations, family outreach, and attendance data use—are associated with school attendance value-added across the district. The sequential approach, wherein qualitative insights inform quantitative analysis, yields actionable information for educators and practitioners regarding the availability, prevalence, and significance of effective practices in high-VA schools (Creswell & Plano Clark, 2018; Tashakkori & Creswell, 2007). Because the qualitative phase draws only on high-VA schools, it cannot show whether these practices are distinctive to high-VA schools or also common in schools with average or low VA, which may use many of the same strategies. The district-wide quantitative analysis therefore serves as a partial check on which practices are associated with VA, though we acknowledge this as a limitation and discuss it in the final section as well.

This study contributes to the literature in three ways. First, it applies a VA framework to estimate school contributions to attendance in the post-pandemic period, extending prior work on

school effects beyond test scores and graduation outcomes to a pressing student engagement outcome. Second, it employs a three-stage sequential mixed-methods design (quantitative-qualitative-quantitative) that uses school VA estimates to identify high-impact schools, followed by qualitative interviews to describe how these schools implement attendance-related practices, offering concrete examples of schoolwide strategies used to re-engage students. Third, it returns to quantitative analysis to examine whether the practices identified in high-VA schools are associated with attendance VA across the broader population of CPS high schools, providing evidence on the generalizability of these practices.

By integrating value-added modeling with qualitative evidence from school staff, this study helps bridge the gap between estimates of school effectiveness and the day-to-day practices that may produce stronger attendance outcomes. The findings offer actionable evidence for educators and district leaders seeking to address chronic absenteeism in high schools while recognizing that attendance is shaped by broader family, community, and structural conditions beyond the school building.

Literature Review

Chronic absenteeism is an ecological issue, influenced by a dynamic interplay of individual, family, school, and neighborhood factors (Gottfried & Gee, 2017; Lenhoff et al., 2022; Lenhoff & Singer, 2025) such as students and families not having access to basic resources (Taylor-Williams, 2022), increased out-of-school responsibilities (Gee et al., 2025; Kearney et al., 2023; Stickley, 2025), and lower perception around the value of attendance (Rapaport et al., 2025). Within this ecological context, schools can be an important lever of intervention. Although individual, family, and neighborhood conditions shape attendance, they are often difficult for educators to change directly and simultaneously, whereas there are a range of school

practices that have been shown to influence student attendance (Balfanz & Byrnes, 2013; Gottfried et al., 2026; Hart et al., 2020; Singer et al., 2026). Rather than treating school-level practices as independent influences on attendance, using the ecological model, we conceptualize them as interdependent components of the broader school environment. School-level practices may also act as a buffering condition (having positive supportive environment, parent-school community building) to improve attendance, and potentially offsetting some of the stressors faced outside of the school (Gottfried & Gee, 2017; Van Eck et al., 2017).

Consistent with this view, this manuscript focuses on broader school-level practices as key levers for improving attendance, while acknowledging that their effects may vary across students and neighborhoods. However, we build on the ecological model by attending to the implementation of school-level practices. The ecological model emphasizes that development is also shaped by proximal processes such as sustained interactions between students and their environments (Lenhoff et al., 2022). Whether a practice reduces absenteeism likely depends not only on its presence but also on how it is enacted, including staff capacity, the use of data and resources, and the consistency of implementation.

Schools can draw on a range of universal, Tier 1 strategies to improve attendance. Tiered models of attendance support, adapted from response-to-intervention frameworks, promote regular attendance for all students at Tier 1, with targeted and intensive supports layered on for students with greater needs (Kearney & Graczyk, 2014). Examples include orientation and transition activities, early communication of attendance policies to parents, and training staff to recognize early warning signs (Kearney & Graczyk, 2014). The strongest experimental evidence concerns family communication. In a randomized trial with parents of 28,080 high-risk students in Philadelphia, personalized mailings that corrected parents' misbeliefs about their children's

accumulated absences reduced chronic absenteeism by about 10 percent (Rogers & Feller, 2018). In another randomized trial with middle and high school students, pre-announced attendance awards had no average effect, but surprise awards reduced subsequent attendance (Robinson et al., 2019). Efforts to reduce barriers such as hunger have shown limited attendance benefits. In New York City, serving breakfast in the classroom produced large increases in meal participation but no evidence of gains in academic performance, and there were few added benefits for attendance beyond those already provided by free breakfast (Corcoran et al., 2016).

As such, the universe of Tier 1 practices being implemented across schools is too extensive to describe in detail, including efforts to improve curriculum, instruction, relationships, mentoring, family connections and messaging, use of data, and access to resources such as transportation and health care. In this review, we describe existing literature on those school-level factors and practices that emerged as central themes from the interviews we conducted in our high-attendance-value-added (VA) schools, and for which we have access to quantitative data to test generalizability. Strategies that did not emerge as central in our interviews, such as transportation and health supports, are noted briefly above but not reviewed in depth.

Building Strong Relationships and Supportive Environments within the School

One critical domain of school climate studied here, and identified in other studies, is building supportive environments within the school building. Students who feel supported and valued by adults or other peers in the school help foster deeper relationships and improve engagement (Gottfried et al., 2026). In contrast, perceptions of feeling unsafe or bullying have been directly linked with disengagement, absenteeism, and lower academic achievement (Milam et al., 2010; Steinberg et al., 2011). A notable example of relationship-building interventions is

the NYC Success Mentor Corps, which mobilized additional personnel (either through partnership with non-profit organizations or school personnel) for direct outreach to chronically absent students and their families (Balfanz & Byrnes, 2013). Between 2013-14 and 2015-16, high school students who had a Success Mentor were 52 percent more likely to remain in school the following year compared to similar students without Success Mentors.

Another body of research around supportive environments focuses on building agency in youth development, where students exert influence and demonstrate confidence in their school setting, fostering greater belonging within the school community (Mitra, 2004). Prior studies consistently show that centering student voice and creating safe, supportive spaces positively influence student wellbeing, re-engagement, attendance, and long-term academic outcomes (DePaoli et al., 2018; Porter et al., 2023; Porter et al., 2025).

Maintaining Academic Expectations and Rigor

Prior research has established student learning to be directly linked to higher academic expectations, when paired with appropriate support (Mitchell et al., 2015). Studies also underscore the importance of relevant, challenging, ambitious instruction in motivating students to attend, particularly in high school, where academic relevance is a frequent concern (Crumpton & Gregory, 2011; Hart et al., 2020). Evidence from Illinois also links rigor to attendance: in a study of 53 schools in one large district, schools whose scores improved more on a multidimensional measure of rigor, covering classroom conditions for learning, standards-aligned student work, student teamwork, in-lesson checks of learning, and data use to track progress, had higher average weekly attendance (Basileo et al., 2024). High-performing schools

often integrate supportive instructional practices and provide opportunities for students to feel successful and connected, thereby reducing absenteeism (Lenhoff & Pogodzinski, 2018).

Family Engagement and Frequent Outreach

Family engagement emerges as a consistently effective strategy in the literature for improving student attendance. Direct outreach, including home visits, personalized communication, and parent notifications, helps address logistical and motivational barriers to attendance (Mayer et al., 2019; Rogers & Feller, 2018; Sanders et al., 2019). Collaboration with families strengthens the home-school partnership, making student attendance a shared priority. Studies show parent outreach interventions are associated with increased student presence and responsiveness to attendance concerns, especially when schools proactively address barriers and build relationships with caregivers (Rapaport et al., 2025; Singer et al., 2026). Active communication and relationship-building with families remain some of the most researched and evidence-based approaches for reducing chronic absenteeism (Akkus & Çinkir, 2022; Kearney, 2016; Rogers & Feller, 2018). Post-pandemic studies further highlight the effectiveness of parent outreach using nudges, phone calls, emails, and frequent home visits, which are now routinely recommended by advocacy organizations and districts (Bergman & Chan, 2021; Gottfried et al., 2026; Singer et al., 2026; Soule & Curtis, 2021).

Furthermore, schools that had stronger teacher-parent relationships prior to the pandemic showed smaller increases in absences afterwards (Bergman & Riddick, 2026). Interviews with families and staff from schools identified as strong in family engagement revealed that communication was highly individualized, with teachers conducting one-on-one outreach focused on academic performance and building deeper connections with families. These schools

also prioritized meaningful support for English Learners and immigrant families, emphasizing personalized relationships rather than transactional ones (Bergman & Riddick, 2026).

Data Use and Monitoring Approaches

Studies have also found the use of real-time data to be central to effective attendance interventions. Schools leveraging attendance and behavioral data for decision-making and targeted responses achieve higher rates of engagement (Atwell et al., 2023; Balfanz & Byrnes, 2013). Data-driven practices allow schools to identify trends, personalize interventions, and communicate effectively with students and families. In the post-pandemic context, strategies such as real-time attendance monitoring, integrating multiple data sources, and building student-success systems have proven effective in addressing chronic absenteeism (Atwell et al., 2023; Balfanz, 2024). High-value-added schools also routinely engage in frequent data review, monitoring, and attendance planning meetings to support attendance improvements (Singer et al., 2026).

Research Questions

A persistent gap in the literature is around examining the causal relationship between student attendance and school-level practices. Whereas previous studies often relied on instrumental variables such as distance to school, illness, and weather to study the impact of missing school days on student outcomes (Aucejo & Romano, 2016; Gottfried, 2014), fewer have directly examined school-level practices and policies implemented within schools, especially schools that have a causal impact on attendance. Prior research demonstrates that school attendance is influenced by school-level factors, but there is limited evidence utilizing rigorous methods such as a value-added framework that provides a direct link between the causal

estimates of school impact on attendance and its connection to school practices. Moreover, much of the literature points to the importance of school policies and practices, but there is less attention to the details of implementation in these schools. In this study we build on the existing body of research by identifying those factors that consistently emerged as important in interviews of staff in schools that have high value-added on attendance, providing cases of what these look like in practice across the case study schools, and show the relationships of these factors with attendance value-added estimates across all high schools in the district. We pose the following research questions:

RQ1. What types of school-level practices and strategies are evident in high schools with high attendance value-added estimates in the post-pandemic years, and how do school staff describe their implementations in these schools?

RQ2. To what extent are practices and strategies identified through staff interviews associated with school attendance value-added across CPS high schools?

Data and Methods

This study employs a sequential mixed-methods design to identify student attendance improvement strategies across CPS high schools. First, we estimate each school's impact on student attendance during three post-pandemic years using the value-added methodology that accounts for differences stemming from a range of observable factors such as student demographics, prior attendance history, socioeconomic status, school size, and neighborhood context and isolates the school contribution. By adjusting for these factors, we identify schools whose attendance outcomes significantly exceed expectations. These high-VA schools are then selected for qualitative follow-up, during which we conduct in-depth interviews with school staff to uncover the specific practices, strategies, and implementation conditions that contribute to

their success. Systematic thematic analysis of these interviews reveals common patterns and promising interventions across schools. To assess the broader relevance of these practices, we then test whether the presence of school-level practices predicts higher VA scores across all CPS high schools. By integrating robust value-added modeling with rich qualitative insights, our study not only isolates the true contribution of schools to attendance outcomes but also provides clear, generalizable evidence on what works to promote student attendance.

Quantitative Data Sources and Methods

We draw on two primary data sources: de-identified CPS administrative records, and student and teacher survey data. The quantitative analyses focus on the three post-pandemic school years from 2021–22 through 2023–24.

Student administrative records

Student-level administrative data include race/ethnicity, gender, age, free or reduced-price lunch eligibility, special education status, English learner status, attendance, suspensions, course grades, standardized test scores and information on the census block groups where students live. These data are used to construct both outcome measures and baseline controls for the VA models.

Baseline measures are taken from eighth grade, when students were typically enrolled in a different school to best capture school effects. The administrative data extend to years before 2021–22 in order to observe pre-entry characteristics for students included in the post-pandemic analytic sample. For example, a ninth-grade student observed in 2021–22 would have eighth-grade baseline data from 2020–21, while an eleventh-grade student observed in 2021–22 would have eighth-grade baseline data from 2018–19.

Student achievement data come from state standardized assessments in math and English language arts. Beginning in 2018–19, Illinois administered the Illinois Assessment of Readiness (IAR) to students in grades 3–8. Prior to the IAR, students took the Partnership for Assessment of Readiness for College and Careers (PARCC), which also assessed math and English language arts achievement. Both assessments are designed to be on the same scale. These test score data are used to construct baseline academic achievement measures for the VA models.

Student and teacher survey data

We use data from the CPS 5Essentials Survey, which is administered annually to teachers and students from grades 4 to 12 and ask questions on school quality and organizational conditions. The teacher survey includes information on instructional conditions, collaboration, leadership, family engagement, and school practices. Notably, it does not include responses from administrative staff members. This is a limitation when analyzing practices that our interviews revealed, which were most frequently done by school leaders or office personnel.

For this study, we use 5Essentials data from 2021–22 through 2023–24, corresponding to the post-pandemic period covered by the VA analyses. Survey response rates during this period were approximately 75 percent for students and 71 percent for teachers. The 5Essentials framework summarizes school organizational conditions across five domains: Supportive Environment, Ambitious Instruction, Involved Families, Effective Leaders, and Collaborative Teachers. There is considerable evidence of the validity of the student survey measures and 5Essentials domains in Chicago; they have been shown to be highly predictive of student outcomes and school improvement (e.g., Hart et al., 2020), and similar measures were found to be predictive of student outcomes in the national Measures of Effectiveness study (Kane et al.,

2013). Table A2 in the Appendix provides the measures and definitions for the three 5Essentials domains used in the analyses.

In addition to the 5Essentials domains, we use some newly-created attendance-related survey questions included in the 2024–25 teacher survey. These items capture school practices related to family outreach, use of attendance data, among others. Because these survey items were collected after the 2021–22 to 2023–24 period used to estimate school VA, we interpret analyses using these measures as descriptive evidence of whether current attendance-related practices are associated with prior school attendance VA estimates. Table A1 in the Appendix provides the full wording of the attendance-related teacher survey questions and response options.

Measures

Attendance rate. The primary outcome used to estimate school VA is student attendance rate. Attendance rate is defined as the number of days a student attended school divided by the total number of days the student was enrolled. This measure captures the share of enrolled school days attended during a given school year.

5Essentials domains. In this study, we focus on three domains from the CPS 5Essentials Survey most closely aligned with the school practices identified in the qualitative interviews: Supportive Environment, Ambitious Instruction, and Involved Families.

Supportive Environment captures the extent to which schools are safe and orderly, teachers hold high expectations for students, and students experience support from teachers and peers. *Ambitious Instruction* captures the extent to which classroom instruction is academically demanding and engages students in applying knowledge. *Involved Families* captures the extent

to which school staff build strong relationships with families and communities to support student learning.

Family outreach and attendance data use survey measures. We construct two sets of attendance-related measures. The first set captures how quickly teachers report contacting families after a student is absent. Teachers were asked: “For how long does a student have to be absent before you contact their parents/guardians?” From this item, we construct one measure indicating the percentage of teachers in a school who report contacting families after one or two days of absence. We also construct a second measure indicating the percentage of teachers who report waiting one month or never contacting families.

The second set of measures captures teachers’ reported use of attendance data. Teachers were asked how often teachers in their school use different kinds of student attendance data, with response options ranging from “Daily,” “Weekly,” to “Never.” We focus on two types of attendance data: data on individual students who are chronically absent and school-wide attendance data over time. For each item, we construct a school-level measure equal to the percentage of teachers who report using that type of data at least monthly. These measures capture the extent to which teachers report regular use of individual student attendance data and school-wide attendance data.

School Value-Added Model

We employ a value-added (VA) framework to estimate schools’ contributions to student attendance in the post-pandemic period (2021-22 to 2023-24). The analysis proceeds in two stages. First, we estimate school-level VA to attendance for high schools (grades 9-11). Second, we examine how these VA estimates vary with the quantitative measures of school factors and practices identified from the qualitative analyses. The VA estimates adjust for a very large array

of student, cohort, and school factors, including students' baseline attendance and achievement in eighth grade, and the baseline attendance and achievement of their peers.

Estimating school value-added on attendance. We estimate school VA following the approach developed by Chetty et al. (2014), adapted to the context of student attendance.

Conceptually, the method consists of three steps: (1) constructing attendance residuals that net out observable student and peer characteristics; (2) estimating the autocovariance structure of these residuals across cohorts over time; and (3) using this structure to generate leave-year-out predictions of school VA for each school-year.

Let a_{it} denote the attendance rate of student i , who is in school $s = s(i, t)$ and grade $g = g(i, t)$, in year t . We model attendance as:

$$a_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 \bar{X}_{sgt} + \Gamma_g + \tau_t + v_{it}, \quad \text{Eq 1}$$

where

$$v_{it} = \mu_{st} + \theta_{sgt} + \varepsilon_{it}$$

Here, X_{it} is a vector of student-level characteristics, $\bar{X}_{sgt}$ is a vector of peer characteristics measured at the school-grade-year level, Γ_g and τ_t are grade and year fixed effects, respectively, and v_{it} includes unobservable characteristics. The composite error term v_{it} is composed of the parameter of interest, μ_{st} , which captures school s 's VA to attendance in year t , the term θ_{sgt} which captures transitory school-grade shocks, and the idiosyncratic error term ε_{it} .

Construction of attendance residuals. We first construct attendance residuals by regressing observed attendance a_{it} on student-level controls X_{it} , peer controls $\bar{X}_{sgt}$, and grade

and year fixed effects. While Chetty et al. (2014) define peers based on classrooms, we define peers based on students' school-grade-year cohort.¹

Our baseline student-level control vector X_{it} closely follows prior VA models. We control for baseline attendance, defined as grade 8 attendance for high school students, so that baseline attendance is measured prior to entry into the observed school. Baseline attendance is included flexibly using a cubic polynomial interacted with grade indicators.

We also control for baseline academic achievement. Because standardized tests were not consistently administered during the pandemic, baseline test scores are defined as the average of students' scores in grades 6–8. These averages reduce missingness due to pandemic-related disruptions.² Baseline test scores enter the model as a cubic polynomial interacted with grade indicators. When baseline test scores are missing, we set them to zero and include an indicator for missing baseline test scores, interacting with the baseline attendance controls.³

¹ While controlling for classroom peer composition may be important when estimating individual teacher effects, it is less straightforward when estimating school effects. Students may interact with peers beyond their assigned classrooms, particularly within the same grade. Moreover, classroom composition and student-to-teacher assignments may reflect school-level organizational decisions that contribute to student attendance. Controlling for classroom-level peers could therefore remove some of the variation attributable to school practices that our school-level VA measure is intended to capture.

² Approximately 41% of high school student-year observations are missing 8th-grade test scores. However, missingness varies substantially across cohorts because standardized tests were not administered in 2020 and were administered to only some students in 2021. As shown in Appendix Table A5, approximately 97–98% of observations from the cohort attending 10th grade in 2022 and 11th grade in 2023 are missing 8th-grade scores, given that they were in 8th grade in 2020. For the cohorts attending 9th grade in 2022, 10th grade in 2023, and 11th grade in 2024, approximately 51–52% of observations are missing 8th-grade scores because they were in 8th grade in 2021. In contrast, cohorts whose 8th-grade testing was not affected by pandemic-related disruptions have substantially lower missingness, ranging from 3% to 6%.

³ We acknowledge that missing baseline 8th-grade test scores may introduce bias to our school value-added estimates if it is associated with selection into high schools; however, we expect this concern to be mitigated by controlling for the average of available scores from grades 6–8 and the inclusion of baseline achievement. The correlation between 6th-, 7th-, and 8th-grade baseline test scores are high, ranging from 0.83 to 0.87 (see Appendix Table A6). Moreover, in a companion paper (Allensworth et al., forthcoming), we find that measures of student background and prior achievement explain relatively little additional variation in attendance beyond baseline attendance. These findings suggest that averaging available scores is a reasonable approach to preserving information on prior achievement while reducing missingness, and modest differences in the baseline achievement measure may have limited implications for predicting attendance after controlling for baseline attendance.

Additional student-level controls include race/ethnicity, gender, age, indicators for free or reduced-price lunch eligibility, special education status, English learner status, and grade repetition, baseline (grade 8) GPA, and an indicator for whether the student was suspended in the baseline grade. We also include measures of neighborhood socioeconomic context based on Census block group data.⁴ These include a standardized measure of neighborhood poverty (constructed from adult male employment rates and the share of families above the poverty line) and a standardized measure of neighborhood social status (based on adult educational attainment and the share of employed adults in managerial or professional occupations). Both measures are normalized so that zero corresponds to the mean Census block group in Chicago.

At both the school-grade-year cohort and overall school level, we include peer controls $\bar{X}_{sgt}$ consisting of: (i) cubic polynomials in means of baseline attendance and baseline test scores, each interacted with grade; (ii) means of all other student covariates; and (iii) size (number of students). Lastly, we include grade and year fixed effects.

After constructing student-level residualized attendance outcomes, we compute mean attendance residuals at the school-grade-year level and collapse them to the school-year level using precision weights. We then estimate the autocovariance of school-year residuals over time and use it to construct leave-year-out predictions of school attendance VA, so each school-year estimate is based on other years' outcomes rather than the same-year students being evaluated.

Qualitative Data Sources and Methods

School Selection for Qualitative Interviews: Linking Quantitative to Qualitative Analysis

⁴ For student-level controls with missing values, we impute zero for indicator variables and the sample mean for continuous variables. We also include a separate missingness indicator for each control when estimating school VA.

To integrate the quantitative VA analysis with the qualitative component of the study, we use school-level attendance VA estimates to guide the selection of schools for in-depth interviews by identifying high schools with stronger-than-expected attendance outcomes. We define high-VA schools as those in the top 20 percent (top quintile). We use school attendance VA from the last available school year 2023-24 for school selection.

Because the city of Chicago is highly segregated by race and income, we stratify schools by geographic region to ensure representation across distinct social contexts. Schools are grouped into three broad regions—Downtown-North Side, West Side, and South Side—based on their neighborhood location. All sampling procedures are conducted separately by region. We exclude selective-enrollment schools (which admit students through a competitive, merit-based application process rather than by neighborhood residence) from the sampling frame because they serve systematically different student populations.

To balance external validity with comparability, we adopt a hybrid sampling strategy. Within each region, we randomly select a larger pool of high-VA schools (up to 10 schools) from each of the three regions. The research team then reached out to each of the high-VA schools to invite them to participate in the school staff interviews. Out of the larger pool, four schools agreed to participate: three were located on the south side of Chicago, and one was on the north side of the region. The final sample includes nine one-on-one semi-structured interviews with principals and school staff from the four high schools. Participant details are provided in the descriptive statistics section.

Qualitative Methods

Data analysis followed a systematic, iterative approach grounded in directed content analysis (Hsieh & Shannon, 2005), complemented by inductive coding techniques to capture

emergent themes. The analytic process was designed to identify school-level policies and practices related to student attendance across high schools with stronger-than-expected attendance. The analysis proceeded through multiple iterative stages consistent with established qualitative analytic approaches (e.g., Auerbach & Silverstein, 2003; Deterding & Waters, 2021; Miles et al., 2014). First, interview data were indexed into broad topical categories aligned with the interview protocol (e.g., school policies, student factors, & family engagement). Next, researchers identified focal topics for deeper analysis and extracted relevant data segments.

A directed content analysis approach guided initial coding, with a priori codes derived from existing literature and prior collaboration with CPS stakeholders. These included domains such as:

- Student factors (e.g., physical and mental health, family circumstances)
- School factors (e.g., school climate, access to programs and extracurricular activities)
- Community factors (e.g., family engagement, community partnerships)
- Interventions and policies (e.g., attendance monitoring systems, grading policies, district-provided resources and professional development)

These codes were iteratively refined, expanded, or redefined through inductive open coding as new patterns emerged in the data. Structural and descriptive coding methods (Saldaña, 2021) were used to organize data according to research questions and analytic categories.

Coded excerpts and post-interview memos were synthesized into analytic memos that articulated preliminary themes and patterns. These memos were developed iteratively and refined through team-based discussions. Themes were then expressed as concise analytic generalizations and supported by representative data excerpts. Triangulation across data sources, including interview transcripts and post-interview reflection memos—supported deeper interpretation and

enhanced the credibility of findings. Relationships among themes were explored to develop a more comprehensive understanding of how school practices, contextual factors, and resources interact to influence attendance outcomes. This form of analytic process emphasized transparency, reflexivity, and systematic comparison to ensure that findings were well-supported by the data and grounded in both empirical evidence and practitioner insight.

School Practices and Attendance VA: Linking Back Qualitative to Quantitative Analysis

From the qualitative interviews, we identify the most common attendance policies and practices that we then link back to the quantitative data. Let P_{st} be a measure of school s ' practice in year t , such as school climate, the frequency they look at attendance data, or other attendance-related measures. To estimate the relationship between school practices and attendance VA, we run the following bivariate OLS regression at the school level:

$$m_{st} = \gamma_0 + \gamma_1 P_{st} + \eta_{st} \quad \text{Eq 2}$$

where $m_{st} = \hat{\mu}_{st}/\sigma_{\mu}$ denotes school s 's normalized VA attendance for year t , that is, school quality scaled in standard deviation units of the school VA distribution, where $\hat{\mu}_{st}$ is our leave-year-out estimate and σ_{μ} is the standard deviation of true school VA.⁵ The coefficient γ_1 , is our parameter of interest. If $\gamma_1 > 0$, then it means that schools with improved practice tend to also improve student attendance. We assess the statistical significance of this relationship using estimated coefficients and standard errors clustered at the school level. We note that this relationship is descriptive and not causal; schools do not randomly implement practices, and

⁵ As mentioned above, we use leave-year-out VA estimates, predicting each school's contribution to attendance in a given year using information from other years. Although this approach may reduce precision by excluding contemporaneous attendance information, school effects exhibit substantial persistence across years, with correlations of approximately 0.65 between adjacent years and 0.54 between years two years apart (Appendix Figure A1). We therefore interpret these estimates as measures of persistent school contributions to attendance rather than contemporaneous school-year effects. Accordingly, the coefficient γ_1 captures the association between school practices and persistent school attendance VA. We acknowledge that the additional noise introduced by excluding the contemporaneous year may attenuate the estimated relationships.

reverse causality is possible, as attendance patterns may influence teachers' and students' perceptions of school climate.

Descriptive Statistics

Sample selection and summary statistics of high school students

The analytic sample includes high school students in grades 9 through 11 during the post-pandemic period, from the 2021–22 through 2023–24 school years. We exclude twelfth-grade students because attendance rates for seniors may be distorted by graduation occurring before the end of the official school year. We also exclude observations with missing current-year attendance or missing baseline attendance, since the VA model relies on comparing current attendance to pre-entry attendance. Finally, we exclude school-grade-year combinations with fewer than ten students with non-missing current and baseline attendance to avoid estimating VA from very small cohorts. We use this student sample to estimate school attendance VA.

Table 1 presents descriptive statistics for the high school student analytic sample. The sample includes 112,114 unique students, who appear in the data for approximately two years on average, for a total of 196,087 student-year observations. Half of the sample is female. In terms of race/ethnicity, 9% of students are White non-Hispanic, 34% are Black non-Hispanic, 51% are Latino, and 4% are Asian. Most students are eligible for free or reduced-price lunch, at 80%. 16% receive special education services, and 17% are English learners.

Students' average attendance rate during the analytic period is 84%, which falls below the threshold for chronic absence (90%). Their average baseline eighth-grade attendance rate was 93%. Overall, 51% of students in the sample are chronically absent in the years studied.

[Table 1 goes here]

School selection and summary statistics of high schools

Using the methodology described in the methods, we estimate school attendance VA for high schools during the 2021–22 through 2023–24 school years. Figure 1 presents the distribution of school attendance VA estimates, weighting observations by school size. The standard deviation of the empirical, shrunken VA estimates is 2.1 percentage points. Because these estimates are shrunken to account for statistical noise, they understate the full dispersion in underlying school effectiveness. To estimate the true variance of school attendance VA, we use the autocovariance structure of the school-year residuals across adjacent years (see Appendix Figure A1) and linearly project the autocovariance vector back to time zero to recover the estimated variance of true school VA. This procedure yields an estimated standard deviation of 2.6 percentage points, which means that attending a school one standard deviation above the average in true attendance VA is predicted to increase student attendance by 2.6 percentage points (approximately 4.7 additional days of attendance per year, assuming a 180-day school year), relative to attending an average school.

[Figure 1 goes here]

We define high VA schools to sample for the qualitative analysis as those in the top 20 percent of the attendance VA distribution based on their 2023–24 VA estimates, the most recent year available.

Table 2 presents summary statistics for all high schools in the analytic sample in Columns 1–3 and for high VA schools in Columns 4–6. The school sample includes 131 unique high schools observed over three years, yielding 390 school-year observations, of which 78 correspond to 26 high-VA schools. By construction, high VA schools have higher attendance VA estimates than the average high school. Across the 2021–22 through 2023–24 period, the

average VA estimate is 3.05 points among high VA schools, compared with 0.19 points across all high schools. High VA schools are similar to the broader sample of high schools on many observed characteristics, but they differ in a few notable ways. On average, high VA schools are smaller, enrolling 394 students in grades 9-11 compared with 590 students in grades 9-11 across all high schools.

Additionally, high value-added schools serve somewhat higher proportions of Black students (55% vs. 49%), students eligible for free or reduced-price lunch (90% vs. 84%), and students receiving special education services (21% vs. 18%) than the overall sample of schools. They also have lower average baseline test scores (-0.42 vs. -0.25) and are less likely to be selective enrollment high schools (4% vs. 8%). Given the structural barriers to attending school these student populations may face, this pattern suggests that schools serving more disadvantaged student populations can nevertheless achieve relatively high attendance VA. This finding is consistent with Singer et al. (2026), who document a positive relationship between the share of economically disadvantaged students and school attendance value-added. These differences are important to consider when interpreting the qualitative findings, since school characteristics may shape schools' ability to implement attendance strategies consistently.

[Table 2 goes here]

From the high VA sampling frame, the final qualitative sample includes four high schools identified as having stronger-than-expected effects on attendance. Table 3 provides details of the schools interviewed and the staff participants. The interviewed participants represent a diverse range of roles and experiences across all four high-VA schools. We interviewed the principal at each school and additional staff members at three schools, such as attendance clerks or academic interventionists, who were recommended by the principal or assistant principal for their

experience and deep understanding of the school's practices and strategies for improving student attendance and re-engagement. Participants were drawn from small to large high schools, including a charter school. Notably, all participants had substantial experience as educators, ranging from 5 to 25 years. Additionally, Table A4 in the Appendix provides details about the school composition of the four case-study schools in comparison to all high schools in the sample.

[Table 3 goes here]

Findings

The findings are organized into four sections, based on the themes that emerged from the school staff interviews. Each section details practices related to: (1) re-engagement strategies via supportive school environments; (2) academic recovery and support to maintain academic rigor and expectations; (3) consistent parent outreach and communication; and (4) the use of attendance data and monitoring systems. For each qualitative finding, we analyze the correlations between 5Essentials domains and attendance survey measures directly linked to school practices and the schools' VA estimates. This approach provides an overview of whether these practices are significantly associated with VA estimates across the sample.

Re-engagement strategies focused on building supportive school environments, and fostering a sense of student agency and belonging

School principals, attendance clerks, and academic interventionists across all four high schools described practices specifically focused on student re-engagement, centered on cultivating supportive school environments. These efforts emphasized centering student voice and creating safe spaces that foster agency and belonging among students.

Examples around centering student voice. Nearly all study participants described intentional efforts to elevate student voice in school decision making. They do this in different ways. For example, three out of four high-VA schools use student feedback and survey data to inform and adapt school policies; one school revised its dress code to address post-pandemic student comfort. Based on student feedback, the policy was updated to allow hoodies, helping students feel more comfortable, and reducing the need to wear masks when not required. Another school encourages students to share their feedback at local school council meetings, directly engaging them in the decision-making process.

Schools also engage students in organizing and participating in culture- and community-building events, including pep rallies and other schoolwide activities. Two schools reported having active student voice committees that regularly consult with principals and broader school teams. One school used empathy interviews to better understand the experiences and barriers faced by chronically absent students. These structures enable students to directly participate in school governance, ensuring their perspectives inform policy and practice.

We're a school that, I've been here for 25 years, and the culture that we have now is not the culture that we had 25 years ago. I mean, there has been a huge shift. It's completely student-centered now. Student-led, student-created, and student voice is elevated. My students participate in everything. They're a part of the decision making here in the school. For my local school council, student reps also survey the student body about what's happening in the building, what the washrooms look like, about activities occurring, about what they want to see more of, what they want to see less of, and they let us know about that as well. (Principal at School C)

Examples around building safe and supportive spaces. Participants from two schools emphasized the importance of designing structures and routines that build a sense of belonging and safety among students and community members. One school intentionally opened its facilities for events serving students, families, and staff, including community gatherings, resource fairs, and arts programming. These efforts foster connections among all stakeholders and reinforce the school's role as a community anchor. For example, one staff member shared that working with a “sense of urgency” and letting students see that you care for them is important to build that trust over time.

We actually have been following this framework on relationship building and one of the biggest things is urgency. If a kid comes to us and they just need a pencil, we make that a priority because that's our first relationship with this particular student, so we want to keep them coming back (Academic Interventionist at School C)

Additionally, both schools established dedicated spaces where students can decompress during the school day, with staff available to provide real-time support and address student needs.

Supportive environment is positively associated with school attendance value-added

The Supportive Environment essential from the 5Essentials Survey captures the extent to which students experience the school as safe, orderly, and supportive, including whether teachers hold high expectations and whether students feel supported by adults and peers. Scores range from 1 to 99 and represent a school's score. Across all high schools in the analytic sample, the mean Supportive Environment score is 50.9, with a standard deviation of 12.6 (see Table 2).

Figure 2 Panel A plots the relationship between Supportive Environment scores and school attendance VA estimates. The relationship is positive, with a correlation of 0.139 (see Table 4 for the correlation table). This suggests that schools with stronger supportive

environments tend to have higher attendance VA, although the magnitude of the correlation is modest.

[Table 4 goes here]

Table 5 presents regression results from Equation 2, where school attendance VA, standardized by its true standard deviation, is regressed on the Supportive Environment measure, which is normalized to have mean 0 and standard deviation of 1 to ease interpretation (Column 1). A 1 SD increase in Supportive Environment is associated with a 0.127 standard deviation increase in school attendance VA, or roughly 238 additional student-days attended per year in a high school of 400 students.⁶ This association is statistically significant at the 5 percent level, providing rigorous quantitative evidence that aligns with the qualitative finding that supportive, relationship-centered school environments may help re-engage students and improve attendance outcomes.

[Table 5 and Figure 2 go here]

Academic Recovery Opportunities and Clear Expectations for Effort

Across all four high schools, several themes emerged regarding how schools supported students at risk of academic failure, particularly through diverse recovery opportunities offered in both in-person and virtual settings. These academic supports were frequently paired with school policies aimed at upholding higher academic standards in the post-pandemic period and adopted unique configurations of these supports.

⁶ Derived as follows: A 1 SD increase in Supportive Environment is associated with $0.127 \text{ SD} \times 2.6 \text{ p.p./SD} = 0.33 \text{ p.p.}$ higher attendance rate, where 2.6 p.p. is the estimated standard deviation of true school VA. Next, for a 400-student school and 180 school days in a year: $(0.33/100) \times 180 \times 400 \approx 238 \text{ student-days}$.

Examples around different types of academic support. Two principal types of academic support practices were either adopted or continued into the post-pandemic years. First, schools increasingly utilized various forms of online coursework or enrolled students in credit recovery programs to address credit deficiencies resulting from chronic absenteeism. In some instances, these programs went beyond remediation, offering credit attainment opportunities for students seeking to enroll in dual-enrollment programs or advance academically—thus allowing students who began the year credit-deficient to progress alongside their peers.

We purchased an online academic program not just for credit recovery that allows for our students to recover classes and credit advancement. For some of our students that are so credit deficient or have been so chronically absent, we've placed them into that program, just so that my kids have an opportunity to actually, you know, graduate on time (Principal at School C).

The second form of academic support centered on in-house tutoring options. Each school implemented these supports on different schedules, such as during lunch periods, recess, or after school, to assist students in catching up on coursework or providing additional academic help. School staff in School A emphasized the deliberate move away from traditional “homework” in favor of “outside practice,” aiming for greater equity given that home environments may not always support effective studying.

School C provided a particularly distinctive example, drawing on its strong neighborhood ties to use the school building as a community support hub. Teacher volunteers made the school available to students on select weekends, providing a quiet, supervised space for students to seek assistance or work on assignments for approximately three hours each session. Like School A,

School C's staff demonstrated responsiveness to student needs, recognizing that home environments may not always be conducive to learning at all times.

Examples around clear expectations. A second set of practices centered around schools moving away from the more flexible grading approaches that characterized the pandemic period. Instead, school staff described returning to stricter grading policies to ensure maintained academic expectations, though each school implemented these changes in different ways.

During the pandemic, many schools in Chicago enacted changes in their grading policies so as not to penalize students for being unable to attend class or turn in assignments which might have affected students' perception of rigor and academic expectations. These changes were partially driven out of concern for pandemic-related challenges, but also because of the influence of the book, *Grading for Equity* (Feldman, 2019), which advocated for separating academic mastery from behavioral factors in grading. This resulted in practices such as “no zero” policies where students might be given a grade of “50%” for assignments and tests that they did not complete, and multiple opportunities to retake tests and turn in missed homework.

For instance, School B increased its minimum grade policy, raising the floor from 30 percent to 50 percent, in alignment with Feldman's equity principles, and closely monitored its impact on students and teachers. This adjustment was intended to better support students who remained chronically absent, while also maintaining more rigorous standards. In another example, School A focused on tightening late-work deadlines, progressively limiting the window for late submissions by grade level. Freshmen were allowed two weeks for late work, sophomores had two weeks in semester one and one week in semester two, with the same for juniors, while seniors were not permitted to submit late assignments at all beyond deadlines. Staff from School A noted that, while these changes were challenging to implement—especially

for seniors—feedback from alumni and teachers suggested that the previous flexibility had “swung too much in the other direction,” and that a renewed attention to academic rigor would better serve students’ long-term interests.

We changed it to a 50% floor. Kids literally could do the absolute bare minimum. Yes, F's did decrease, but D's skyrocketed. These D's are just F's masquerading as D's. We have revised it again now. 30% is the lowest someone can receive. We think grades are more accurate (Principal at School B).

Both forms of academic support addressed the dual challenge of establishing consistent academic expectations while ensuring robust support structures, so that students were not left to navigate post-absence challenges alone. The interviews highlighted iterative combinations of grading policies with academic support designed to give students realistic pathways to catch up after absences.

Ambitious instruction is positively, but weakly associated with school attendance value-added

The most closely aligned measure with the academic recovery and rigor practices described in the qualitative interviews is the Ambitious Instruction essential from the 5Essentials Survey. Ambitious Instruction captures the extent to which classroom instruction is academically demanding and engages students in applying knowledge. The correlation between Ambitious Instruction and school attendance VA is 0.080 (see Table 4).

Regression results in Table 5 show a similar pattern. We normalize the ambitious instruction essential to have a mean of 0 and standard deviation of 1 to ease interpretation. The estimated association between ambitious instruction and school attendance VA is positive but is

not statistically significant. In Column 2, a 1 SD increase in Ambitious Instruction is associated with a 0.073 standard deviation increase in school attendance VA.

Together, these results suggest that schools with stronger ambitious instruction tend to have somewhat higher attendance VA, but the quantitative evidence is weaker than Supportive Environment.

Parent outreach and communication: *Multiple outreach methods to contact students and families.*

Daily and Period-Based Calls and Alerts. Across all four schools, school personnel documented personalized or automated outreach to families. The frequency and modality of these alerts varied by school context. For example, School A was able to conduct personalized outreach after every class period when a student missed a class, while Schools C and D relied on daily phone calls. Notably, in Schools C and D, staff's close-knit ties to the broader community, often from growing up locally or sharing cultural and linguistic backgrounds, enabled them to identify, track, and communicate with family members beyond immediate guardians. By leveraging these relationships, staff enhanced outreach, particularly when primary contacts were unavailable or unresponsive.

Every morning, I create an absentee log. Immediately, I send an email to the parents and students, and I call every parent from that list. Then I create this log every day— 'that kid wasn't here yesterday and the day before; I need to focus.' If a parent doesn't answer, I call and I call. The next day, I email, 'We need to schedule a parent conference.' If we cannot find the parents, we do a home visit (Attendance Clerk at School A).

Expanding outreach to additional family contacts. Attendance clerks and academic interventionists in at least three schools described the benefit of maintaining contact information for relatives and other trusted adults beyond the immediate guardians. In close-knit communities, these extended family connections not only increased the efficacy of outreach efforts for attendance interventions but often facilitated quicker and more reliable communication.

Follow-up through parent conferences and home visits. Interviewed staff described a stepwise approach to parent outreach, employing a range of communication modalities with demonstrable impact on attendance outcomes. In all schools, interventions extended beyond phone calls to include parent conferences and home visits. However, the implementation of home visits was limited in some contexts due to budget or capacity constraints and heightened staff safety concerns, particularly in cities experiencing recent immigration enforcement activity.

Parent workshops and parent shadowing opportunities. Additional targeted engagement efforts were observed in at least two schools, focusing on not only improved communication but also opportunities for parents to better understand their child's educational environment and collaborate with staff. For example, Schools B and C hosted parent portal workshops at the start of the academic year or quarterly to familiarize families with the digital portal, enhance their comfort in accessing information, and enable tracking of student progress and attendance. These workshops were often provided in both English and Spanish and scheduled to coincide with PTA meetings to encourage attendance.

School C further described parent shadowing practices, allowing parents to observe classrooms, engage in targeted discussions about attendance, and co-construct attendance improvement plans with school staff and students. This approach supported parents in gaining a clearer understanding of their child's daily experience and facilitated collaborative strategies,

including the possibility of alternative programs or schedules to ensure regular school attendance.

Parent shadows... really helps our parents understand our students' day... 'you can structure your home a little better'... we're a team, right? What can we do together?
(Academic Interventionist at School C)

Staff emphasized that effective attendance strategies depended on cohesive teamwork (including attendance teams, counseling staff, teachers, and restorative coordinators), with shared responsibility and continual communication. Additionally, inclusive outreach practices—supported by language-accessible materials, digital parent portals, and regular parent workshops—contributed to ongoing family engagement and improved student attendance outcomes.

Timely family outreach is positively and strongly associated with school attendance value-added

The quantitative measures most closely aligned with the parent outreach and communication practices described in the qualitative interviews are the Involved Families measure, and teacher survey measures capturing how quickly teachers report contacting families after student absences. Together, these measures capture both the broader quality of school-family relationships and specific outreach practices related to attendance.

The relationship between school-family engagement measure (Involved Families 5Essentials domain) and school attendance VA is small. The correlation is positive but modest, at 0.087 (see Table 4). Regression results in Column 3 of Table 5, where we normalize this

measure, show that a 1 SD increase in Involved Families is associated with a 0.080 standard deviation increase in school attendance VA, though this association is not statistically significant.

Figure 2 Panel B plots the relationship between school attendance VA and the percentage of teachers who report on contacting families after one or two days of student absence. The correlation is positive, at 0.202. The correlation between the percentage of teachers who report waiting one month or never contacting families with school VA is close to zero, at -0.003.

Regression results indicate a stronger positive association between timely family outreach and attendance VA. As shown in Column 4 of Table 5, a 10-percentage point increase in the share of teachers who contact families after one or two days of absence is associated with a 0.152 standard deviation increase in school attendance VA, or roughly 285 additional student-days attended per year in a high school of 400 students.⁷ This relationship is statistically significant at the 5 percent level. When the analysis is restricted to 2023–24, the school year closest to the 2024–25 administration of the attendance-related survey items, the estimated association is similar in magnitude, at 0.117 standard deviations, but less precisely estimated and statistically significant only at the 10 percent level, likely due to the smaller number of observations (see Appendix Table A3).

In contrast, delayed or absent family outreach is not meaningfully associated with attendance VA. As shown in Column 5 of Table 5, a 10-percentage point increase in the share of teachers who report waiting one month or never contacting families is associated with a 0.002 standard deviation decrease in attendance VA, and the estimate is statistically indistinguishable from zero.

⁷ Derived as follows: The share of teachers who contact parents is expressed as a proportion ranging from 0 to 1. Therefore, a 10 p.p. increase in early-contact teachers is associated with $0.1523 \text{ SD} \times 2.6 \text{ p.p./SD} = 0.396 \text{ p.p}$ higher attendance rate. For a 400-student school, this translates into $(0.396/100) \times 180 \times 400 \approx 285$ student-days.

Data Monitoring and District Support Practices Across Schools

A final set of recurring themes across the high VA schools centers on the frequency and intentionality with which attendance data, student experience, and school climate data are monitored and used to guide interventions.

Variation in attendance data use and monitoring practices. Across all four schools, staff were consistently tracking attendance data, though the frequency and method varied. School A followed a period-by-period check, which enabled immediate identification of students missing classes. Other schools reviewed daily or weekly attendance reports to monitor patterns of truancy and chronic absenteeism, using varied absence rate thresholds for parent outreach and communication. These attendance monitoring practices were leveraged both for personalized outreach and for broader information sharing within the school community. For instance, School A's principal sends a weekly "Know Your Numbers" email to students and families, detailing attendance and grade progress. In School C, the administration reviewed first-period attendance and identified a group of students who consistently arrived late due to dropping off siblings at a nearby elementary school. This insight allowed them to reconsider whether the first period should be an elective rather than a core course, whenever possible.

District or network tools and supports around data use. Staff at all three district-affiliated schools described their access to district and network level data and supports, including platforms such as Cultivate, 5Essentials, Equal Opportunity Survey, student-level analysis tools, or reports generated by data strategists based on specific absenteeism metrics or linked to student experience data.

District and network support were further complemented by professional development or training sessions focused on best practices for improving student attendance and the effective use

of attendance data reports. Notably, staff at two schools specifically highlighted the strong communities formed among attendance clerks and assistant principals from different schools. These regular network meetings were viewed as valuable forums for brainstorming and problem-solving through specific attendance or student re-engagement strategies. For example, schools A and C intentionally use survey information, specifically Cultivate and Equal Opportunity Survey as a starting point to better understand student experiences and engage with students. They provided examples of conducting empathy interviews and quick pulse check-ins to gain further insight into students' daily experiences and what potential changes can be made to that effect.

We do have meetings on a quarterly basis, and we have a really strong community of attendance clerks and a strong network community that helps us. If we shoot them an email or give them a phone call, they'll usually respond within the next day, and we get that support. There was [a PD] last year, but there was no money. Eventually there will be, but access depends on the budget (Attendance Clerk at School D).

These findings, as perceived by staff across four high-VA schools, point to a layered approach within the school system. Access to data, intentionality and frequency of data use, combined with collaborative exchanges and network supports were perceived as helpful in addressing absenteeism in the post-pandemic years. CPS is organized into a central district office and networks of schools, each led by a network chief and staff who provide principals and schools with administrative support, strategic direction, and leadership development. District-level data tools and platforms are available to all CPS schools, so their availability alone does not distinguish high-VA schools. Network-level support, however, varies because each network has

some independence in how it organizes meetings, professional development, and data support. Our findings therefore describe how staff in high-VA schools used and valued these resources, and we cannot determine whether schools with average or low VA have the same access or use them in the same way.

More frequent use of attendance data is positively but weakly associated with school attendance value-added

The survey measures most closely aligned with the attendance data and monitoring practices described in the qualitative interviews are those that capture how frequently teachers report using different types of attendance data. Specifically, we examine teachers' reported use of data on individual students who are chronically absent and school-wide attendance data over time.

The relationship between attendance data-use measures and school attendance VA is relatively small. The relationship is positive but small with the use of individual student attendance data, with a correlation of 0.033 (see Table 4). This relationship with school-wide attendance data is also positive and somewhat larger, with a correlation of 0.096. These descriptive patterns suggest that schools where teachers report more frequent use of attendance data tend to have higher attendance VA, although the magnitude of the relationship is modest.

Regression results in Columns 6 and 7 of Table 5 show a similar pattern. In Column 6, a 10-percentage point increase in the share of teachers who report using individual student attendance data at least monthly is associated with a 0.02 standard deviation increase in school attendance VA. This estimate is small and not statistically significant.

In Column 7 of Table 5, a 10-percentage point increase in the share of teachers who report using school-wide attendance data at least monthly is associated with a 0.05 standard

deviation increase in attendance VA. This association is not statistically significant, which contrasts with the marginally significant correlation due to clustered standard errors.

Additionally, when the analysis is restricted to 2023–24, the school year closest to the 2024–25 administration of the attendance-related survey items, the estimate remains similar in magnitude and is not statistically significant (see Table A3 in the Appendix).

Overall, these results provide suggestive, but not conclusive, evidence that more frequent use of attendance data is associated with higher school attendance VA. The qualitative interviews indicate that data use may matter less as a standalone practice and more as part of a broader system of monitoring, timely outreach, and coordinated student support.

Sensitivity Analysis to Baseline Attendance During Remote Learning

Because attendance during the 2019–20 and 2020–21 school years, when instruction was remote, may not be directly comparable to attendance during in-person instruction, we assessed the sensitivity of our findings to excluding students who attended 8th grade during these school years. We lose 55% of observations in the student sample used to estimate school value-added. Re-estimating school attendance value-added without these cohorts produces estimates that are highly correlated with our original estimates ($r = 0.86$). Furthermore, the relationships between school VA and school practices remain largely unchanged in magnitude and direction, although some estimates lose statistical significance (Appendix Table A7). Notably, the association with Supportive Environment remains similar (0.127 vs. 0.120) but is no longer statistically significant, while the association with timely family outreach changes from 1.523 to 1.735 and remains statistically significant at the 5 percent level. These findings suggest that our main results are robust to excluding students whose eighth-grade baseline attendance was measured during pandemic-related disruptions to instruction.

Discussion and Limitations

Across the country, there is an extensive and diverse set of evidence on what schools can do to address chronic absenteeism. This study identified school practices in four high-VA high schools and examined if they were associated with better attendance in the post-COVID-19 period.

This way we aim to build consensus on some of the high leverage, Tier-1 school practices and specific strategies that are proving to be most effective in improving attendance. Strategies such as consistent family engagement, personalized outreach, having a supportive school environment, and real-time attendance monitoring were identified before the pandemic, and they remain effective in post-pandemic years.

Family engagement stands out as a distinguishing feature of high-VA schools. This emerged both in the qualitative interviews and in the regression analyses. Among all school factors tested, teachers reaching out to families within one to two days showed the strongest positive association with school VA. These findings align with recent research from Michigan (Singer et al., 2026), which also used value-added methodology and identified family engagement strategies among the few practices that differentiate high VA schools. Notably, Singer et al. (2026) found that frequent home visits most clearly distinguished schools with particularly high attendance VA, a finding echoed by all our four high-VA schools, which described home visits as a central component of their attendance strategies. These practices span MTSS tiers: rapid teacher outreach operates as a universal (Tier 1) practice, while home visits represent a more targeted (Tier 2) support for students with emerging attendance concerns. Other family engagement practices, such as the use of attendance plans and personalized text messages to families, were also more common among high-VA schools in the Michigan study. Similarly,

our interviews with high-VA schools highlighted the importance of personalized communication and the active involvement of families in developing attendance plans for students. It is worth noting that Singer et al. (2026) observed that these differences were most pronounced among schools with particularly high VA, while school practices did not significantly distinguish between schools with average and low VA. This is consistent with our methodology, which focuses on identifying strategies among schools with high VA, and our results echo theirs.

Similarly, fostering connections and building a supportive environment for students for meaningful student engagement has proven to be effective, both pre- and post-pandemic. There are various approaches to enhancing student engagement, such as ensuring students have a trusted adult outside the classroom (Balfanz & Byrnes, 2013). This study provides additional evidence of high-VA schools using strategies to build these connections. They also work to create spaces that amplify student voice and establish safe, supportive environments within the school.

Another set of findings around attendance monitoring and data use, while not statistically significant with attendance VA estimates based on teacher reports, were nonetheless described by staff as integral components of these broader systems. The four high-VA schools did not rely on data use alone; rather, they embedded data practices within relational and communicative support structures, leveraging resources both within the school and across the district. In a large urban district like Chicago, the district and within-district networks provide data infrastructure to support this work, including resources around data use, review, interpretation, and monitoring. However, not all schools have the same level of data usage or quality of support, as network resources and culture can vary. In this study, at least two schools were part of a district network

with a strong culture of data use and robust support for professional development and cross-school collaboration.

This study also makes a methodological and substantive contribution to the literature on school attendance. This study used a sequential mixed-methods design, starting with quantitative analyses to estimate school attendance VA and identify high VA schools through purposive sampling. The qualitative phase explored the school practices and strategies that explain differences among these high-VA schools. We further extended the traditional approach by quantitatively testing the associations between the practices identified in the qualitative analysis and attendance VA, enhancing the generalizability of our findings. This back and forth between quantitative-qualitative-quantitative methods allowed us to learn from staff at schools that had been particularly successful in supporting attendance and then consider how likely those findings were to generalize to the broader population of schools. This final step moves beyond most qualitative work on effective schools, which rarely examines whether practices found in a few schools are also associated with outcomes across many. Substantively, the approach grounds the school-level practices in the experience of staff in schools that outperform expectations, while the quantitative analyses indicate how far these practices extend beyond the qualitative sample. This quantitative-qualitative-quantitative design may be useful beyond this study, particularly for research-practice partnerships, where districts' administrative data and practitioners' knowledge can be combined to identify, learn from, and test the practices of schools that outperform expectations.

Limitations

There are several limitations to consider when interpreting these results. First, in a multi-tiered system of supports (MTSS) framework, the practices that our quantitative analyses

examined correspond to Tier 1, the universal, schoolwide supports offered to all students, while our qualitative interviews also identified targeted and individualized interventions that may fall within Tier 2 (targeted, early intervention for students showing attendance risk) or Tier 3 (intensive, individualized support for chronically absent students). For example, schoolwide attendance monitoring and general family communication may represent Tier 1 practices, whereas individualized outreach, home visits, and targeted academic recovery may constitute Tier 2 or Tier 3 supports. The qualitative sample is limited to high-VA high schools, whereas the quantitative analyses examine Tier 1 strategies associated with improving attendance outcomes across the broader analytic sample. The study does not provide an in-depth analysis of individual or subgroup-targeted interventions. Because strong Tier 1 practices may reduce the need for targeted support, but are unlikely to replace them, future research should examine how these universal practices interact with Tier 2 and Tier 3 interventions.

Second, while the quantitative analyses in this study focus on studying Tier-1 strategies that focus on improving attendance for all students, the effects of these strategies may differ depending on students' prior levels of absenteeism. The results are presented at the overall school level and do not account for variation among students with different attendance histories. As such, the findings may not fully capture the effectiveness of these practices for subgroups of students with higher or lower prior absenteeism.

Third, we have also identified strategies and practices that are consistent across these high-VA schools but approaches to implement these practices also vary. Similarly, other contextual factors such as school staffing, capacity constraints, and principal leadership were not deeply examined but are important potential levers for successful implementation and represent areas for future exploration.

Fourth, the survey measures only partially capture the school practices described in the qualitative interviews. For example, the Ambitious Instruction measure does not directly assess the credit recovery and grading practices emphasized in the interviews. Similarly, teacher-reported attendance data use may not adequately capture school-wide monitoring practices, which are often carried out by administrators and attendance clerks. Consequently, the quantitative measures may not fully reflect the practices identified in the qualitative analysis, leading to a mismatch between the survey data and the actual practices at the school level.

Fifth, value-added estimates used in this study were empirically shrunk to improve statistical reliability to reduce random fluctuations and measurement error. However, these methods compress variation in our measures of school effectiveness, making the differences between high-VA and low-VA schools less pronounced than they might actually be. Additionally, if schools that are more successful at improving attendance also induce higher-achieving students to be more likely to attend, controlling for student body composition in the VA estimates may remove meaningful variation in school effectiveness. As a result, associations between school practices and VA estimates in this study should be interpreted as conservative estimates of the relationship. Relatedly, the relationships between school practices and attendance VA are descriptive rather than causal. Schools do not randomly implement practices, and unobserved school characteristics may influence both practices and attendance outcomes. Additionally, reverse causality is possible; schools experiencing higher absenteeism may have teachers who report lower levels of parent engagement or students who perceive weaker peer support for academic work. This concern is relevant because some survey measures were collected after the period used to estimate school attendance value-added.

Sixth, the focus on high-VA schools means the findings may not fully reflect differences in practices at all high-VA schools versus those with average VA that have not been interviewed yet. This matters most for practices such as academic support and expectations, which staff described as important and may be widespread across schools but were not clearly supported by the survey data. Although the district-wide quantitative analysis partly addresses this by testing whether each practice is associated with VA across all high schools, it relies on teacher survey measures that do not capture every practice identified in the interviews with administrators and other school staff. Future research will include schools with average and low VA to clarify which school-level strategies are broadly effective and which may be uniquely impactful within particular school contexts.

Finally, these results are based only on Chicago public schools. Chicago is a large, heterogeneous district whose hundreds of schools vary widely in size, student composition, and achievement. That variation allowed us to examine practices across a broad range of school contexts. At the same time, all Chicago schools are urban and predominantly serve economically disadvantaged students, and the district offers policies and supports that may not exist elsewhere. These conditions may make some practices more salient here than they would be in districts with different student populations, settings, or resources. For example, other districts may lack the data infrastructure that exists in Chicago, and this could make it more difficult to engage in data-informed practices. How much schools can influence attendance may likewise differ in districts that serve fewer economically disadvantaged students, especially if those schools have fewer students that struggle to attend regularly. Even so, these practices were consistent across schools serving very different students, which suggests they offer a useful starting point for schools and districts elsewhere and a productive direction for future research.

Tables

Table 1

Summary Statistics of the Analytic Sample of High School Students in Post-Pandemic Years

Variable	Mean (1)	SD (2)	Min (3)	Max (4)	N (5)
Number of years per student	1.75	[0.74]	1	3	112,114
Female	0.50	[0.50]	0	1	196,079
White	0.09	[0.29]	0	1	196,087
Black	0.34	[0.47]	0	1	196,087
Latino	0.51	[0.50]	0	1	196,087
Asian	0.04	[0.20]	0	1	196,087
Age	16.06	[0.89]	13	22	196,087
Free/reduced lunch	0.80	[0.40]	0	1	196,087
Special education	0.16	[0.37]	0	1	196,087
English language learner	0.17	[0.37]	0	1	196,087
Attending neighborhood school	0.18	[0.39]	0	1	196,087
Grade repeater	0.01	[0.11]	0	1	196,087
Attendance rate	0.84	[0.17]	0	1	196,087
Baseline attendance rate	0.93	[0.09]	0	1	196,087
Chronically absent	0.51	[0.50]	0	1	196,087
Baseline chronically absent	0.19	[0.39]	0	1	196,087
Baseline test scores (std)	0.02	[0.95]	-2.56	4.15	196,087
Baseline GPA	3.13	[0.76]	0	4	162,647
Baseline whether suspended	0.03	[0.18]	0	1	196,087

Notes. This table presents summary statistics for the analytic sample of high school students used to estimate school attendance value-added. The sample includes students in grades 9–11 from the 2021–22 through 2023–24 school years. Baseline controls are based on students’ eighth-grade information, with the exception of baseline test scores, which are constructed by averaging students’ available test scores from grades 6–8, each standardized by year and grade to have a mean of 0 and a standard deviation of 1.

Table 2*Summary Statistics of Schools and High-Value-Added Schools*

	All Schools			High Value-Added Schools		
	Mean (1)	SD (2)	N (3)	Mean (4)	SD (5)	N (6)
Number of years per school	2.98	[0.15]	131	3.00	[0.00]	26
School attendance value-added	0.19	[2.36]	390	3.05	[1.52]	78
School size	589.64	[536.65]	390	394.45	[275.76]	78
White (avg)	0.05	[0.09]	390	0.02	[0.03]	78
Black (avg)	0.49	[0.38]	390	0.55	[0.40]	78
Latino (avg)	0.42	[0.35]	390	0.41	[0.39]	78
Asian (avg)	0.02	[0.05]	390	0.01	[0.02]	78
Free/reduced lunch (avg)	0.84	[0.15]	390	0.90	[0.06]	78
Special education (avg)	0.18	[0.08]	390	0.21	[0.08]	78
English language learner (avg)	0.17	[0.17]	390	0.18	[0.18]	78
Attendance rate (avg)	0.82	[0.07]	390	0.84	[0.06]	78
Baseline attendance rate (avg)	0.93	[0.03]	390	0.92	[0.03]	78
Baseline test scores (std avg)	-0.25	[0.53]	390	-0.42	[0.28]	78
Baseline GPA (avg)	2.98	[0.32]	390	2.88	[0.21]	78
Charter school	0.33	[0.47]	390	0.35	[0.48]	78
Selective enrollment high school	0.08	[0.28]	390	0.04	[0.19]	78
Supportive environment	50.87	[12.57]	356	51.38	[11.40]	73
Involved families	52.41	[16.55]	361	51.45	[13.91]	74
Ambitious instruction	62.38	[13.58]	356	61.47	[12.88]	73
Effective leaders	44.37	[16.17]	366	47.17	[13.92]	75
Collaborative teachers	45.92	[15.80]	365	46.51	[14.49]	74
Percent contact parents 1 or 2 days	0.20	[0.12]	390	0.24	[0.15]	78
Percent contact parents 1 month or never	0.13	[0.10]	390	0.12	[0.09]	78
Percent frequent use of student attendance data	0.71	[0.15]	390	0.74	[0.18]	78
Percent frequent use of school attendance data	0.68	[0.18]	390	0.72	[0.18]	78

Notes. This table presents summary statistics for high schools. High value-added schools are

defined as schools in the top 20% of the school attendance value-added distribution in the most recent year available, 2023–24.

Table 3*Interview Participant List*

School	Participant	Years as educator
School A (Medium HS)	Principal	8+
School A (Medium HS)	Assistant Principal	7+
School A (Medium HS)	Attendance Clerk	10+
School B (Medium Charter HS)	Principal	12+
School C (Large HS)	Principal	25
School C (Large HS)	Academic Interventionist	12+
School C (Large HS)	Academic Interventionist	10+
School D (Small HS)	Principal	24+
School D (Small HS)	Attendance Clerk	5+

Table 4*Correlation of School Attendance Value-Added and School Practices*

	School attendance value-added	Supportive environment	Ambitious instruction	Involved families	Percent contact parents 1 or 2 days	Percent contact parents 1 month or never	Percent frequent use of student attendance data	Percent frequent use of school attendance data
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
School attendance value-added	1							
Supportive environment	0.139***	1						
Ambitious instruction	0.080	0.669***	1					
Involved families	0.087	0.636***	0.551***	1				
Percent contact parents 1 or 2 days	0.202***	-0.178***	-0.056	-0.024	1			
Percent contact parents 1 month or never	-0.003	-0.139***	-0.104**	-0.134**	-0.305***	1		
Percent frequent use of student attendance data	0.033	-0.027	0.039	0.148***	0.296***	-0.110**	1	
Percent frequent use of school attendance data	0.096*	-0.181***	-0.006	0.072	0.340***	-0.016	0.847***	1

Notes: Asterisks indicate statistical significance: *** p < .01, ** p < .05, and * p < .10.

Table 5. *Regression of School Attendance Value-Added on School Practices*

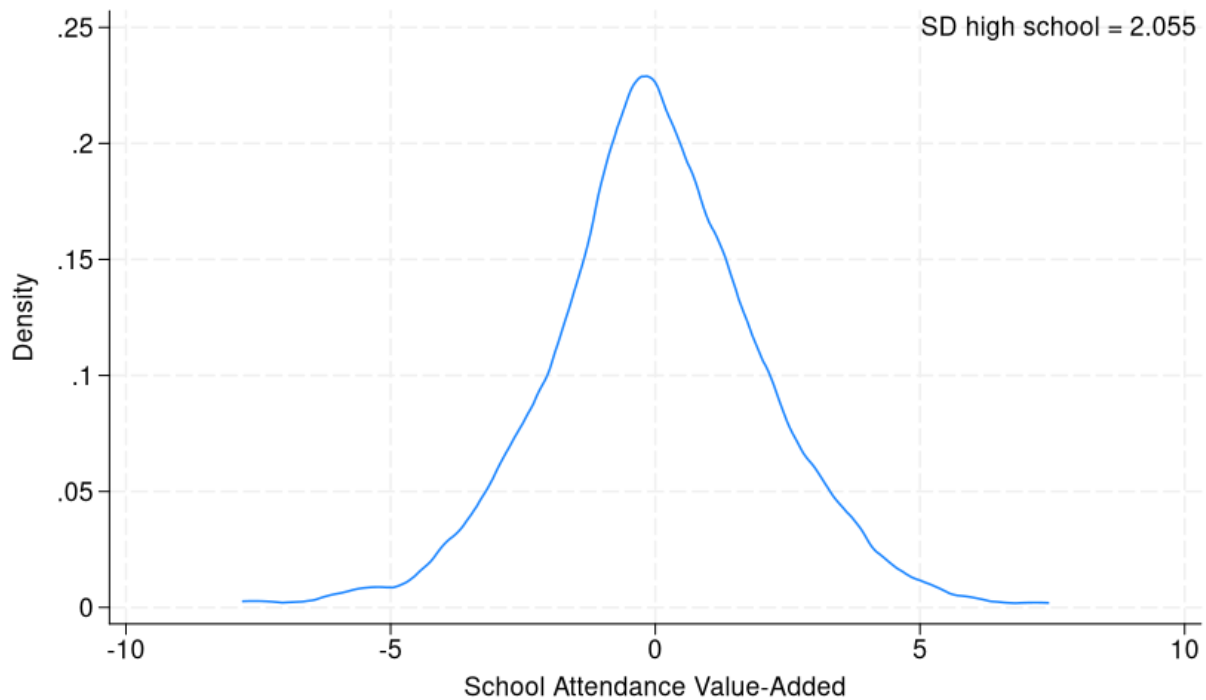
	School Attendance Value-Added						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Supportive environment (std)	0.127** (0.064)						
Ambitious instruction (std)		0.073 (0.059)					
Involved families (std)			0.080 (0.071)				
Percent contact parents 1 or 2 days				1.523** (0.643)			
Percent contact parents 1 month or never					-0.024 (0.713)		
Percent frequent use of student attendance data						0.191 (0.494)	
Percent frequent use of school attendance data							0.483 (0.373)
Constant	0.081 (0.078)	0.081 (0.079)	0.074 (0.080)	-0.240 (0.156)	0.074 (0.109)	-0.064 (0.363)	-0.255 (0.258)
R2	0.02	0.01	0.01	0.04	0.00	0.00	0.01
N	356	356	361	390	390	390	390

Notes. Each column reports estimates from regressions of school attendance value-added on one school variable. Standard errors are reported in parentheses and clustered at the school level.

Supportive environment, Ambitious instruction, and Involved families measures are standardized to have mean 0 and standard deviation of 1. Asterisks denote significance at the *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$ levels.

Figures**Figure 1**

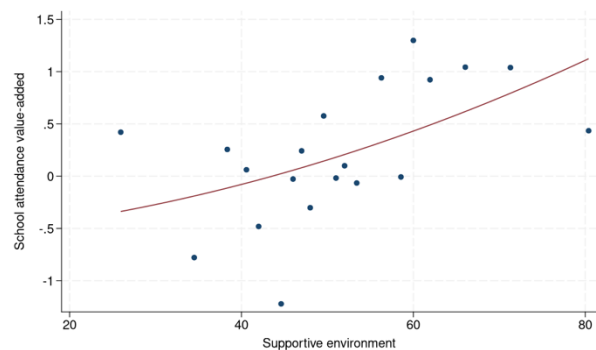
Empirical Distribution of High School Attendance Value-Added Estimates



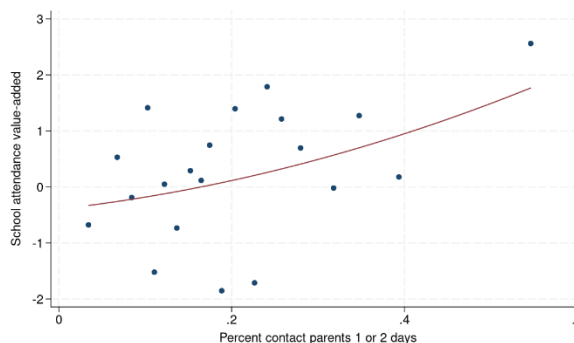
Notes. This figure plots the empirical distribution of school attendance value-added estimates, where each observation is weighted by school size. School attendance value-added is estimated using the methodology described in the School Value-Added Model subsection of the Data and Methods section.

Figure 2*Relationships between School Attendance Value-Added Estimates and School Practices*

Panel A. Supportive Environment



Panel B. Immediate Parent Contact



Notes: Each figure is a binned scatterplot, where the sample is grouped into 20 equal-size groups based on values of the x-axis variable and the mean of school value-added is plotted for each group. The red line is the best quadratic fit based on the underlying data. Supportive environment captures the extent to which schools are safe and orderly, teachers hold high expectations for students, and students experience support from teachers and peers. Percent contact parents is the percentage of teachers in the school that report contacting parents 1 or 2 days after child being absent. School attendance value-added is estimated using the value-added methodology described in the School Value-Added Model subsection of the Data and Methods section.

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Appendix A: Tables and Figures

Table A1

Attendance-Related Teacher Survey Questions

Question	Item	Responses	Survey Measure
For how long does a student have to be absent before you contact his or her parents/guardians	For how long does a student have to be absent before you contact his or her parents/guardians?	1. I never contact parents/guardians because of absences; 2. 1 month or longer; 3. 2-4 weeks; 4. About a week; 5. 1 or 2 days	Percent teachers who contacted after 1 or 2 days Percent teachers who contacted after 1 month or never
How often do teachers in your school use the following kinds of student attendance data:	Data on individual students who are chronically absent School-wide attendance data over time Patterns of attendance by grade level or classroom (ES) Patterns of attendance by course or class period (HS)	1. Never; 2. Once a year; 3. A few times per year; 4. Monthly; 5. Weekly; 6. Daily	Percent teachers who use data on individual students at least monthly Percent teachers who use school-wide attendance data at least monthly

Notes. Some survey questions were asked only for elementary schools (ES), while others are available only for high schools (HS).

Table A2*5Essentials and Measures Used in Analysis*

5Essentials Domains	Measures (reliability)	
Ambitious Instruction (Student reports) Classes are challenging and engaging. The instruction is clear, well-structured, aligned across grade levels, and encourages students to build and apply knowledge. When combined with a Supportive Environment, Ambitious Instruction has the most direct effect on student learning.	English Instruction (0.75)	Students interact with course material and one another to build and apply critical reading and writing skills.
	Math Instruction (0.67)	Students interact with course material and one another to build and apply knowledge in their math classes.
	Academic Press (0.75)	Teachers expect students to do their best and to meet academic demands.
	Quality of Student Discussion (0.77)	Students participate in classroom discussions that build their critical thinking skills.
Involved Families (Teacher reports) The entire school staff builds strong relationships with parents/guardians and are seen as partners in helping students learn. Parent/guardian input and participation is valued in advancing the school's mission.	Parent Influence on Decision-Making (0.85)	The school has created opportunities for parents to participate in developing academic programs and influencing school curricula.
	Teacher-Parent Trust (0.85)	Teachers and parents are partners in improving student learning.
	Parent Involvement in School (0.81)	Parents are active participants in their child's schooling.
Supportive Environment (Student reports) The school is safe, demanding, and supportive. Students feel safe in and around the school and they find teachers trustworthy and responsive to their academic needs. Students value hard work and teachers push all students toward high academic performance.	Peer Support for Academic Work (0.63)	Students demonstrate behaviors that lead to academic achievement.
	School-Wide Future Orientation (0.80)	The school engages all students in planning for life after graduation.
	Expectations for Post-Secondary (0.81)	The school expects all students to attend college and promotes college-readiness.
	Academic Personalism (0.74)	Teachers connect with students in the classroom and support them in achieving academic goals.
	Student-Teacher Trust (0.78)	Students and teachers share a high level of mutual trust and respect.
	Safety (0.70)	Students feel safe both in and around the school building, and while they travel to and from home.

Notes. Reliability estimates come from Rasch models, take into account both standard errors and

misfit, and range from zero to one.

Table A3

Regression of School Attendance Value-Added on Attendance-Related Survey Measures for 2023-24 School Year Only

	School Attendance Value-Added			
	(1)	(2)	(3)	(4)
Percent contact parents 1 or 2 days	1.168* (0.628)			
Percent contact parents 1 month or never		-0.136 (0.774)		
Percent frequent use of student attendance data			0.233 (0.487)	
Percent frequent use of school attendance data				0.527 (0.415)
Constant	-0.168 (0.147)	0.086 (0.125)	-0.096 (0.354)	-0.287 (0.290)
R ²	0.03	0.00	0.00	0.01
N	129	129	129	129

Notes. Standard errors are reported in parentheses and clustered at the school level. The sample is restricted to the 2023–24 school year, the year closest to the 2024–25 administration of the attendance-related survey questions. “Contact parents after 1 or 2 days” is the percentage of teachers who report contacting parents or guardians after one or two days of student absence. “Contact parents after 1 month or never” is the percentage of teachers who report waiting one month or never contacting parents or guardians after a student absence. “Frequent use of student attendance data” and “Frequent use of school attendance data” are the percentages of teachers who report using student-level attendance data or school-wide attendance data at least monthly. Asterisks denote significance at the *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$ levels.

Table A4*Characteristics of Case-Study Schools Relative to All High Schools for SY 2022-SY 2024*

Variable	<i>Case-study schools</i>				<i>All high schools</i>		
	School A	School B	School C	School D	25th pct.	Median	75th pct.
School size	Medium	Medium	Large	Small	244	424	786
Prop. female	0.46	0.53	0.47	0.54	0.46	0.49	0.53
Prop. White	0.15	0.01	0.01	0.00	0.00	0.01	0.04
Prop. Black	0.05	0.35	0.04	0.15	0.10	0.40	0.94
Prop. Latino	0.76	0.63	0.94	0.84	0.04	0.40	0.77
Prop. free/reduced lunch	0.83	0.95	0.92	0.92	0.81	0.89	0.93
Prop. special education	0.20	0.19	0.14	0.17	0.13	0.18	0.23
Prop. English learners	0.24	0.29	0.31	0.40	0.02	0.12	0.30

Notes. School-level averages across school years 2021-22 to 2023-24 for the four case-study schools are shown alongside the 25th percentile, median, and 75th percentile of the same school-level averages for all high schools. Bold values fall outside the interquartile range (below the 25th or above the 75th percentile). Prop. = proportion of students. Asian and other-race proportions were at all four schools (all-high-school median = 0.0; 75th percentile = 0.0) and are not shown. To provide confidentiality, we report school size categorically based on the quartiles of enrollment among all CPS high schools. Schools in the bottom quartile (below 25th percentile) are classified as small, schools in the middle two quartiles (25th to 75th percentile) as medium and schools in the top quartile (above the 75th percentile) as large.

Table A5*Percentage Missing 8th-Grade Test Scores by Cohort*

	Grade 9	Grade 10	Grade 11	Total
School Year				
2022	52.06	97.37	5.91	52.65
2023	5.01	52.02	98.09	49.87
2024	3.35	5.25	51.39	19.31
Total	20.58	51.65	51.57	40.78

Notes: Each cell reports the percentage of student-year observations with missing baseline 8th-grade test scores by grade and school year. For example, for the cohort of students who were in grade 9 in 2022, 52% have missing 8th-grade test scores.

Table A6*Correlations Among Baseline Test Scores*

	Baseline test scores			
	Grade 6	Grade 7	Grade 8	Average 6-8
Grade 6	1			
Grade 7	0.866***	1		
Grade 8	0.827***	0.853***	1	
Average 6-8	0.968***	0.963***	0.963***	1

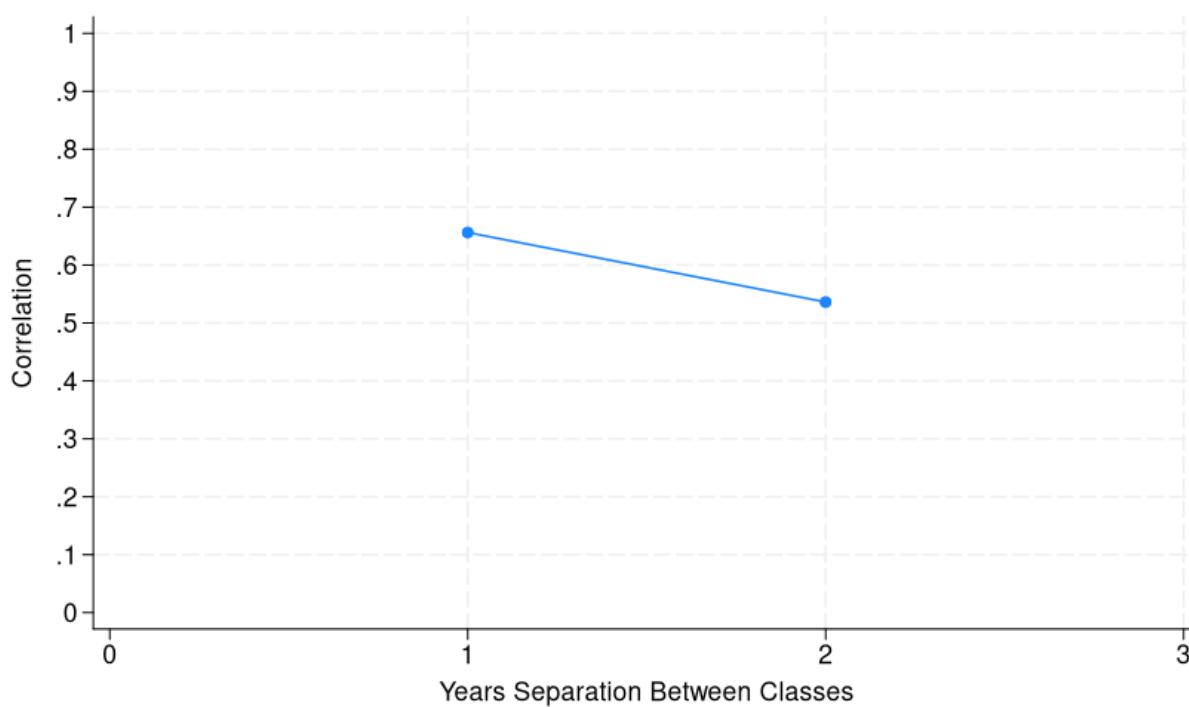
Notes: Asterisks denote significance at the *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$ levels.

Table A7

Regression of Alternative School Attendance Value-Added (Excluding 2020 and 2021 Grade-8 Cohorts) on School Practices

	School attendance value-added (excluding impacted grade-8 cohorts)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Supportive environment (std)	0.120 (0.077)						
Ambitious instruction (std)		0.043 (0.064)					
Involved families (std)			0.064 (0.080)				
Percent contact parents 1 or 2 days				1.735** (0.779)			
Percent contact parents 1 month or never					-0.276 (0.757)		
Percent frequent use student attendance data						0.385 (0.537)	
Percent frequent use school attendance data							0.644 (0.423)
Constant	0.057 (0.088)	0.055 (0.089)	0.054 (0.088)	-0.312* (0.175)	0.076 (0.128)	-0.232 (0.384)	-0.394 (0.283)
R2	0.01	0.00	0.00	0.04	0.00	0.00	0.01
N	354	354	361	388	388	388	388

Notes. Each column reports estimates from regressions of the alternative school attendance value-added measure on one school variable. The alternative VA measure re-estimates school VA without the cohorts of students who attended 8th grade during 2019-20 and 2020-21 school years. Standard errors are reported in parentheses and clustered at the school level. Supportive environment, Ambitious instruction, and Involved families are standardized to have mean 0 and standard deviation of 1. Asterisks denote significance at the ***p<0.01, **p<0.05, and *p<0.10 levels.

Figure A1*Autocorrelation Vector in High Schools*

Notes. This figure shows the autocorrelation of mean attendance residuals across cohorts taught by the same school in different years. To construct these autocorrelation estimates, we first residualize student attendance using the baseline control vector described in the School Value-Added Model subsection of the Data and Methods section. We then calculate a precision-weighted mean attendance residual across grades for each school-year. Finally, we estimate autocorrelation coefficients by correlating school-year residuals across years within the same school, weighting by the total number of students taught across the two years. See the School Value-Added Model subsection for additional details on the estimation procedure and value-added parameters.