

PRESCHOOL ATTENDANCE IN CHICAGO PUBLIC SCHOOLS

RELATIONSHIPS WITH LEARNING OUTCOMES AND REASONS FOR ABSENCES

Technical Appendix

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Technical Appendix:

Data Sources, Description of Samples, and Analytic Methods

Administrative data on all Chicago Public School (CPS) students are collected by the district and shared with The University of Chicago Consortium on Chicago School Research (UChicago CCSR) twice a year. These data include student background information, such as gender, grade level, birthdate, free or reduced-price lunch eligibility, special education status, and home address. CCSR also receives end-of-year attendance data on all students, which provide the overall number of days each student is enrolled and absent each year.

Using the home address of each student, CCSR merges in census information about the neighborhood in which each student lives to create a measure of **neighborhood concentration of poverty** (the percent of adult males employed and the percent of families with incomes above the poverty line) and a measure of **neighborhood social status** (the mean level of education of adults and the percentage of employed persons who work as managers or professionals). Both neighborhood measures are standardized such that a 0 value is the mean value for census block groups in Chicago and 1 is the standard deviation. Half of the block groups will have a negative value, and half will have a positive value. Neighborhoods with a concentration of poverty value greater than 1 are considered high poverty neighborhoods, those with values between -1 and 1 are considered moderate poverty neighborhoods, and those with values below -1 are considered low poverty neighborhoods. The concentration of poverty variable is especially useful for determining the poorest of the poor neighborhoods in the city because it is much more sensitive to differences than only using the simple free or reduced-price lunch variable.

Throughout this study, we used these data (referred to below as “master file data”) and supplemented them with more specific information on preschool attendance and assessment scores gathered from the CPS Office of Early Childhood Education (OECE) and our own new data collection activities. The data sources, descriptions of samples, and analytic methods for each chapter are described below.

For preschool attendance rates, OECE provided attendance files for all three- and four-year-old CPS preschool students for the school years 2008-09 through 2011-12. These included daily attendance data, along with ELL status for preschool students in 2010-11 and 2011-12. These were supplemented with background information on students from our master files. For our analyses, we excluded preschool

students who were enrolled in a Montessori program or in a program specifically focused on children with special needs.

Cleaning daily attendance data files, 2008-09 through 2011-12: For preschool attendance, CCSR worked closely with OECE to clean that data appropriately. First, we eliminated any students in the files who were never present over the school year. Second, and perhaps most important, we adjusted the data so that professional development days for teachers were not counted against students. During these school years, many preschool teachers had a half-day of professional development every Friday. This affected their AM sessions for about half of the year and their PM sessions for the other half of the year. On these days, students were marked as absent even though it was a non-enrollment day for them. Because PD days for teachers were not on a consistent calendar across all teachers, we adjusted days when nearly all students in a class were marked as having an excused absence and counted those as non-enrollment days. After this adjustment was made, the modal number of enrollment days for preschool students was around 150 days.

Describing Absenteeism in Preschool and the Early Grades

Using our adjusted daily preschool attendance files, student master files from CPS, and average yearly attendance for students in grades kindergarten and above, we created cross-sectional datasets for 2008-09 through 2011-12. For cross-sectional analyses on average absence rates and the percent of students chronically absent, we included students if they were either (1) in our preschool daily attendance files, were three or four years old, and listed as in preschool in our master file, or (2) were in our master file, were between the ages of five and eight, and in kindergarten through third grade (for the analysis of later grades). Table A.1 displays the background characteristics of the preschool children included in our sample; Table A.2 provides overall sample sizes for students ages five through eight included in cross-sectional analyses of absence rates. For three-year-olds enrolled in preschool in 2008-09, we also created a longitudinal dataset to see how their absences changed over time as they moved from preschool through third grade.

Table A.1. Background characteristics of preschool students across all years of analyses

Year	Age Group	N	White	African American	Latino	Other Race	Special Education	Percent from High Poverty Neighborhood
2008-09	3-year-olds	8,386	12%	48%	37%	4%	8%	20%
	4-year-olds	15,713	11%	36%	49%	4%	7%	15%
	All	24,099	11%	40%	45%	4%	7%	17%
2009-10	3-year-olds	8,816	12%	48%	37%	3%	9%	21%
	4-year-olds	16,506	12%	36%	48%	4%	7%	16%
	All	25,322	12%	40%	44%	4%	8%	17%
2010-11	3-year-olds	8,881	12%	44%	40%	5%	9%	19%
	4-year-olds	15,571	11%	35%	50%	5%	8%	15%
	All	24,452	11%	38%	46%	5%	9%	17%
2011-12	3-year-olds	8,830	11%	45%	39%	6%	9%	21%
	4-year-olds	16,118	11%	35%	49%	5%	8%	15%
	All	24,948	11%	38%	45%	6%	8%	17%

Table A.2. Sample size of cross-sectional analysis of absenteeism from ages five through eight

Age	2008-09	2009-10	2010-11	2011-12
5	29,904	30,172	29,490	30,598
6	30,544	30,818	30,593	30,746
7	30,549	30,031	29,959	30,736
8	30,213	29,707	28,809	29,722

Using the cross-sectional dataset, we first calculated average absence rates and the percent of students chronically absent for each age group of students in each year. Using the longitudinal dataset, we calculated average absence rates for the same students at ages three, four, five, and six.

To determine which background characteristics were most strongly associated with chronic absenteeism, we compared pseudo-R² from a series of logistic regressions in which chronic absenteeism was modeled as a function of each background characteristic individually and in combination.

Background characteristics included race, gender, neighborhood poverty, neighborhood social status, special education status, and ELL status.

Relationships between Attendance and Student Outcomes

Preschool Learning Outcomes (KRT)

In 2010-11, OECE at CPS conducted its own study of preschool students using a random sample of preschool classrooms across the district called the Preschool Longitudinal Study (PLS). Within this sample of classrooms, OECE conducted classroom observations and one-on-one child assessments with a sub-sample of children in these classrooms. They used a stratified, random sampling scheme to ensure that their sample of classrooms was representative of the district's preschool programs. We used the following assessment data from this sample of students:

- *Woodcock-Johnson III Tests of Achievement (WJ)*: The WJ is a norm-referenced assessment of academic achievement that has been widely used for decades.¹ Four-year-olds who were part of the PLS sample were administered several subtests of the Woodcock-Johnson III in both the fall and spring of preschool. We used students' fall Letter-Word Identification scores as a control for incoming achievement when we analyzed end-of-year kindergarten readiness scores.
- *Kindergarten Readiness Tool (KRT)*: In spring 2011, four-year-old students were administered a one-on-one assessment of their kindergarten readiness skills. The Kindergarten Readiness Tool (KRT) was designed by CPS in 2009 and has been revised over the years. The version used in spring 2011 was analyzed by CCSR to ensure internal reliability of the tool. We use this assessment as a measure of students' skills in math, letter recognition, pre-literacy, and social-emotional development at the end of preschool.

Our analysis of preschool learning outcomes was based on CPS's sample of 1,265 students in their PLS study who were four years old in 2010-11. Background characteristics are shown in Table A.3; these statistics are presented by six categories of absences and they are also shown for the sample as a whole. For comparison, the bottom row of each table also provides descriptive statistics for the full population of four-year-olds from which the sample was drawn. The sample used in the analysis of preschool learning outcomes is somewhat similar to the full population of four-year-olds in 2010-11, with a few exceptions: there were considerably fewer Latino students and more white students in the sample than in the full population. As a result, fewer students in the sample were chronically absent than in the full population (35 percent compared to 41 percent). The difference in ethnic composition between the sample and the full population may be due to a shortage of Spanish speaking assessors who administered the Woodcock-Johnson III test to this sample at the beginning of the school year.

There are several dissimilarities across students who exhibited different absence rates over the school year. Students who attended most regularly were more likely to be white, less likely to be African American, less likely to be receiving special education services, and less likely to be from a high poverty neighborhood; they also entered preschool with higher incoming skills than students who were absent from school more often.

Table A.3. Descriptive statistics on the sample of students used in the analysis of preschool learning outcomes and on the population of four-year-olds enrolled in 2010-11.

Absence Rates	N					Special Education	Percent from High Poverty Neighborhood	Incoming WJ Letter-Word Identification Score
		White	African American	Latino	Other			
0%<3.3%	275	17%	24%	53%	6%	6%	10%	343.9
3.3%<6.6%	344	25%	26%	43%	6%	3%	10%	341.5
6.6%<10%	203	15%	37%	43%	5%	4%	15%	339.2
10%<15%	206	15%	46%	35%	3%	5%	22%	338.8
15%<20%	125	10%	58%	30%	3%	7%	20%	335.2
20%+	110	9%	70%	20%	1%	7%	29%	325.6
TOTAL Sample	1,265	17%	38%	42%	5%	5%	16%	339.2 (25.9)*
All four-year-olds	15,358	11%	35%	50%	5%	9%	13%	--

* Standard deviation of WJ-LW scores

We ran several analyses of each of the four KRT subscales. The first analysis examined the bivariate relationship between students' absence categories and their KRT scores, without taking into account students' background characteristics or incoming skills. Because of the differences in students' background characteristics and incoming skills by absence category displayed in Table A.2, our second model controlled for these differences.

Both models were run using an HLM measurement model in which a student's score on a KRT subtest was adjusted at level 1 for measurement error in the KRT score (obtained through Rasch analysis of the items that comprise that test). Adjusted scores were nested within students at level 2, and students were nested within preschools at level 3. The initial model did not include any control variables. The model for the second analysis was:

Level 1 Model

$$(KRTScore/StandardError)_{ijk} = \pi_{ijk} * (1/StandardError)_{ijk} + e_{ijk}$$

Level 2 Model

$$\begin{aligned}\pi_{1jk} = & \beta_{10k} + \beta_{11k}*(AbsCat2_{jk}) + \beta_{12k}*(AbsCat3_{jk}) + \beta_{13k}*(AbsCat4_{jk}) + \beta_{14k}*(AbsCat5_{jk}) \\ & + \beta_{15k}*(AbsCat6_{jk}) + \beta_{16k}*(AfricanAmerican_{jk}) + \beta_{17k}*(Latino_{jk}) + \beta_{18k}*(OtherRace_{jk}) \\ & + \beta_{19k}*(ConcentrationPoverty_{jk}) + \beta_{110k}*(SocialStatus_{jk}) + \beta_{111k}*(ELL_{jk}) + \beta_{112k}*(SPED_{jk}) \\ & + \beta_{113k}*(Gender_{jk}) + \beta_{114k}*(FirstPreschoolYr_{jk}) + \beta_{115k}*(WJScore_{jk}) + r_{1jk}\end{aligned}$$

Level 3 Model

$$\begin{aligned}\beta_{10k} &= \gamma_{100} + u_{10k} \\ \beta_{11k} &= \gamma_{110} \\ &\dots \\ \beta_{115k} &= \gamma_{1150}\end{aligned}$$

A third model examined whether there were interactions effects of initial skill and attendance on predicted outcomes – that is, whether attendance had different relationships with outcomes depending on students’ initial skill levels. The model included a linear standardized absence rate (rather than the absence categories included above) and children’s incoming Woodcock-Johnson III scores. The interaction term was an interaction between the linear standardized absence rate and the incoming skill score.

Second Grade Attendance

We show the trajectory of attendance for students from the time they are four years old through the time they are seven years old. These descriptions include all students who were four years old in 2008-09 for whom we had preschool attendance data; we followed them longitudinally for four years. The final sample size was 15,713 students.

Second Grade Learning Outcomes (DIBELS)

The outcome measure for second grade learning outcomes was the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS 6th Edition), provided to CCSR by CPS.² Some CPS schools, but not all, administer the DIBELS to their second-grade students in the spring of each year; the decision of whether or not to use the DIBELS has been left up to network areas and schools. As of 2011-12, when we examined this outcome, charter schools either did not administer the DIBELS in their schools or did not report those scores to CPS.

Our analysis of learning outcomes in second grade was based on a sample of 7,236 four-year-olds who had been enrolled in a CPS preschool during 2008-09, had reached second grade by 2011-12, and had taken the DIBELS standardized test that year. The sample used in the analysis of second grade learning

outcomes was very similar to the full population from which it was drawn (see Table A.4). This represents 46 percent of all four-year-old preschool students in 2008-09. The sample was similar in background characteristics to the full four-year-old population, except that the DIBELS-takers were slightly less likely to be African American (perhaps a function of the fact that charter schools did not administer the DIBELS or provide that data to CPS).

Table A.4. Background characteristics of students who took the DIBELS at the end of second grade in 2011-12, compared with the full four-year-old population in 2008-09.

	N	White	African American	Latino	Other Race	Special Education (in 2nd grade)	Percent from High Poverty Neighborhood	Preschool Absence Rate
Full population of 4-year-olds in 2008-09	15,636	10.5%	36.3%	49.0%	4.1%	4.9%	14.7%	11.4%
Population of 4-year-olds in 2008-09 who took DIBELS in 2011-12	7,236	11.6%	32.9%	50.4%	5.1%	4.8%	13.6%	10.3%

We conducted two-level HLM models with students nested within the school they attended when they were in preschool. Because there were no data available, we did not control for any prior achievement. One set of models included students' absence categories when they were in preschool (as was done with the KRT models), as follows:

Level 1 Model

$$\begin{aligned} \pi_{1jk} = & \beta_{10k} + \beta_{11k}*(AbsCat2_{jk}) + \beta_{12k}*(AbsCat3_{jk}) + \beta_{13k}*(AbsCat4_{jk}) + \beta_{14k}*(AbsCat5_{jk}) \\ & + \beta_{15k}*(AbsCat6_{jk}) + \beta_{16k}*(AfricanAmerican_{jk}) + \beta_{17k}*(Latino_{jk}) + \beta_{18k}*(OtherRace_{jk}) \\ & + \beta_{19k}*(ConcentrationPoverty_{jk}) + \beta_{110k}*(SocialStatus_{jk}) + \beta_{111k}*(SPED_{jk}) \\ & + \beta_{112k}*(Gender_{jk}) + r_{1jk} \end{aligned}$$

Level 2 Model

$$\begin{aligned} \beta_{10k} &= \gamma_{100} + u_{10k} \\ \beta_{11k} &= \gamma_{110} \\ &\dots \\ \beta_{112k} &= \gamma_{1120} \end{aligned}$$

We ran a second set of models to test the relationship between multiple years of being chronically absent and second grade learning outcomes. In these models, we replaced the absence categories at

level 1 with a dummy variable for each year students were chronically absent – preschool, kindergarten, first grade, and second grade. There were no significant interactions between being chronically absent in one year versus another on DIBELS outcomes; therefore the relationship between having more years of chronic absenteeism and DIBELS scores was additive.

Understanding Reasons for Absences, Explaining the Racial Gap, and Exploring School-Level Culture

Understanding Reasons for Absences

With the help and support of OECE, CCSR conducted several types of new data collection during the 2011-12 school year to better understand reasons behind preschool absences. These included teacher logs, parent surveys, and parent interviews.

Teacher logs. In a sample of classrooms (described below), teachers were asked to keep logs of the reasons why students were absent. Logs were filled out for a three-week period at three different points of the year (November, February, and April/May). For each round of data collection, teachers received pre-populated rosters of students either in their AM or in their PM session (our target class). The teachers recorded who was absent on each day of the three week period. They then chose a reason for the absence from a list already provided to them. The options were: doctor's visit (but not sick); sick (non-chronic); chronic illness; lack of transportation; caregiver arrangements; school phobia/separation anxiety; personal time/vacation; lack of sleep; family-related reason; violence/safety; weather; religion; other; do not know. There was also space for the teacher to write notes if s/he could elaborate on the reason.

Teacher logs were collected in 57 preschool classrooms. These classrooms were chosen as a representative sample of classrooms from OECE's Preschool Longitudinal Study sample. Across the three teacher log timepoints, we had data for a total of 1,229 students. This sample is representative of the full CPS preschool population (see Table A. 4 for the background characteristics and overall absence rate of this sample).

Parent surveys. On report card pick-up day in April 2012, OECE and CCSR staff conducted surveys from parents who agreed to participate. Staff approached all parents of children in a target session (morning

or afternoon), and asked them if they would be willing to fill out a short survey. In return, they received a \$5 gift card. Parent surveys were collected in 55 of our 57 sample classrooms. We have responses from parents of 56 percent of all students in these classes, and over 90 percent of the parents who were present for parent-teacher meetings on the day of report card pick-ups. Our total number of survey responses was 627. On the survey consent form, we asked parents for permission to link their responses to information about their child (background characteristics and attendance data). Of the 627 respondents, 525 provided consent and information about their child so we could merge the data about their child with the survey responses. This sample of students (whose parents gave permission to link the survey data to background information) has a lower average absence rate compared to all CPS preschool children, indicating that our data collection procedure may have attracted a biased sample of parents for the survey (see Table A.5).

Parent interviews. On the parent survey, we asked parents to indicate if they would be willing to participate in a follow-up interview about their answers to survey questions. Roughly 65 percent of survey parents agreed to be contacted for a follow-up interview (n=408), providing a large group from which to sample. We used a two-step process to select our interview sample. First, we selected 11 classrooms using a stratified, random sampling design and oversampled classrooms with high average absences. In each of the 11 selected classrooms, we aimed to select a sample of parents that over-represented high rates of absenteeism. Students in each classroom were divided into attendance terciles (based on attendance data as of the beginning of April 2012). We then randomly selected two students from the high tercile of absence rates and one student from each of the low and middle terciles. Our final sample consisted of 40 parents – four of whom were interviewed in Spanish. Table A.4 shows that our interview sample over-represents African American, high poverty, and special education students.

Table A.5. Background characteristics and average absence rates of log, survey, and interview samples

Sample	N	White	African American	Latino	Other Race	Special Education	Percent from High Poverty Neighborhood	Average Absence Rate
Logs	1229	13%	40%	41%	4%	8%	15%	10.7%
Parent Surveys w/ permission to link to student data	525	15%	38%	42%	5%	6%	14%	8.5%
Parent Interviews	40	16%	62%	19%	3%	15%	41%	11.3%

We conducted follow-up phone interviews with our sample of parents. The interviews asked how parents felt about their child’s preschool education and what types of reasons cause their child to miss preschool. Interviews were conducted over the phone and lasted between 20 and 30 minutes. Parents were thanked with a \$25 gift card.

Using information from these three modes of data collection, we describe the overall reasons why children miss school and the relationship to family circumstances and parent beliefs.

Explaining the Racial Gap

The analysis examining factors associated with higher absence rates of African American preschool students compared to white students is based on a sample of 487 students for whom a parent or guardian completed a parent survey (the remaining surveys had been completed by another relative or caregiver). This analysis uses a two-level hierarchical Poisson regression to model to the number of days students were absent, taking into account the total number of days enrolled as a function of student characteristics (i.e., race, age, health) and parent characteristics (marital status, employment status, education level, health, source of primary medical care, mode of transportation to school) at level 1. Students were nested within the preschool in which they were enrolled at level 2.

Level 1 Model

$$\begin{aligned} \text{Log [Absence Rate]} = & \beta_{0j} + \beta_{1j}(\text{Black})_{ij} + \beta_{2j}(\text{Latino})_{ij} + \beta_{3j}(\text{Other Race})_{ij} + \beta_{4j}(\text{Three Year Old})_{ij} + \\ & \beta_{5j}(\text{Single Parent})_{ij} + \beta_{6j}(\text{Parent is Employed with College Degree})_{ij} + \beta_{7j}(\text{Parent has Chronic Illness})_{ij} \\ & + \beta_{8j}(\text{Child has a Chronic Illness})_{ij} + \beta_{9j}(\text{Primary Medical Care: Emergency Room})_{ij} + \beta_{10j}(\text{Use} \\ & \text{Public Transportation to/from School})_{ij} + e_{ij} \end{aligned}$$

Level 2 Model

$$\beta_0 = \gamma_{00} + \mu_j$$

$$\beta_1 = \gamma_{10}$$

...

$$\beta_{10} = \gamma_{100}$$

After running the above model, we used the student-level residual file to draw a random sample of white students that was the same size as the population of African American students in our analysis (depending on which comparison we were making). We then assigned this sample of white students the same characteristics as African American students (defined by the predictors in the above model). Finally, we ran a series of simulations in which we estimated what the rate of chronic absenteeism would be if they had the same characteristics as African American students.

Examining School-Level Culture

Currently, CCSR administers an annual survey to all teachers across the CPS district, called the My Voice, My School survey. To characterize climate in elementary schools, we used teacher responses to the survey administered in the spring of 2012. The teacher response rate on this survey was 64 percent for elementary school teachers (preschool through eighth grade), for a total of 9,531 respondents. For questions asked only of preschool teachers, there were 657 respondents.

Some items on the survey, such as teacher-parent trust, have been included in the survey for many years. Others were added in 2012 specifically for preschool teachers. Table A.4 displays items used in our analyses and whether the items were administered to all teachers in the school or only to preschool teachers.

Using Rasch model of analysis (Wright and Master, 1982), CCSR produces measures from multiple items on the CCSR teacher survey. These are more comprehensive and reliable than individual items. The Rasch approach permits the creation of latent variables (e.g., Teacher-Parent Trust, Preschool Inclusion in Elementary School) that are conceptually and empirically cohesive. Using items that relate to the same characteristic, scales are constructed reflecting the relative “difficulty” (the likelihood that respondents will agree with a given item) of each item.

Our creation of measures is based on the fit statistic, which has an expected value of 1 and is calculated by taking the mean squared deviations between the expected and observed values for that item. Items for which the fit statistic is greater than 1.3 are excluded; these items do not necessarily measure the same underlying construct. The scales are also evaluated based on the person reliability statistic (the ratio of adjusted standard deviation to the root mean square error computed over the persons), which is approximately equivalent to Cronbach’s alpha. We also obtain measures of school-level reliability from an HLM analysis that gauges the degree to which responses are consistent among teachers in the same school.

The Rasch measures are created on a logit scale. Teachers were scored on these measures based on their responses to the 2012 survey. Table A.6 displays the measures used in our analyses for this report and items that are included in the measure. Table A.7 lists the reliabilities for each of our measures. Teacher responses on each measure were then aggregated to the school level to create a school-wide indicator of each measure.

Table A.6. The items that comprise survey measures included in present analyses

Teacher Safety	<p>To what extent is each of the following a problem at your school:</p> <ul style="list-style-type: none"> • Physical conflicts among students • Robbery or theft • Gang activity • Disorder in classrooms • Disorder in hallways • Student disrespect of teachers • Threats of violence towards teachers <p><i>Not at all, A little, Some, To a great extent</i></p>	All teachers
Collective Responsibility	<p>How many teachers in this school:</p> <ul style="list-style-type: none"> • Help maintain discipline in the entire school, not just their classroom. • Take responsibility for improving the school. • Feel responsible to help each other do their best. • Feel responsible that all students learn. • Feel responsible for helping students develop self-control. • Feel responsible when students in this school fail. <p><i>None, Some, About half, Most</i></p>	All teachers
School Commitment	<p>Please mark the extent to which you disagree or agree with each of the following:</p> <ul style="list-style-type: none"> • 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 	All teachers

	<p>their child.</p> <p><i>Strongly disagree, Disagree, Agree, Strongly agree</i></p>	
Teacher-Parent Trust	<p>For the students you teach this year, how many of their parents:</p> <ul style="list-style-type: none"> • Support your teaching efforts • Do their best to help their children learn <p><i>None, Some, About half, Most, All</i></p> <p>How many teachers at this school feel good about parent’s support for their work?</p> <p><i>None, Some, About half, Most, Nearly all</i></p> <p>Please mark the extent to which you disagree or agree with each of the following statements about your school:</p> <ul style="list-style-type: none"> • Teachers and parents think of each other as partners in educating children. • Staff at this school work hard to build trusting relationships with parents. <p><i>Strongly disagree, Disagree, Agree, Strongly agree</i></p> <p>To what extent do you feel respected by the parents of your students?</p> <p><i>Not at all, A little, Some, To a great extent</i></p>	All teachers
Parent Involvement in School	<p>For the students you teach this year, how many of their parents:</p> <ul style="list-style-type: none"> • 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 me about their child’s performance. • Picked up their child’s last report card. <p><i>None, Some, About half, Most</i></p>	All teachers
Preschool Inclusion	<p>How much does your preschool program feel like a part of your larger elementary school?</p> <p><i>Not at all, A little, Somewhat, Very much</i></p> <p>How much do you agree or disagree with the following statement: My school supports collaboration between preschool and kindergarten teachers to align learning goals for children across the years.</p> <p><i>Strongly disagree, Disagree, Agree, Strongly agree</i></p>	Preschool teachers

Table A.7. Teacher Survey Measure Reliabilities

Measure	Individual Reliability	School-level Reliability
Teacher Safety	0.86	0.90
Collective Responsibility	0.91	0.69
School Commitment	0.80	0.77
Teacher Influence	0.82	0.80
Outreach to Parents	0.84	0.71
Teacher-Parent Trust	0.77	0.75
Parent Involvement	0.87	0.73
Preschool Inclusion	0.53*	

*This reliability is lower than we normally accept to create a measure. However, having a continuous measure of teachers' perspectives on the inclusiveness of preschool in their elementary school (rather than two responses to two items) allows us to conduct our analyses described below.

To explore whether school climate is related to preschool students' attendance, we first ran a two level HLM in which we modeled four-year-old students' absence rates (transformed into logits) as a function of their background characteristics (race, gender, ELL status, neighborhood poverty status, neighborhood socio-economic status, and special education status, and distance traveled from home to school). The school-level residuals from this analysis provide a measure of how much better or worse than expected a preschool's absence rate is given the population it serves. A school's residual, when combined with the overall mean absence rate across all preschools, can be thought of as an adjusted absence rate for that preschool in which the effects of students' background characteristics have been removed. We then correlated these school-level residuals with the measures of school climate described in Table A.6 to determine which measures were most strongly related to the adjusted school-level attendance rate.

1. Woodcock, R.W., McGrew, K.S., and Mather, N. (2001). *Woodcock-Johnson III Tests of Achievement*. Rolling Meadows, IL: Riverside Publishing.
2. Good, R.H., and Kaminski, R.A. (Eds.). (2002). *Dynamic Indicators of Basic Early Literacy Skills (6th ed.)*. Eugene, OR: Institute for the Development of Educational Achievement. Available: <http://dibels.uoregon.edu/>.