UCHICAGO Consortium on School Research

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# *5Essentials* Survey in CPS

## School Improvement and School Climate in High Poverty Schools




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# Introduction

School climate plays a key role in students' academic outcomes. Positive climates are associated with improvement in numerous educational outcomes—including higher attendance, high school graduation, and college enrollment rates; fewer suspensions; and increased learner engagement, motivation, and self-efficacy.[1]

Beyond its benefit for academic outcomes, understanding school climate gives a more comprehensive understanding of how students and staff experience their school environment than other traditional metrics (e.g., attendance, test scores). Under the best circumstances, by providing a more holistic picture, school climate surveys can spur positive developments in schools.[2]

**Given the positive influence of school climate on academic outcomes, several districts—including Chicago Public Schools (CPS)—incorporated climate surveys into their accountability systems, to signal the importance of school climate to schools.** The *5Essentials* Survey, developed in Chicago, is currently administered to CPS students in grades 4-12 and staff serving grades pre-k-12. In 2014, after more than a decade in which the survey was administered voluntarily for formative feedback, the *5Essentials* Survey became part of the CPS accountability policy. It accounts for 5 to 10 percent of a school's quality rating, and reports are publicly available online. The decision to include the *5Essentials* Survey as one of the performance metrics in the district's School Quality Rating Policy (SQRP) reflected CPS leaders' commitment to recognize and evaluate multiple dimensions of school success. Though academic growth and achievement data continue to make up the largest portion of schools' ratings, district leaders believe results from the *5Essentials* Survey shed light on organizational conditions that are important for student learning and school outcomes.[3]

**The use of school climate data in accountability systems has led some educators to question the fairness of this practice.** For example, staff in schools located in high-poverty neighborhoods worry whether school climate measures can adequately account for the greater challenges their schools face in maintaining the same level of some aspects of climate as schools in more affluent areas of the city.[4] There is evidence that the level of poverty experienced by students may be associated with school climate measure scores, as are non-academic and academic outcomes.[5] In the original validation of the

1 Chang, Osher, Schanfield, Sundius, & Bauer (2019); Thapa, Cohen, Guffey, & D'Alessandro (2013); Voight & Hanson (2017).
2 Voight & Nation (2016); Sun, Penner, & Loeb (2017); The Aspen Institute & Society Program (2020).
3 Davis, Shyjka, Hart, Gutiérrez, & Kheraj (2021).
4 CPS educators expressed concerns regarding the *5Essentials* Survey impacting their school rating for a number of reasons. Currently, low school quality ratings can trigger increased district oversight. In addition, they are available to the public and may impact school choice. Finally, school staff also expressed concerns about keeping their schools open, following the district's closure of 50 schools in 2013. For a more complete description of school staff's reaction to the *5Essentials* Survey in accountability, see Davis et al. (2021).
5 Hough, Kalogrides, & Loeb (2017).

## What Are the Five Essential Supports?

Researchers at the University of Chicago Consortium on School Research created a conceptual framework called the five essential supports for school improvement to assess and guide school improvement in CPS. The framework identified five "essential supports" of a school that influenced its students' learning:

**Effective Leaders** are "the driver for change" and school improvement is highly unlikely without a strong principal to build and maintain the other essential supports. Principals coordinate the work of the staff and school community toward a clear and coherent vision. Leadership is then assumed to influence the other four essential supports.

**Collaborative Teachers** are able and willing to trust and work together with their faculty and staff colleagues. This measure also encompasses teachers' assessment of the quality of ongoing professional development, and staff commitment to students, colleagues, and school.

**Involved Families** have input in school decisions and support school staff.

**A Supportive Environment** is safe, nurturing, stimulating, and focused on learning for all students.

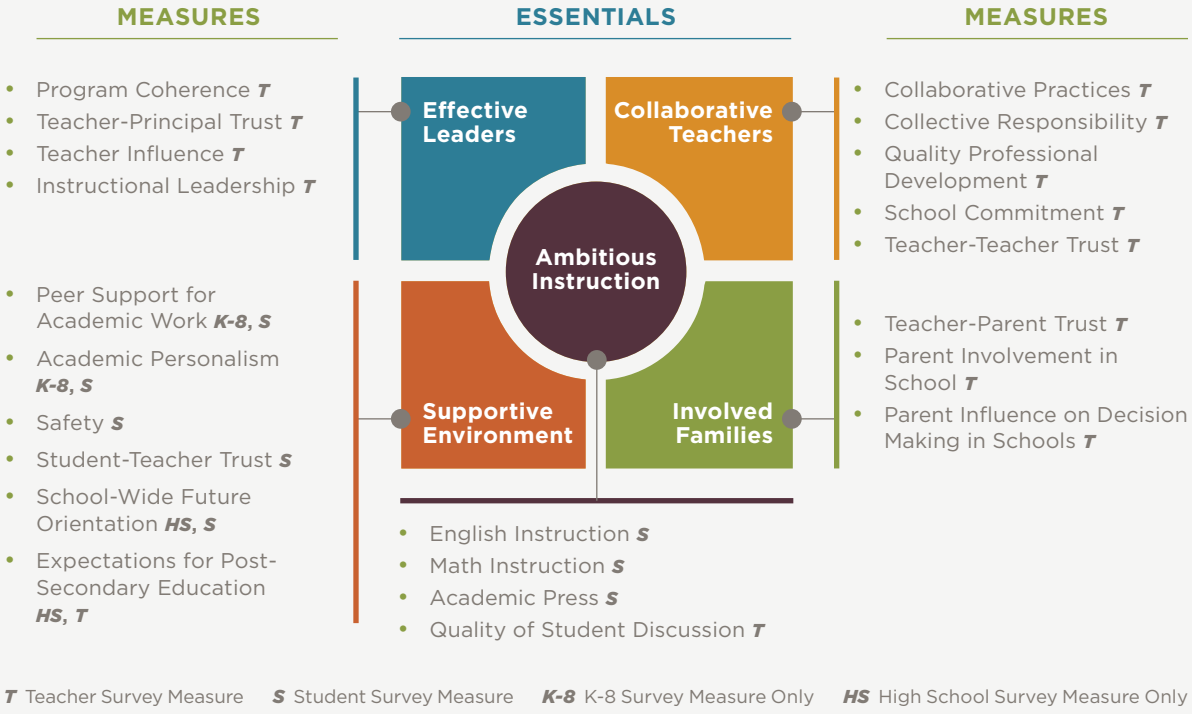
**Ambitious Instruction** challenges students through well-organized curricula.

Twenty years of research provided evidence that these five essential supports of a school organization were the foundation of a school's ability to increase students' learning gains over time, and a 2020 study re-confirmed the *5Essentials* Survey's predictive validity. The *5Essentials* Survey gauges schools' strength in the five areas. Underlying each essential is a set of survey measures. Each survey measure is assessed by a set of survey questions for teachers or students. **Figure A** shows the survey measures that compose each essential area. (Examples of selected measures can be found in **Appendix A on p.20**.)

For more information on the *5Essentials* see **https://consortium.uchicago.edu/surveys**

**FIGURE A**

**The Five Essential Supports are Formed by 20 Separate Measures on the *5Essentials* Survey**




**Note:** Measures that comprise the Supportive Environment essential are different for elementary schools (Safety; Student-Teacher Trust; Peer Support for Academic Work; Academic Personalism) and high schools (Safety; Student-Teacher Trust; School-Wide Future Orientation; Expectations for Post-Secondary Education). Thus, each *5Essentials* Survey includes 20 measures, but there are 22 unique measures.

*5Essentials*, Consortium researchers found that while all schools benefited from a positive school climate, schools with fewer social and economic resources needed to develop even stronger essential supports than other schools to see the same benefits.[6]

**Prompted by educators' concerns of unfairness, this report examines whether the *5Essentials* Survey measures are equally predictive of student success in high- and low-poverty schools.** Multiple validation studies have shown that the *5Essentials* do identify schools which are well organized to improve their students' outcomes.[7] Here, we use administrative and survey data from 2011–12 through 2018–19 in 535 elementary and 207 high schools to look at how the *5Essentials* function across schools serving students of differing levels of economic resources by addressing two questions:

1. Do the *5Essentials* predict school improvement in high- and low-poverty schools?
2. Regardless of poverty level, does every school have a similar likelihood to develop or maintain strong *5Essentials*?

## Overview of Analytic Approach: Creating Indices to Measure School Improvement and School Poverty

The *5Essentials* Survey consistently predicts which schools improve students' academic outcomes in both elementary and high school.[8] Our recent work has shown that of the 22 survey measures, all were in some way positively and significantly associated with schools' improvement in students' test scores, GPA, attendance, Freshman OnTrack, and college enrollment.[9] At the same time, all measures were not associated with all outcomes. Examining average relationships across all schools, we looked at both schools' initial *strength* on each measure (from the prior spring's survey results) and schools' *growth* on each measure over the course of the school year. We found that both starting out the year with strength in *5Essentials* Survey measures and improving on measures during the course of the year predicted improved student outcomes in schools.[10] **Definitions of terms used in this report can be found in the Glossary on p.18.**

In this report, we answer the next critical question of whether the *5Essentials* equally predict improvement in high- and low-poverty schools. To answer this question, we needed to measure and define *school improvement* and *school poverty*.

To measure school improvement, we combined multiple indicators of student achievement into one index to create an overall indicator. *The School Improvement Index* captures year-to-year school improvement in student attendance, GPA, and standardized math test scores.[11] Combining these measures of performance provides a more complete picture of overall academic improvement, since performance in one area influences performance in another. Any other metric alone provides an incomplete picture. Before using this index in our study of high- and low-poverty schools, analyses confirmed that the *5Essentials* predicted scores on the School Improvement Index, as it did for the five separate outcomes—student attendance, GPA, standardized math test scores, Freshman OnTrack, and college enrollment.[12]

Note that the School Improvement Index captures whether or not students at a school improved beyond the level suggested by their academic performance in the previous school year. This reflects improvement, not simply their current level of academic performance. This point is critical because the *5Essentials* Survey is intended to identify schools with the organizational capacity to improve student outcomes, not those that already have a certain level of student achievement.

6 Bryk, Sebring, Allensworth, Luppescu, & Easton (2010).
7 Bryk et al. (2010); Hart, Young, Chen, Zou, & Allensworth (2020).
8 Bryk et al. (2010); Hart et al. (2020).
9 Hart et al. (2020).
10 For simplicity's sake we will focus on schools' strength in the *5Essentials* and not growth. However, we find the relationship of school improvement to growth in the *5Essentials* is similarly positive, but not as strong. See Hart et al. (2020).
11 Of the five outcomes analyzed in our first report, Freshman OnTrack and college enrollment were not included in this index. These two outcomes had somewhat lower correlations to student attendance, GPA, and standardized math test scores and also only applied to a subset of students (ninth- or twelfth-graders). A five-outcome version of the index was also calculated and produced a similar pattern of results. See Appendix B for more details.
12 Hart et al. (2020).

More information on the **School Improvement Index can be found in Appendix B on p.22.**

To measure the degree to which schools served students from different levels of economic resources, we created an index capturing students' experience of poverty. *The School Poverty Index* describes the level of concentrated poverty in the school population, relative to other schools in CPS. Since we do not have family income data, we based our index on the census block on which each student in the school lived. To create this index, we linked students' home address to two variables from the American Community Survey, measured at the census block level: **1)** the percentage of families with income below the poverty line; and **2)** the percentage of adult males employed. This student-level data was then averaged to create the School Poverty Index. In the rest of this report, we will refer to schools as high, average, and low poverty. These levels are defined by the School Poverty Index. High-poverty and low-poverty schools were one standard deviation above and below the mean of CPS schools (approximately the 85th and 15th percentiles). More details regarding the **School Poverty Index can be found in Appendix B on p.23.**

## Demographic Differences between Low- and High-Poverty Schools

It is important to understand the stark differences in context and challenges faced by schools at the two points on the school poverty continuum we are contrasting in this report, and also the much greater likelihood Black students have of attending the highest-poverty schools. In order to illustrate this, we compared descriptive demographic statistics for *four example schools,* one for each poverty level for both elementary and high school (**see Appendix B, Tables B.1, and B.2 on p.24–25**).

The two high-poverty example schools enrolled over 95 percent Black students. The low-poverty schools had a mix of race and ethnicities but with relatively high proportions of White students and relatively few Black students.[13] The majority of students in both low- and high-poverty high schools received free or reduced-price lunch (82 and 96 percent respectively). At the elementary level, these proportions differed much more dramatically, 43 percent compared to 97 percent. In the high-poverty schools, the proportion of students receiving special education services was 10 times higher and rates of student mobility three or four times higher than that of the low-poverty example schools.

It is not exaggerating to say that the high- and low-poverty schools we describe exist in "different worlds." As we consider how schools build and maintain positive climates and organize to improve, it is vital to acknowledge the ways in which our current system concentrates students' needs at one end of this school poverty continuum. High-poverty schools need considerably greater support to meet their students' needs and to maintain the stability to strengthen their communities. As we will show in this report, strong school climates benefit all schools, but especially high-poverty schools. It is therefore, all the more important that we support these schools in building strong climates, through additional human and financial resources, and through building greater understanding that these schools bear enormous responsibilities and deserve attention and support.

13 Tables present data from a midpoint of our study, the 2015–16 school year. As of October 5, 2015, CPS reported the following districtwide statistics: 46 percent Latinx, 39 percent Black, 10 percent White 4 percent Asian, 1 percent multiracial, and fewer than 0.5 percent in each remaining category (Native American/Alaskan, Hawaiian/Pacific Islander). https://www.cps.edu/about/district-data/demographics/#a_racial-ethnic-report

## School Poverty and School Improvement

The relationship between family income and academic achievement (including test scores, attendance, and grades) is both strong and well documented. Research has identified many paths through which economic disadvantage can undermine students' performance, including reduced access to educational resources, healthcare, and nutrition, as well as higher rates of stress and trauma.[A] Rather than using students' current achievement in this study, we look at school climate's influence on student outcome growth, or how much they improve from where they started the year before. It is important to note, however, that while research has shown the relationship between poverty and student growth is weaker than the relationship between poverty and achievement level, it remains significant and substantial. Examining our indices of school improvement and school poverty, we also find a strong negative relationship. **Figure B** illustrates this relationship separately for the elementary (green dots) and high schools (blue dots) in our study. High-poverty schools (to the right on the horizontal axis) generally scored lower on the School Improvement Index, compared to low-poverty schools (to the left), reflecting less growth in students' grades, attendance rates, and test scores at these schools. In elementary schools, where student populations are more homo-geneous in terms of family income, this relationship is much stronger than in high schools. This disparity points to the ongoing reality that, in high-poverty schools, there continue to be challenges and barriers to students' opportunities for growth. In this study, we sought to assess the relationship between the 5Essentials and school improvement in the context of school poverty levels.

**FIGURE B**

**The Relationship Between School Poverty and School Improvement Is Significant and Substantial**


**Note:** Each dot represents one school. Both the School Poverty Index and School Improvement Index for each school are averaged across the years the school is present in our data. The regression line shows the linear relationship between overall school poverty and school improvement.

A Brooks-Gunn & Duncan (1997); Evans & Schamberg (2009); Thompson (2014).

CHAPTER 1

# Do the *5Essentials* Predict Improvement in High- and Low-Poverty Schools?

Research has shown schools' strength and growth in the *5Essentials* predict year to year school improvement, indicating the importance of each of these aspects of school climate for student learning.[14] However, the context a school operates in can affect general relationships such as these, and no context has been found to have such profound implications for schools as conditions of concentrated poverty.[15] This has led educators and researchers to ask, do the 5Essentials predict school improvement in both high- and low-poverty schools?[16] Can schools expect similar improvements in student outcomes if they focus on developing and maintaining their climate and organizational strength, regardless of the economic context of the neighborhoods they serve?

We found that the *5Essentials* predict school improvement in both high- and low-poverty schools, at both the elementary and high school levels. We further discovered that in cases where both high- and low-poverty elementary schools were strong on the *5Essentials*, the *5Essentials* were more strongly related to improvement in high-poverty elementary schools than in low-poverty elementary schools. At the high school level, the amount that schools with strong *5Essentials* improved did not significantly differ between schools at different poverty levels.

In **Figure 1**, we illustrate these findings using a single *5Essentials* Survey measure, Teacher-Teacher Trust. As part of the Collaborative Teachers essential, Teacher-Teacher Trust measures the strength of relationships among teachers in a school (items listed in **Appendix A on p.20**). While each measure varies somewhat in its relationship to the School Improvement Index, this measure represents a typical result. **Figure 1** shows results for elementary schools in the top panel and high schools in the bottom panel. The light green and blue dots indicate where a school with weak Teacher-Teacher Trust—1 standard deviation below average, or about the 15th percentile—would be ranked on the School Improvement Index. The dark green and blue dots indicate where a school with strong Teacher-Teacher Trust—1 standard deviation above average, or about the 85th percentile—would rank on the School Improvement Index. Schools at three different levels on our poverty index are shown: low, average, and high.

***5Essentials* survey measures predicted school improvement in both high- and low-poverty schools at both the elementary and high school level.** As shown in **Figure 1**, among schools with similar poverty levels, those with strong Teacher-Teacher Trust ranked higher on the School Improvement Index than schools with weak Teacher-Teacher Trust. This indicates that for all schools, strong trust among teachers was an important indicator for whether schools had capacity for improvement. While we are using Teacher-Teacher Trust as an example, all measures, except for one (Parent Influence in Decision-Making), showed a similar pattern for both elementary and high schools.[17]

14 Bryk et al. (2010); Hart et al. (2020).

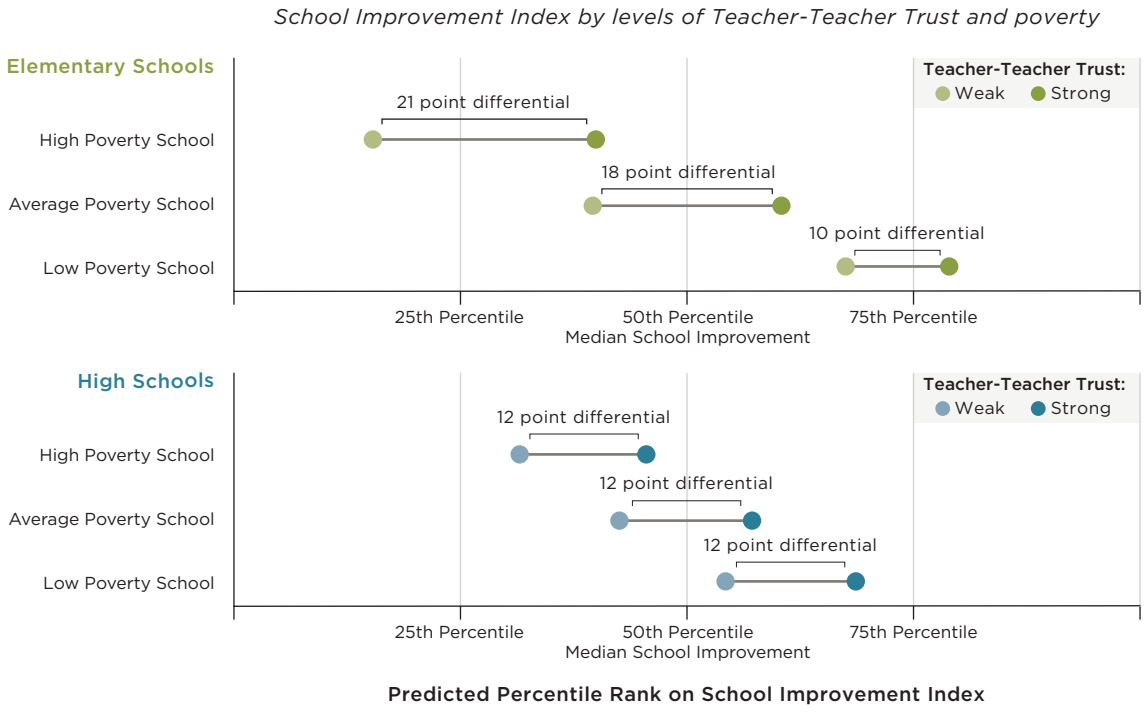
15 Reardon, Weathers, Fahle, Jang, & Kalogrides (2019).

16 In this report, high-poverty and low-poverty schools were one standard deviation above and below the mean of CPS schools (approximately the 85th and 15th percentiles). The mean and standard deviations were calculated separately for elementary and high schools. See Appendix B for more details.

17 One measure, Parent Influence in Decision-Making, did not show a significant relationship with school improvement at the high school level, using the School Improvement Index. In our first report, we found this measure did predict improvement in the individual outcomes of SAT scores, GPA, Freshman OnTrack, and immediate college enrollment, but did not predict test scores.

**FIGURE 1**

**Schools with Strong Teacher-Teacher Trust Ranked Higher in School Improvement Compared to Schools with Weak Teacher-Teacher Trust, Regardless of Poverty Level**




**Note:** The School Improvement Index captures how much students grew in their attendance, grades, and test scores compared to the previous school year. "Strong" is defined as one standard deviation above the average on a particular *5Essentials* Survey measure and "weak" is defined as one standard deviation below the average on a *5Essentials* Survey measure. These standard deviation cut points are approximately equivalent to the 85th percentile and the 15th percentile. The percentile point units indicate each school's student growth, compared to other schools in the district, with the 50th percentile as the median school. School poverty levels were determined using the School Poverty Index. In this figure, high-poverty and low-poverty schools were one standard deviation above and below the mean of CPS schools (approximately the 85th and 15th percentiles). For more information on the School Improvement Index and the School Poverty Index see Appendix B.

**Among elementary schools with strong *5Essentials*, high-poverty schools improved more than low-poverty schools on more than one-half of measures.** The brackets in **Figure 1** show the difference in improvement between schools weak and strong on Teacher-Teacher Trust at the different poverty levels. In elementary schools, illustrated in the top panel, improvement was greatest for high-poverty schools. For example, a high-poverty elementary school with weak trust would rank at the 20th percentile on the School Improvement Index, while the same school with strong trust would rank 21 percentage points higher at the 41st percentile, much closer to the median on the School Improvement Index (50th percentile). For low-poverty schools, the difference in percentile rank would only be 10 percentile points. This suggests that while Teacher-Teacher Trust was beneficial for all schools, it was especially critical at high-poverty elementary schools.

**Table 1** lists all 22 *5Essentials* Survey measures and sorts them into three categories: **1)** those that were more predictive of school improvement in high-poverty schools, **2)** those that were similarly predictive in all schools, and **3)** those more predictive in low-poverty schools. Out of 20 elementary *5Essentials* Survey measures, 13 are most impactful in high-poverty elementary schools. These included measures in the Collaborative Teachers and Effective Leaders essentials, as well as student perceptions of Ambitious Instruction (**see Table 1**). Six measures were similarly predictive of school improvement, regardless of school poverty level, and one measure (Parent Influence) was most predictive in low-poverty elementary schools.[18]

18 One measure, Parent Influence in Decision-Making, provided little benefit to high-poverty schools and was primarily associated with greater school improvement for low-poverty schools.

**TABLE 1**

**Most *5Essentials* Survey Measures Were Similarly Predictive Across Poverty Level in High Schools, While in Elementary Schools, Many Measures Were More Predictive in High-Poverty Schools**

| Measures That Were More Predictive of School Improvement in High-Poverty Schools | Measures That Were Similarly Predictive of School Improvement in High and Low Poverty Schools | Measures That Were More Predictive of School Improvement in Low-Poverty Schools |
|---|---|---|
| **Elementary Schools** | | |
| • Instructional Leadership *T*<br>• Teacher–Principal Trust *T*<br>• Program Coherence *T*<br>• School Commitment *T*<br>• Teacher–Teacher Trust *T*<br>• Collective Responsibility *T*<br>• Collaborative Practices *T*<br>• Quality Professional Development *T*<br>• Student-Teacher Trust *S*<br>• Academic Personalism *K-8, S*<br>• Academic Press *S*<br>• Math Instruction *S*<br>• English Instruction *S* | • Teacher Influence *T*<br>• Safety *S*<br>• Peer Support for Academic Work *K-8, S*<br>• Parent Involvement in School *T*<br>• Teacher–Parent Trust *T*<br>• Quality of Student Discussion *T* | • Parent Influence on Decision Making in Schools *T* |
| **High School** | | |
| | • Teacher–Principal Trust *T*<br>• Program Coherence *T*<br>• Instructional Leadership *T*<br>• Teacher Influence *T*<br>• Teacher–Teacher Trust *T*<br>• Collective Responsibility *T*<br>• Collaborative Practices *T*<br>• Quality Professional Development *T*<br>• School Commitment *T*<br>• Safety *S*<br>• Expectations for Post-Secondary Education *HS, T*<br>• Teacher–Parent Trust *T*<br>• Parent Involvement in School *T*<br>• Quality of Student Discussion *T*<br>• English Instruction *S*<br>• Math Instruction *S* | • Student-Teacher Trust *S*<br>• School-Wide Future Orientation *HS, S*<br>• Academic Press *S* |


- EFFECTIVE LEADERS
- COLLABORATIVE TEACHERS
- SUPPORTIVE ENVIRONMENT
- INVOLVED FAMILIES
- AMBITIOUS INSTRUCTION

***K-8*** K-8 Survey Measure Only
***HS*** High School Survey Measure Only
***T*** Teacher Survey Measure
***S*** Student Survey Measure

**Overall, high schools with strong 5Essentials showed stronger improvement, regardless of school poverty level.** Unlike in elementary schools, for the majority measures, high schools did not show differences in the amount of school improvement between high- and low-poverty schools with strong school climates. In the bottom panel of **Figure 1**, brackets indicate the difference in percentile rank on the School Improvement Index for schools that were weak and strong on Teacher-Teacher Trust. For each poverty level, this difference was similarly sized, 12 percentage points. This pattern is also seen in **Table 2**, where most measures fall in the middle column.

Why would school poverty have less of an effect on the relationship between the *5Essentials* and school improvement at the high school level? One potential reason is that in Chicago, high schools pull students from many neighborhoods across the city, while elementary schools tend to draw students from the immediate neighborhood. This results in elementary student populations being more homogeneous than in high schools, in terms of economic background. There are also many more elementary schools than high schools. A greater number of schools with more variation in the average economic resources among their student populations may be why we see a difference among elementary schools and not high schools.

However, this does not explain the direction of the difference we found, namely that high-poverty schools with strong *5Essentials* improved more than similarly strong low-poverty schools. Rather, the fact that low-poverty schools' improvement depended less on the strength of their *5Essentials* suggests other beneficial aspects of being a low-poverty school contribute to their students' improvement, while school organization is particularly important in schools serving families with fewer economic resources. The reasons high-poverty schools might benefit more from or rely more on Effective Leaders, Collaborative Teachers, and trusting relationships between teachers and students is beyond the scope of this paper, but suggests an important avenue for further research.

Though level of school poverty did not affect the relationship between the *5Essentials* and school improvement for most measures at the high school level, being strong on three of the *5Essentials* Survey measures was associated with greater improvement at low-poverty schools (**see Table 1**). These measures were Schoolwide Future Orientation, Academic Press, and Student-Teachert Trust. For example, low-poverty high schools with strong Teacher-Student Trust ranked 20 percentage points higher on the School Improvement Index than low-poverty schools that were weak in this area. Among high-poverty schools, the difference between strong and weak Teacher-Student Trust only accounted for 5 percentage points difference in school improvement.

**Strong *5Essentials* were not sufficient to overcome the overall disparity in school improvement between high-poverty schools and low-poverty schools.** Although Teacher-Teacher Trust had the strongest relationship to school improvement among high-poverty elementary schools, the increase in school improvement was not enough to compensate for the disparity in school improvement between high- and low-poverty schools, which is starkly apparent in **Figure 1**. For example, high-poverty elementary schools with strong Teacher-Teacher Trust ranked at the 41st percentile of the School Improvement Index, while low-poverty schools with weak Teacher-Teacher Trust ranked at the 65th percentile of the index.[19]

**19** Figure 1 shows the difference between low- and high-poverty schools in school improvement on one measure—Teacher-Teacher Trust—and the differences between poverty levels are smaller in high schools than in elementary schools for that measure. But differences in school improvement between poverty levels differs by measure. And overall, there is greater variation in the School Improvement Index in high schools than in elementary schools.

CHAPTER 2

# Does Every School Have a Similar Likelihood to Develop or Maintain Strong *5Essentials*?

We saw that schools with strong *5Essentials* were significantly more likely to improve overall student achievement, as measured by our School Improvement Index. However, it would not be meaningful to say that high-poverty schools with strong *5Essentials* improve if few of these schools actually developed and sustained strength in these areas. In this chapter, we explore whether schools at all poverty levels had similar likelihood to develop or maintain strong *5Essentials*.[20] When we say schools have a "similar likelihood" to be strong in the five essential supports, we are saying they have a "similar likelihood to be strong" based on the prevalence of schools categorized as strong among low- and high-poverty schools. In other words, are high-poverty schools as likely to show strength in a given *5Essentials* Survey measure as low-poverty schools? Given stakeholders' concerns regarding the fairness of accountability policies involving the *5Essentials* Survey, this was our method of assessing the levelness of the playing field.

**Chances of being strong on the *5Essentials* were found to be similar for schools at all poverty levels for most *5Essentials* survey measures.** For two-thirds of high school survey measures (13) and one-half of elementary school measures (11), high- and low-poverty schools had a similar likelihood of being strong (**see Table 2, middle column**). This included most of the measures in the Effective Leaders and Collaborative Teachers essentials, as well as many measures in the other essentials. This indicates that among high-poverty schools, there were many instances of school leaders and staff who successfully developed strong organizational culture and capacity for school improvement as captured by the *5Essentials* Survey, despite significant historic disinvestment within their communities.

**For about one-third of 5Essentials survey measures, chances of being strong were highest at low-poverty schools.** There were several measures that seemed much more difficult to develop or sustain in high-poverty schools. In both elementary and high schools, about one-third (seven for each elementary and high school) of *5Essentials* Survey measures were *at least twice as likely to be strong at low-poverty schools than at high-poverty schools* (**see Table 2, right column**). Five of these measures were less prevalent in high-poverty schools at both the elementary and high school level. These included one student measure, Safety, and four teacher measures—Parent Involvement, Teacher-Parent Trust, School Commitment, and Quality of Student Discussion. For example, consider one of the measures in the Involved Families essential: Teacher-Parent Trust, which asks teachers to rate the extent to which parents and teachers support each other to improve student learning (**see Appendix A on p.20 for measure description and items**). Low-poverty elementary schools were twice as likely to have strong Teacher-Parent Trust, compared to high-poverty elementary schools. Safety, part of the Supportive Environment essential, was the most extreme example of a measure that was rarely strong in high-poverty schools. Low-poverty elementary schools were about three times as likely to have strong reports of Safety as high-poverty elementary schools. For high schools, the disparity was even more extreme: low-poverty schools were about four times as likely to report strong Safety as

**20** We estimated the likelihoods of low-, average, and high-poverty schools being strong on each measure. We were then able to compare the relative likelihoods associated with each poverty level (e.g., if most of the low-poverty schools are strong on a measure, but few high-poverty schools are strong on that measure, then low-poverty schools are more likely to be strong).

high-poverty schools. This measure asks students how safe they feel inside and outside their school, and traveling between home and school (**see Appendix A on p.20**). While students' feelings about safety are some of the most important to their experience of school and highly predictive of school performance,[21] this area is also one aspect of school climate many leaders and staff feel they have less control over.[22]

**TABLE 2**

**Prevalence of Strong *5Essentials* in Low- and High-Poverty Schools**

| Measures That Were Most Likely to Be Strong at High-Poverty Schools | Measures That Had Similar Likelihood of Being Strong in Low- and High-Poverty Schools | Measures That Were Most Likely to Be Strong at Low-Poverty Schools |
|---|---|---|
| **Elementary Schools** | | |
| • Math Instruction *S*<br>• English Instruction *S* | • Teacher–Principal Trust *T*<br>• Program Coherence *T*<br>• Instructional Leadership *T*<br>• Teacher–Teacher Trust *T*<br>• Collective Responsibility *T*<br>• Collaborative Practices *T*<br>• Quality Professional Development *T*<br>• Student-Teacher Trust *S*<br>• Academic Personalism *S*<br>• Peer Support for Academic Work *S*<br>• Academic Press *S* | • Teacher Influence *T*<br>• School Commitment *T*<br>• Safety *S*<br>• Teacher–Parent Trust *T*<br>• Parent Involvement in School *T*<br>• Parent Influence on Decision Making in Schools *T*<br>• Quality of Student Discussion *T* |
| **High School** | | |
| | • Teacher–Principal Trust *T*<br>• Program Coherence *T*<br>• Instructional Leadership *T*<br>• Teacher Influence *T*<br>• Teacher–Teacher Trust *T*<br>• Collective Responsibility *T*<br>• Collaborative Practices *T*<br>• Quality Professional Development *T*<br>• Student-Teacher Trust *S*<br>• Parent Influence on Decision Making in Schools *T*<br>• Academic Press *S*<br>• English Instruction *S*<br>• Math Instruction *S* | • School Commitment *T*<br>• Safety *S*<br>• School-Wide Future Orientation *HS, S*<br>• Expectations for Post-Secondary Education *HS*<br>• Teacher–Parent Trust *T*<br>• Parent Involvement in School *T*<br>• Quality of Student Discussion *T* |


- EFFECTIVE LEADERS
- COLLABORATIVE TEACHERS
- SUPPORTIVE ENVIRONMENT
- INVOLVED FAMILIES
- AMBITIOUS INSTRUCTION

***K-8*** K-8 Survey Measure Only
***HS*** High School Survey Measure Only
***T*** Teacher Survey Measure
***S*** Student Survey Measure

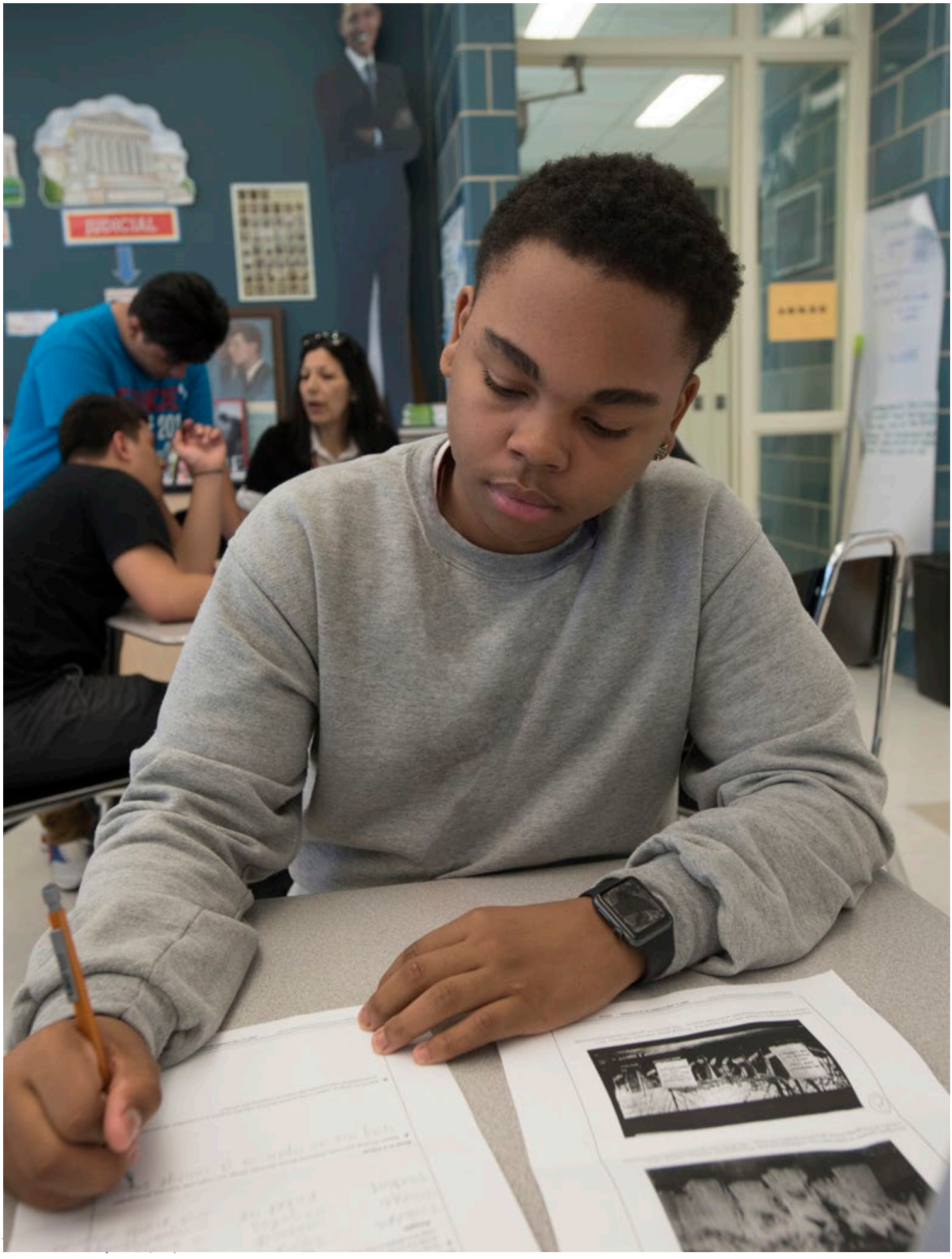
**21** Kraft, Marinell, & Yee (2016).

**22** Davis et al. (2021).

## Can a Measure Be Both More Predictive and Less Prevalent in High-Poverty Schools?

Overall, these two characteristics of measures—the strength of their relationship with school improvement and the prevalence of schools with strength in theseareas—are both important to our understanding of how to use them in schools in different contexts. It is important to understand that these characteristics are independent of each other. For example, it is not necessarily the case that if a given aspect of school climate is more prevalent in high- or low-poverty schools that it is then also more predictive of school improvement for those schools. Strong math and English instruction measures were more prevalent for high-poverty schools and also more predictive of school improvement for these schools. On the other hand, of the seven measures that were less likely to be strong among high-poverty schools, one (School Commitment) also more predictive of school improvement for high-poverty than low-poverty schools. It may seem inconsistent that measures that were less likely to be strong in high-poverty schools were still related to school improvement in these schools. However, for the schools that were able to develop strength in these areas, being strong in the *5Essentials* was associated with greater student learning at schools of all poverty levels. This is consistent with our earlier findings that these measures predicted growth in multiple student academic outcomes.[B]

B Hart et al. (2020).



CHAPTER 3

# Implications

A positive school climate and strong school organization are critically important for student learning.[23] Prior studies have shown that the *5Essentials* Survey is a valid and reliable measure of school climate and demonstrates the relationship between the *5Essentials* and multiple student outcomes at both the elementary and high school levels.[24] In this study, we sought to address stakeholders' concerns regarding the predictability and fairness of using the *5Essentials* Survey in both high- and low-poverty school contexts. Such concerns center around the ability of school climate measures to adequately consider the greater challenges schools located in high-poverty neighborhoods face in maintaining the same level of some aspects of climate as schools in more affluent areas of the city. We asked two questions:

1. Do the *5Essentials* predict school improvement in high- and low-poverty schools?
2. Regardless of poverty level, does every school have a similar likelihood to develop or maintain strong *5Essentials*?

For the first question, our results indicate that strong *5Essentials* predict school improvement, regardless of school poverty level. In elementary schools, improvements in school climate and organizational features in high-poverty schools had a greater benefit for student learning than in low-poverty schools. For high schools, strength in the *5Essentials* did not differ significantly in the degree of school improvement for the majority of *5Essentials* Survey measures.[25]

Our second question attempted to gauge fairness in terms of schools' likelihood to develop strong *5Essentials*. For our measure of likelihood, we used the prevalence of schools categorized as strong in each measure in the low- or high-poverty group to determine differences in likelihood of being strong. For about one-third of measures, low-poverty schools were at least twice as likely to be rated as strong. These measures were similar but not identical for elementary and high school and included Safety, Parent Involvement, Teacher-Parent Trust, School Commitment, and Quality of Student Discussion. For the majority of measures, chances of being strong were similar regardless of poverty level.[26]

An important addition to these findings is that despite the greater improvement in high-poverty schools, we still see disparities in overall levels of improvement as illustrated in **Figure 1 on p.8**. Although improvement in high-poverty schools with strong *5Essentials* was often twice as much as that in similarly strong low-poverty schools, it was not enough to compensate for the disparities in where high-poverty schools started out relative to low-poverty schools.[27] It is important, therefore, to emphasize that while school climate is a critical component to improving student outcomes, addressing greater systemic issues such as segregation plays a fundamental role in creating equitable education. The concentration of high-poverty students and students of color into a subset of schools leaves these schools to face challenges that are completely incomparable to those of low-poverty schools.[28]

23 Evans & Schamberg (2009); Brooks-Gunn & Duncan (1997); Thompson (2014).
24 Hart et al. (2020); Bryk et al. (2010).
25 For three of the *5Essentials* Survey measures being strong was associated with greater improvement at low-poverty high schools. These measures were Schoolwide Future Orientation, Academic Press, and Student-Teacher Trust.
26 Two measures, Math and English Instruction, were more likely to be strong in high-poverty elementary schools.
27 For example, in Figure 1 on p.8, the difference in the amount of school improvement seen in strong vs. weak high-poverty elementary schools was twice as much as the difference seen in strong vs. weak low-poverty elementary schools (21 points vs. 10 points)— yet the strong high-poverty schools' improvement was still below the weak low-poverty schools' improvement.
28 Reardon et al. (2019).

## Using the *5Essentials* Toolbox to Best Serve All Students

Emphasizing the importance of a positive and organized school environment for student learning may feel like a double-edged sword for high-poverty schools. On the one hand, the strength of the learning environment can make an even greater difference on student achievement in schools serving families with fewer economic resources. On the other hand, district policies may hold high- and low-poverty schools equally accountable for maintaining a strong climate, without acknowledging the unequal needs high-poverty schools face. How can tools such as the *5Essentials* be utilized by schools and districts to best serve the interests of all students, families, and communities?

1. **Strong school climate and organization are *ESSENTIAL* to school improvement—they are not frills or "extras."** It is easier to improve the quality of instruction where there is strong leadership and collaborative teachers, no matter the context of the school. In fact, they are more important in minoritized and high-poverty schools. A mindset change focused on the importance of school climate could lead to greater academic improvements and lower teacher turnover.
2. **A strong school climate is a right in itself, independent of its relationship to multiple student positive outcomes.** No matter the setting, students and teachers deserve a calm, supportive environment where they learn and grow together. Strong positive climates in high schools lead to greater social and emotional development. These positive conditions are valuable for everyone, and perhaps more so for students who face economic stress and neighborhood violence.
3. ***5Essentials* as FLASHLIGHT and not HAMMER.** We know that the five essential supports (Effective Leaders, Collaborative Teachers, Ambitious Instruction, Supportive Environment, and Involved Families) are necessary elements for a healthy and effective school. The information provided by the survey should guide improvement efforts and not result in sanctions. Using a tool to identify areas that need strengthening is only an opening move. District policy determines if the next move is simply labeling schools or working to improve them. Given the importance of a healthy school climate for both students and adults, it makes more sense to focus on efforts to use tools, such as the *5Essentials* Survey, more fairly and effectively rather than pursuing uses that undermine stakeholders' confidence in and use of the data.[29]
4. **Listen to students and teachers—they know where improvement is needed.** The consistent ability of the *5Essentials* Survey to predict school improvement underscores the importance and credibility of student and teacher voices. Students' and teachers' impressions of their school environment are the realities that need to be addressed by school improvement plans.[30] Our results continue to show that the benefit of capturing teacher and student voice outweighs the risk of possible measurement error, related to inattentive responses or pressure to increase a school's quality rating. Focus groups with students and teachers may provide helpful insights and specific suggestions for how to improve climate.
5. **Recognize the difficulties faced by educators in high-poverty schools.** Educators in high-poverty schools have valid concerns regarding the systemic inequities in building and maintaining a positive school climate. The Safety measure, for example, was the most extreme example of a measure that was three to four times less likely to be strong in high-poverty schools. However, in every area of the *5Essentials* there were schools at all poverty levels that did develop strength. This underscores the potential ability for all schools to improve, but also must disabuse us of the idea that all schools have similar chances to develop and maintain strong organizations on their own in the face of unequal challenges. School safety is extremely important for school improvement, and these differences in opportunity across schools highlight the need for intentional strategies and resources to close that opportunity gap.

29 To read more about CPS' school leaders' and staff's experiences of the *5Essentials* Survey as part of the district's accountability policy, see our report on the companion qualitative study that was part of this validation (Davis et al., 2021).

30 Blad (2016, January 5).

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# Glossary

## Five Essential Supports Components:

**Five Essential Supports:** The five essential supports are five broad categories of school organization that researchers at the UChicago Consortium identified as part of a larger conceptual framework to help guide schools' improvement efforts. The essentials are: Effective Leaders, Collaborative Teachers, Involved Families, Supportive Environment, and Ambitious Instruction.

***5Essentials* Survey:** This is an annual survey administered to students and teachers across the district used to gauge a school's strength in organization as defined by the five essential supports. Twenty years of research provided evidence that the five essential supports of a school organization were the foundation of a school's ability to increase students' learning gains over time, and a 2020 study re-confirmed the *5Essentials* Survey's predictive validity. While a parent survey is given in CPS, it is constructed and administered by CPS and is not part of the *5Essentials* Survey.

***5Essentials* Measures:** Each essential is made up of measures, which are survey questions grouped together to measure a concept (e.g. Teacher-Teacher Trust). To view the measures that make up each essential, **see Figure A on p.2.**

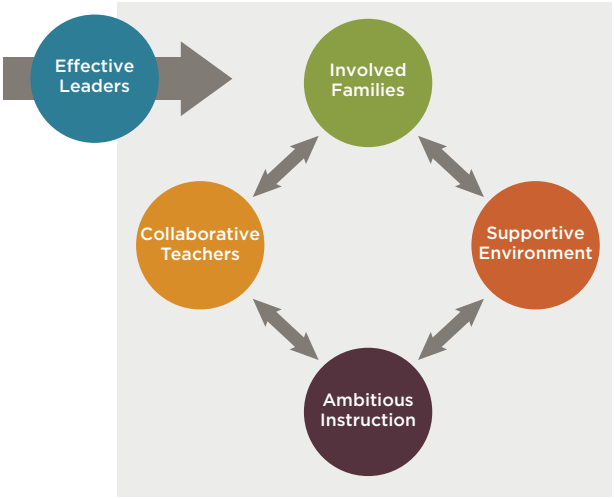
**"Strong" or "Weak" on a Measure/Essential:** "Strong" is defined as one standard deviation above the average on a particular *5Essentials* Survey measure and "weak" is defined as one standard deviation below the average on a *5Essentials* Survey measure. These standard deviation cut points are approximately equivalent to the 85th percentile and the 15th percentile.

**Base Strength:** "Base strength" measures a school's initial measure score at the end of the previous year. In the context of our analyses, we looked to see whether having base strength in a measure is most important for improving student outcomes.

**Growth:** In addition to "base strength," we looked to see if a school's "growth" in a measure over the school year (spring to spring) translated into improvement in student outcomes. We analyzed this in a statistical model separate from "base strength."

**FIGURE 2**

**A Framework of Five Essential Supports**



## Additional Terminology:

**School Improvement Index:** The School Improvement Index captures the amount of year-to-year improvement in the following student outcomes: attendance, GPA, and standardized math test scores. **See Appendix B** for more information.

**School Climate:** The term "school climate" refers broadly to those characteristics of schools, as organizations, that are experienced by students, teachers, administrators, and others in the community. Though individuals' experiences of policies, practices, and procedures may result in differing perceptions of climate, similarities emerge from the collective nature of life in schools. Climate, then, represents the overarching character of individuals' perceptions of a given organizational setting.[31] It is important to note that while the five essential supports encompass many aspects of school climate, the *5Essentials* Survey also measures school organization, including the strength of leadership in the school, and the strength of relationships between adults in a school.

**School Organization:** "School organization" is the idea that schools are complex organizations, consisting of multiple interacting subsystems, bound by rules, roles, and responsibilities similar to those of businesses or other organizations.

**School Poverty Index:** The School Poverty Index describes the level of concentrated poverty in the school population, relative to other schools in CPS. **See Appendix B** for more information.

**SQRP:** The School Quality Rating Policy is the current iteration of CPS's accountability policy. Schools are given a rating on the scale of 1+, 1, 2+, 2, and 3. At the time of this study, *5Essentials* Survey results comprised 10 percent of elementary school SQRP ratings and 5 percent of high school SQRP ratings. Ratings were recently suspended during the COVID-19 pandemic, and CPS began a re-design of the accountability system began in 2020.

**Validity:** A measurement tool, such as the *5Essentials* Survey, is said to be valid when it performs as it is intended to. In this case, if the *5Essentials* Survey is intended to measure the degree to which a school exhibits the characteristics of a strong school organization. It should therefore identify which schools are likely to improve their students' academic performance. In a statistical sense, we say the *5Essentials* Survey has accurately identified strong schools if it has predicted which schools improved. Our first report in this validation study found the *5Essentials* Survey predicted schools' improvement in both elementary and high school.[32] In this report, we answer the next critical validity question, which is, "Do the *5Essentials* predict school improvement in high- and low-poverty schools?"

**31** Berkowitz, Moore, Astor, & Benbenishty (2017).
**32** Hart et al. (2020).

# Appendix A

## Descriptions and Items for Selected *5Essentials* Measures

Measures used to illustrate key findings in this report are included in this appendix, along with the survey items for each measure, to provide additional detail to readers. All measures and items are available upon request on the Consortium website.

**See https://consortium.uchicago.edu/surveys?sub=826#researchAreas**

### Teacher-Teacher Trust

Teachers are supportive and respectful of one another, personally and professionally. **Teachers report the following:**

- Teachers feel respected by other teachers.
- Teachers in this school trust each other.
- It's OK in this school to discuss feelings, worries, and frustrations with other teachers.
- Teachers respect other teachers who take the lead in school improvement efforts.
- Teachers at this school respect those colleagues who are experts at their craft.

### Student-Teacher Trust

Students and teachers share a high level of mutual trust and respect. **Students report**:

- I feel safe and comfortable with my teachers at this school.
- My teachers always keep their promises.
- My teachers will always listen to students' ideas.
- My teachers treat me with respect.

### Teacher-Parent Trust

Teachers and parents are partners in improving student learning. Teachers report the following:

- Teachers feel good about parents' support for their work.
- Parents support teachers teaching efforts.
- Parents do their best to help their children learn.
- Teachers feel respected by the parents of the students.
- Teachers and parents at this school think of each other as partners in educating children.
- Staff at this school work hard to build trusting relationships with parents.

### Safety

Students feel safe both in and around the school building, and while they travel to and from home. **Students report how safe they feel:**

- In the hallways of the school.
- In the bathrooms of the school.
- Outside around the school.
- Traveling between home and school.
- In their classes.

### School Commitment

Teachers are deeply committed to the school. **Teachers report the following**:

- I usually look forward to each working day at this school.
- I wouldn't want to work in any other school.
- I feel loyal to this school.
- I would recommend this school to parents seeking a place for their child.

### Teacher Influence

Teachers have influence in a broad range of decisions regarding school policies and practices. **Teachers report having influence on:**

- Planning how discretionary school funds should be used.
- Determining which books and other instructional materials are used in classrooms.
- Establishing the curriculum and instructional program.
- Determining the content of in-service programs.
- Setting standards for student behavior.

### Parent Involvement in School

Parents are active participants in their child's schooling. **Teachers report that students' parents:**

- Attended parent-teacher conferences when you requested them.
- Volunteered time to support the school (e.g., volunteer in classrooms, help with school-wide events, etc.).
- Contacted you about their child's performance.
- Responded to your suggestions for helping their child.

### Parent Influence on Decision Making in Schools

The school has created opportunities for parents to participate in developing academic programs and influencing school curricula.**Teachers report that the school:**

- Involves parents/guardians in the development of programs aimed at improving students' academic outcomes.
- Involves parents/guardians in commenting on school curricula.
- Includes parent leaders from all backgrounds in school improvement efforts.
- Develop formal networks to link all families with each other (for example: sharing parent directories, providing a website for parents/guardians to connect with one another, etc.).
- Encourage more involved parents/guardians to reach out to less involved parents/guardians.

### Quality of Student Discussion

Students participate in classroom discussions that build their critical thinking skills. **Teachers report the following about classroom discussions:**

- Students build on each other's ideas during discussion.
- Students use data and text references to support their ideas.
- Students show each other respect.
- Students provide constructive feedback to their peers and to me.
- Most students participate in the discussion at some point.
- Students encourage each other to participate in discussion.

# Appendix B

## Further Description of Indices

### The School Improvement Index

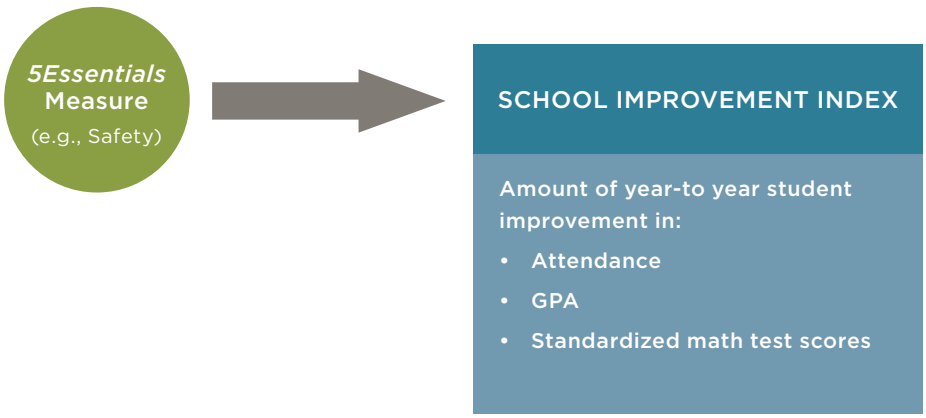
#### Components of the School Improvement Index

In this report, multiple indicators of student achievement are combined into one index as an overall indicator of school improvement. The School Improvement Index captures the amount of year-to-year improvement in the following student outcomes: attendance, GPA, and standardized math test scores (**see Figure B.1**). Only math scores were used instead of both math and reading because overall, test scores were very correlated and only a single variable was chosen so as not to give test scores disproportionately greater weight. Furthermore, of the five outcomes analyzed in our first report, two were left out of this index, for both practical and theory-driven reasons. These were Freshman OnTrack and college enrollment. Practically, both of these measures are binary at the student level, which cannot be analyzed simply with continuous grades, attendance, and test scores. Theoretically, these two outcomes only applied to a subset of students (ninth-graders or graduating twelfth-graders) in times of transition, with no parallel in elementary school. Thus, the three-outcome version was chosen to be consistent across elementary and high school and for better internal consistency. A five-outcome version of the index was also calculated and produced a similar pattern of results.

This index captures whether or not students at a school improved beyond the level suggested by their academic performance in the previous school year. This reflects improvement, not simply their current level of academic performance. The index is calculated separately for elementary and high school. This is our outcome in examining the degree to which *5Essentials* Survey measures predict school improvement (**see Figure B.1**).

**FIGURE B.1**

**Analyses First Examined the Relationship Between Each *5Essentials* Survey Measure and Our School Improvement Index**



The index is reported in *percentile points*, which indicate each school's student growth compared to other schools in the district (either elementary or high school), with the 50th percentile as the median school. A school's percentile score is equivalent to the percentage of other schools that were *below* its rank. In other words, for a school at the 85th percentile, their score on the School Improvement Index was higher than 85 percent of schools in the district, but lower than 15 percent of schools.

### Schools With Strong *5Essentials* Had Higher Values on the School Improvement Index

Before factoring in schools' poverty levels, we analyzed the relationship between the School Improvement Index and the *5Essentials* only. The analysis examined two aspects of the *5Essentials* within schools: **strength** and **growth**. Schools' **strength** on the *5Essentials* was measured by their scores on the prior spring's surveys, indicating whether they began the school year with strong organizational supports in place. Schools' **growth** on the *5Essentials* was measured by comparing the prior surveys to the current year surveys (both in spring). For all 20 *5Essentials* Survey measures at the elementary level, schools with strong scores had significantly higher values on the School Improvement Index than schools with weak *5Essentials* scores. The same was true for all high school measures except one.[33] For growth, the results were similar. On all *5Essentials* Survey measures, both elementary and high schools with strong levels of *5Essentials* growth had significantly higher values on the School Improvement Index than schools with weak *5Essentials* growth.

## The School Poverty Index

### Components of the School Poverty Index

The School Poverty Index describes the level of concentrated poverty in the school population, relative to other schools in CPS. The index incorporates two variables from the American Community Survey (ACS): the percentage of families with income below the poverty line and the percentage of adult males employed. The ACS data was linked to each student through the census block group in which their home was located. This student data was averaged at each school to create the School Poverty Index that measures the average level of poverty of students in the school. Schools were standardized across the CPS district, separately for elementary and high school levels.[34] The School Poverty Index was used in our analysis to see if the level of school poverty influenced the relationship between the five essentials and school improvement (**see Figure B.2**).

## Advantages and Limitations of the School Poverty Index

One advantage of using this School Poverty Index is that and provides more precision than another commonly

**FIGURE B.2**
**School Poverty Index Added to Analysis Model**


33 One measure, Parent Influence on Decision-Making, did not show a significant relationship with school improvement at the high school level using the school improvement index. In our first report, we found this measure did predict improvement in the individual outcomes of SAT scores, GPA, Freshman OnTrack, and immediate college enrollment but did not predict test scores.

34 Elementary and high schools were standardized separately because in CPS, elementary schools tend to draw students from the immediate neighborhood, while high schools often draw from a much larger area. This often results in more homogenous student populations at elementary schools.

used variable, the percent of students receiving free and reduced-price lunch. This metric is often used to describe students' economic background, but in a district such as CPS where 85 percent of students are considered high-poverty by this standard, free and reduced-price lunch does not describe differences between schools as meaningfully as the School Poverty Index.

On the other hand, estimating students' economic circumstances based just on poverty and employment levels comes with significant limitations. For example, it does not account for other factors that affect the resources available to communities, such as the amount of capital investments or activity of social institutions. It is also important to note that due to historical practices of discrimination and inequitable investment, Chicago is a highly segregated city by both race and income. This geographic differentiation means that where students live is strongly indicative of their families' income levels. However, the index by itself does not fully convey the ways that structural racism has created differences in economic opportunity for communities of color. These issues point to the need for quantitative researchers to actively seek more nuanced and asset-based information with which to understand inequality. Though our measures of school poverty are certainly flawed, we believe they still have value for highlighting the potential concerns around measuring school climate without regard to school's differences in composition and resources.

## Demographic Differences Between Low- and High-Poverty Schools

In this report, we defined high-poverty schools as those that were one standard deviation above the mean on the School Poverty Index (about the 85th percentile). Low-poverty schools are those one standard deviation below the mean (about the 15th percentile). In order to illustrate the differences in contexts and challenges faced by schools at these two points on the school poverty continuum, we describe schools at each level. **Tables B.1 and B.2** show descriptive statistics for four example schools, one for each poverty level for both elementary and high school.[35]

A more detailed description of data and methodology can be found in our online appendix. **See** https://consortium.uchicago.edu/publications/*5Essentials*-survey-in-CPS-2021

**TABLE B.1**

**Example High-/ Low-Poverty Schools' Race/Ethnicity Descriptives**

| | Total Number of Students | Black (percentage) | Latinx (percentage) | White (percentage) | Asian (percentage) |
|---|---|---|---|---|---|
| **Elementary School A, High Poverty** | 573 | 99% | <1% | <1% | <1% |
| **Elementary School B, Low Poverty** | 572 | 19% | 43% | 29% | 4% |
| **High School A, High Poverty** | 526 | 98% | <1% | 1% | <1% |
| **High School B, Low Poverty** | 1340 | 28% | 42% | 10% | 16% |

**Note:** The high-poverty schools were one standard deviation above the mean on the School Poverty Index, while the low-poverty schools were one standard deviation below the mean. These statistics are taken from the 2015–16 school year, which was in the middle of our study's time frame. Native American, Pacific Islander / Native Hawaiian, and multiracial students were also represented in the data, but made up less than 5 percent of the student population at all four schools.

35 Tables present data from a midpoint of our study, the 2015–16 school year. As of October 5, 2015, CPS reported the following districtwide statistics: 46 percent Latinx, 39 percent Black, 10 percent White, 4 percent Asian, 1 percent multiracial, and fewer than 0.5 percent in each remaining category (Native American/Alaskan, Hawaiian/Pacific Islander). https://www.cps.edu/about/district-data/demographics/#a_racial-ethnic-report

**TABLE B.2**

**Example High-/ Low-Poverty Schools, Additional Student Descriptives**

| | Total Number of Students | Free or Reduced-Price Lunch (percentage) | English Learners (percentage) | Special Education (percentage) | Student Mobility (percentage) |
|---|---|---|---|---|---|
| **Elementary School A, High Poverty** | 573 | 97% | 13% | 10% | 11% |
| **Elementary School B, Low Poverty** | 572 | 43% | 16% | 1% | 4% |
| **High School A, High Poverty** | 526 | 96% | 21% | 22% | 31% |
| **High School B, Low Poverty** | 1340 | 82% | 13% | 2% | 7% |

**Note:** The high-poverty schools were one standard deviation above the mean on the School Poverty Index, while the low-poverty schools were one standard deviation below the mean. These statistics are taken from the 2015–16 school year, which was in the middle of our study's time frame. Native American, Pacific Islander / Native Hawaiian, and multiracial students were also represented in the data, but made up less than 5 percent of the student population at all four schools.

## ABOUT THE AUTHORS

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

**CHRISTOPHER YOUNG** As a Psychometrician at the UChicago Consortium, Chris helps to create informative survey items and to refine the quantitative feedback provided to practitioners so that it is accurate and useful. Chris also provides support across the Urban Education Institute by advising researchers about applying analysis techniques and providing an accurate interpretation of results for their particular audience. Chris's background is in developmental psychology, a field where he has published on how to identify skills and choose among competing theories of cognition by comparing statistical models. Prior to joining the UChicago Consortium, he helped to develop an assessment system that pre-kindergarten teachers used to measure and improve their students' proficiencies in mathematical and literacy skills through play. Chris focuses on using data to understand change over time. He hopes to build tools that measure and promote healthy schools and that help students to grow beyond expectations of past trends.

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UCHICAGO Consortium on School Research

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