Kindergarten Readiness in Wisconsin

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Executive Summary

Wisconsin's, gaps between Black and White student high school graduation rates (Richards, 2016) and Black and White fourth-grade math and reading scores (U.S. Department of Education, 2015) are the largest in the nation. These inequalities have led to criticisms of Wisconsin's schools and teachers as ineffective in bolstering the success of students of color and those who are economically disadvantaged.

However, serious attention to disparities in school readiness has largely been absent from these conversations. We know that nationally, students of color and children who are poor enter Kindergarten substantially behind their peers (Reardon & Portilla, 2016) and that disparity can account for much, if not most, of the achievement gap we see later in primary and secondary school (Bradbury, Corak, Waldfogel, & Washbrook, 2015).

This report describes differences in school readiness as reflected by literacy skills at Kindergarten entry among children in Wisconsin. We document inequalities in literacy skills by race/ethnicity, family income and place. Our results show that teachers and schools in Wisconsin face a daunting challenge in producing equitable educational outcomes for our children.

Among the key finding are:

- Almost 66 percent of African American children and 70 percent of Latino children enter Kindergarten less prepared than the typical White child. On average, African American children score 12 points lower and Latino children 15 points behind White children.
- Almost 75 percent of poor children enter Kindergarten behind the typical, more economically advantaged child.
- Differences in the economic resources of families of White children and children of color account for much, but not all of the racial/ethnic differences in school readiness we observe in Wisconsin. If children of color were as financially well off as White children in the state, we would expect gaps in early literacy skills to shrink by 60 percent for African American children and 40 percent for Latino children.
- Variation in literacy skills among Kindergarteners attending the same school is much greater than the variation among schools or among districts. Nonetheless, schools and school districts differ in the readiness of their children in meaningful ways. Milwaukee suburbs have some of the highest average levels of schools readiness and some of the lowest levels of inequality. Alternatively, some areas around the Pittsville and Port Edwards school districts have among the lowest average levels of school readiness and highest levels of inequality.

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Under the leadership of Superintendent Tony Evers, the Department of Public Instruction (DPI) has pursued a path toward greater equity with high achievement for all children. Although much of the focus has been on the glaring achievement disparities between African American and non-Hispanic White children, DPI recognizes the important role that unequal social backgrounds not exclusively tied to race play in creating the inequalities the state confronts.

We applaud the Superintendent and others who have taken the lead in highlighting and seeking to remedy the inequalities imposed on our children. Schools can and should play an important role in making sure the opportunities children enjoy as young adults are unrelated to the challenges their parents confronted, challenges related to economic inequality and racial and ethnic discrimination. However, focusing only on what elementary and secondary schools can do to reduce disparities in academic success and educational attainment is like fighting with one hand tied behind one's back. Schools do not bear sole responsibility for the inequalities in academic outcomes. In fact, 60% to 70% of the difference in academic achievement nationally among eighth-graders in families with a parent who graduated from college relative to families in which parents ended their formal education during or after high school is attributable to differences observed among these children when they started Kindergarten (Bradbury et al., 2015).

Our own analyses of the same data used in Bradbury et al., the Early Childhood Longitudinal Study–Kindergarten cohort of 1998 (ECLS–K), suggest that Black/White disparities in reading are present from the outset and grow appreciably during the primary and middle school years. Between a third and half of the achievement gap in reading that we observe in eighth grade is present in Kindergarten. Measured socioeconomic status (SES; an amalgam of parental education, occupation and income) can account for anywhere from a fifth to the entirety of the initial gap in reading readiness across studies reviewed by Magnuson and Duncan (2006). Any measured contribution of SES to these gaps is likely too low. Isolating the contribution of SES to racial/ethnic disparities in academic achievement is challenging, as SES is only partially accounted for by typically observed measures like parental education and income and is often observed at only one point in time.

In this report, we use data for the population of children who entered Kindergarten in Wisconsin between 2014 and 2016 to describe the social and spatial distribution of school readiness reflected in the literacy skills children possess around the time they start school. As we discuss in the next section of this report, we recognize that reading readiness is only one component of Kindergarten readiness. Furthermore, as our own analyses and results from published literature show, disparities in math and reading readiness are of differing magnitudes and follow different trajectories as students age. At the state level, literacy readiness is the only measure of school readiness we have at Kindergarten entry.

This report has three sections. We begin by discussing different ways of defining school readiness. Next, we outline our approach to measuring literacy skills with the Phonological Awareness Literacy Screening (PALS). We then use a measure of reading readiness based on this test to describe variation in readiness within and between schools and districts in the state and among different groups of students defined by race/ethnicity and eligibility for free or reduced-priced lunch (FRL). While much of the work on achievement disparities focuses on average differences, we also consider differences in reading readiness across a broader range of the distribution, such as the first and third quartiles. Finally, we present differences in readiness across districts in the state.

Defining School Readiness

School readiness refers to the academic and behavioral skills that teachers expect children to possess when they enter Kindergarten. These skills form the foundation for successful learning in the primary school years. Academic skills can be measured by student performance on math and literacy assessments, while behavioral skills are typically measured through parent and teacher rating scales.

Varying dimensions of readiness may have different implications for longer term school experiences and outcomes. Duncan et al. (2007) found that mathematical skills at Kindergarten entry, such as counting and shape recognition, were most predictive of later academic performance on both math and reading assessments, with an effect size of 0.34 for test scores of children aged 8 through 14. Reading, language, and verbal skills had significant but more modest associations with academic skills later in elementary and middle school. Duncan et al.'s findings are broadly consistent with other research, including La Paro and Pianta's (2000) analysis of the relationship between different dimensions of school readiness and academic achievement through second grade and Claessens, Duncan, and Engel's (2009) evaluation of academic progress through fifth grade.

The ability to follow directions and focus on tasks assigned by teachers at Kindergarten entry also predicts later academic performance on reading and math assessments, though the magnitude of the relationship is appreciably less than that of early academic skills (Claessens et al., 2009). Duncan et al. (2007) found that attention skills, proxied by measures of self-regulation and task-persistence as reported by parents and teachers, had an effect size of 0.10 on the performance of children aged 8 through 14 on math and reading assessments. Li-Grining, Votruba-Drzal, Maldonado-Carreño, and Haas (2010) framed attentiveness as student approaches to learning (ATL), which includes self-regulatory skills, persistence, emotion regulation, and attentiveness, as indicated by parent and teacher rating scales. They found that children with more adaptive ATL outperformed those with less adaptive ATL between Kindergarten and fifth grade in both math and reading. Much of this advantage in reading can be accounted for by variation in early academic skills and SES. Net of variation in these attributes, children above average in ATL score about a quarter of a standard deviation higher in math and a third of a standard deviation higher in reading than those below average in ATL. Claessens et al.

(2009) also found a positive correlation between teacher ratings of attentiveness and later academic performance.

Though other behavioral skills like the ability to get along with others also contribute to school readiness, research indicates that they have the least impact on academic performance (Duncan et al., 2007). Recent research has found that socioemotional behavioral skills, such as conflict resolution and externalizing problems, do not have a statistically significant effect on later academic achievement (Claessens et al., 2009; Duncan et al., 2007). Similarly, trends in behavioral skills and other components of school readiness appear to be unrelated. Reardon and Portilla (2016), using nationally representative survey data, found an increase of about 10% of a standard deviation in teacher reports of children's externalizing problems between 1998 and 2010 accompanied by a decline in racial gaps in academic school readiness, children's capacity to follow directions and stay on task, and in the White-Black and White-Hispanic achievement gaps in fourth grade.

School readiness is associated with several factors outside of school including race, parental education and occupation, and family income. Family SES is the strongest predictor of students' school readiness, with performance on academic tasks increasing across quintiles of SES (Jacobson Chernoff, Flanagan, McPhee, & Park, 2007; Lee & Burkam, 2002; Reardon & Portilla, 2016; Waldfogel & Washbrook, 2011). For example, Chernoff et al. (2007) found that children aged 48 to 57 months in the lowest quintile of SES performed an average of 1.3 standard deviations lower than those in the top quintile in a test of literacy skills. Lee and Burkam (2002), and Waldfogel and Washbrook (2011) noted a similar linear trend in academic school readiness across SES quintiles based on complementary national data sets. Though race and SES both contribute to school readiness and early achievement, SES-based disparities were larger than those associated with race.

Beyond these characteristics of children's home lives, school readiness may vary across communities by urbanicity, wealth, and the extent and quality of community supports available to residents. Almost 77% of non-rural White children were proficient in letter recognition upon entering Kindergarten in 1998 compared to 66% of rural White children. The gap for Black urban and rural children was of similar magnitude, with 64% of non-rural Black children earning proficiency compared to 54% of rural Black children (Grace et al., 2006). Miller and Votruba-Drzal (2013) employed a broader continuum of urbanicity that included rural, suburban, small urban, and large urban settings and reported that students in suburban and small urban areas display stronger literacy and mathematical skills than those in rural or large urban environments. Though students in rural and large urban areas experienced different levels of access to center-based care and different average levels of parental expectations, they did not differ on average in their levels of school readiness.

What might account for rural/non-rural differences in school readiness? While rural students are more likely than non-rural students to be enrolled in a Head Start program prior to Kindergarten, rural children were less likely than non-rural students to attend a center-based

early education program in the year before Kindergarten. Broken down by race, 14% of rural Black children attended a center-based early education program in the year before Kindergarten compared to 37% of non-rural Black children; rates among White children were 35% and 55%, respectively. With the exception of Asian-American students, poverty rates for rural children were higher than for non-rural children within racial and ethnic groups. Rural students were half as likely to live in households with an income of $75,000 or more and less likely to have parents who hold at least a bachelor's degree.

The literature reviewed above relies on a broad range of measures of school readiness, spanning early academic and behavioral skills. Unfortunately, Wisconsin is not among the several states that require a comprehensive Kindergarten assessment of children's skills. Wisconsin requires only that districts assess children's literacy skills at Kindergarten entry. Between fall of 2012 and fall of 2015 Wisconsin mandated that districts use PALS to assess these skills, but beginning in 2016 districts were free to choose any literacy assessment. It is therefore only between 2012 and 2015 that comparable fall screener scores are available across the state. In the next section we discuss the PALS and our approach to measuring school readiness as reflected in early literacy skills.

Measuring Early Literacy Readiness Using PALS

PALS is a literacy test developed by researchers at the University of Virginia to measure basic literacy skills of students in pre–K through second grade. The test is primarily designed to identify students who struggle with fundamental literacy skills. This diagnostic tool can be used to assess what students already know and what they still need to learn to become successful readers. Research has provided evidence of the reliability of PALS in measuring early literacy skills (Townsend & Konold, 2010).

The structure of the PALS test and the tasks administered vary from grade to grade. This report focuses on the PALS–Kindergarten test administered in fall. The PALS–K test (hereafter simply 'PALS') measures five fundamental literacy skills: phonological awareness, alphabet knowledge, letter-sound knowledge, concept of word, and word recognition. The analyses in this report are based on the total PALS score, summed across these skill domains.

Alternative Approaches to Measurement

In addition to calculating a simple additive scale across PALS domains, we experimented with creating summed scales based on standardized measures of each subscale to reduce the effect of differences in variance across subscales. We also estimated factor scores across the subdomains using principal factor analysis to consider whether the subdomains load on to multiple factors. The principal components model indicated one dominant underlying factor with another two factors having eigenvalues >1. The first principal component, however, accounts for 60% of the shared variance among the subdomains. Correlations of the first principal component factor score, the standardized score, and the raw score show that those measures are more or less interchangeable. As a result, the remainder of this report focuses on the simple additive score.

For reference, Table 1 shows the means and standard deviations for scores on each subscale of PALS and the summed score for children taking the Kindergarten assessment in fall 2013, 2014, or 2015.

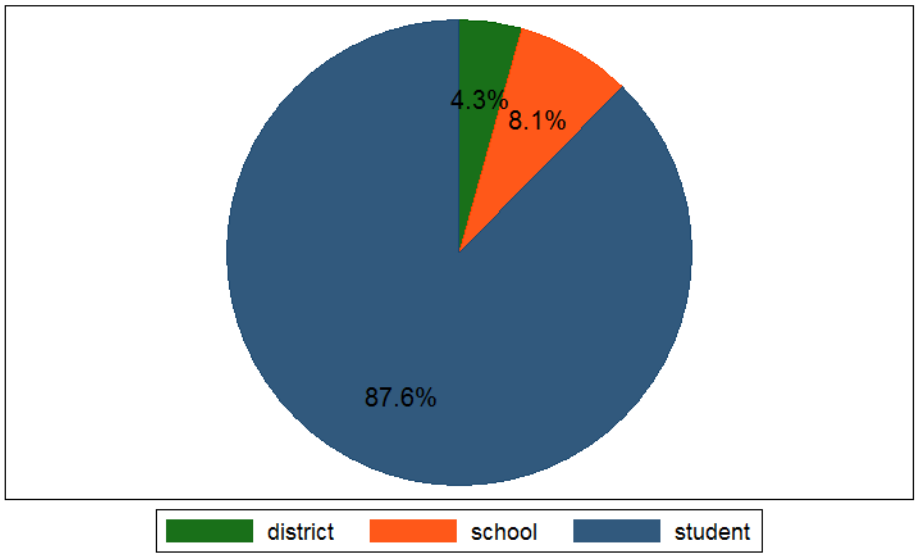
Table 1. **Means and Standard Deviation of PALS Subscales and Total Score**

	mean	standard deviation	observations
K Alphabet Recognition - Lowercase	20.60	6.71	173,840
K Concept of Word - Total	9.40	6.79	173,805
K Group Beginning Sound Awareness	8.00	2.62	173,784
K Group Rhyme Awareness	8.30	2.60	173,796
K Letter Sounds	15.20	7.32	173,824
K Spelling - Total Score	9.40	6.12	173,808
K summed score based on group test	64.20	24.03	173,764

Variation in Fall Kindergarten Literacy across Schools and Districts

Figure 1 shows the share of variation in PALS fall Kindergarten scores at different levels of aggregation. The large majority of variation in reading readiness occurs within rather than between schools (about 88%). Around 8% of the variation in reading readiness is among schools (i.e., differences in school averages) and 4% among districts (i.e., differences in district averages). By and large, these distributions suggest that schools across the state confront a similarly varied pool of entering students in terms of initial literacy skills.

***Figure 1*. Share of Variation in PALS Fall Kindergarten Scores within Schools, across Schools, and across Districts**



PALS total scores, 2014-2016 (n=170,805)

Accounting for Variation in Kindergarten Literacy Skills

In order to describe differences in school readiness across groups of students we estimated a statistical model predicting fall Kindergarten literacy. We use this model to explore differences in Kindergarten literacy among students by student background, school, and school district composition. Student measures include race/ethnicity, disability status, English language learner status, and three measures of child hardship. First, following Michelmore and Dynarski (2016), we use the percentage of observed years that a student is FRL-eligible as a proxy for economic hardship. Second, we include the natural log of the number of days a child is absent in Kindergarten to proxy child health, family instability, and other things outside of school that may inhibit child development. Finally, we include a measure of whether or not the child moved during Kindergarten. These three measures of economic hardship occur subsequent to the PALS Kindergarten assessment and serve as proxies for longer term disadvantage.

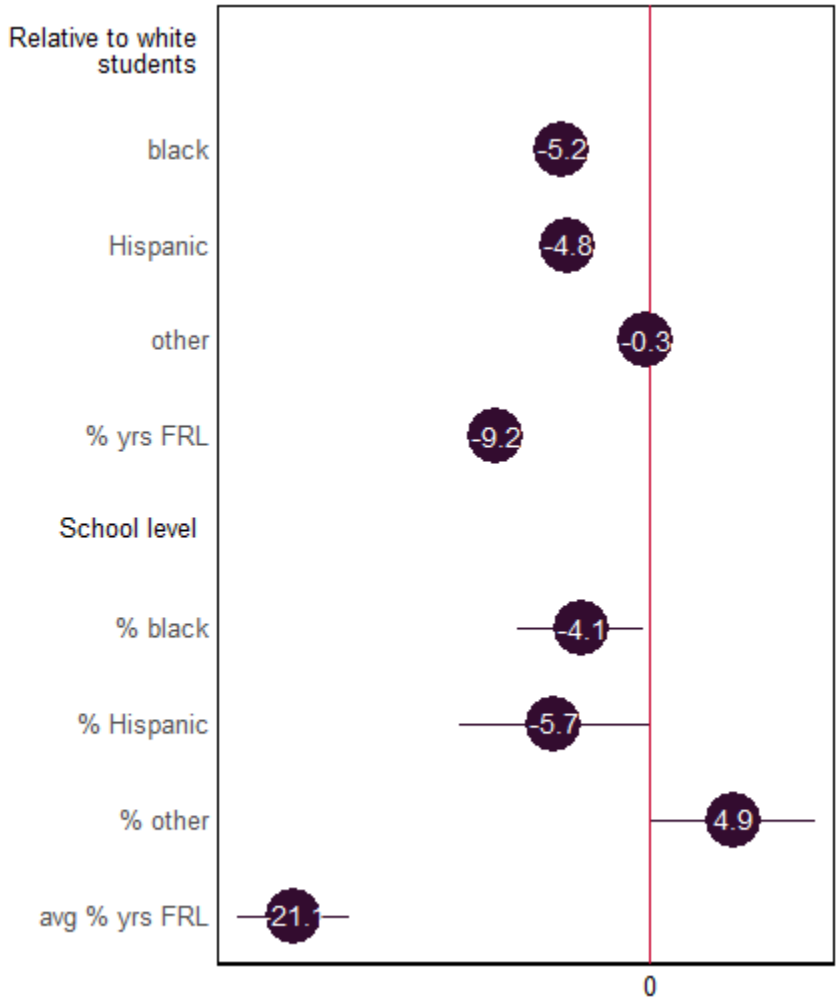
Measures of school context are simply means of student measures. District measures, on the other hand, are based on the American Community Survey and refer to the population of adults with school-aged children. District measures include the natural log of median household income, the parental employment rate, and the share of parents with at least a bachelor's degree.

Racial/ethnic Inequality in School Readiness

Figure 2 plots the relationships among child race/ethnicity, economic disadvantage, school racial ethnic composition, school economic disadvantage, and fall Kindergarten PALS score, adjusting for other differences among students, schools, and districts. Each circle reflects the average difference in scores of some racial/ethnic group relative to non-Hispanic White students in the case of race/ethnicity or the difference between children consistently FRL-eligible versus

those never eligible. The top half of the figure shows average differences within schools and the bottom half average differences among schools.

***Figure 2*. Inequality in Early Literacy Skills as Measured by PALS**



African American students score on average a little more than five points lower than non-Hispanic White students (about a fifth of a standard deviation), holding constant disability status, English language learner status, FRL eligibility, absenteeism, and residential mobility. Latino children begin Kindergarten about 4.8 points behind their non-Hispanic White peers. Finally, children consistently eligible for FRL score nine points, just over a third of a standard deviation, lower on the fall Kindergarten literacy screener than children never eligible for FRL. These differences are additive, meaning that a consistently economically disadvantaged child of color would be expected to score approximately 14 points below a non-Hispanic White child who never qualifies for FRL.

School segregation by race/ethnicity and, to a lesser extent, FRL eligibility further exacerbates between-group differences in early literacy skills, as the share of students who are

African American or Hispanic (or eligible for FRL) at a school is associated with lower levels of literacy skills among entering students. Because children are assessed in the early fall of Kindergarten, it is unlikely these differences are at all attributable to schools. Rather, they reflect residential segregation by race/ethnicity and family income. The contribution of school racial and ethnic segregation to Black/White disparities is a function of the racial composition of the school attended by the typical White child (3% African American), the typical Black child (55% African American), and the association between school percent Black and PALS scores (-4.1 points)—a difference of just over two points. Segregation between Hispanic children and non-Hispanic White children is less extreme, with the typical Hispanic child attending a school that is 35% Hispanic compared to a typical White child attending a school that is 8% Hispanic. This translates into a one-point difference in average scores on PALS.

Children also attend schools that vary widely by FRL eligibility, with African American students attending schools with roughly double the share of children eligible for FRL (75%) as White children (39%), on average. Because of the magnitude of the coefficient on FRL eligibility (-21), this disparity adds about 8 points to achievement disparities between the typical African American and non-Hispanic White child. Notably, the Black-White gap in the share of children at a school who are eligible for FRL (36 percentage points) is substantially larger than the gap between FRL eligible children in the share of children at a school who are FRL eligible (23 percentage points). The same is true for Hispanic children, who attend schools in which 33% more children are eligible for FRL than non-Hispanic White children, on average. This contributes about seven points to the expected difference in the literacy skills of Hispanic and non-Hispanic White Kindergarteners. Economic segregation in Wisconsin tracks race more closely than it does poverty. Full results of these models are available in Table A–2 in the Appendix.

Beyond the Mean: Group Differences in Literacy Skills among More and Less Prepared Children

While the mean differences discussed above are informative, they may mask differences of varying magnitudes across the distributions of these groups. For example, a mean difference of 8 could mask a difference of 15 at the lower end of the score distributions of two groups and 3 at the higher ends of those distributions of literacy skills. In substantive terms, this means that group differences in PALS scores among those children with the strongest pre-literacy skill may be appreciably smaller than group differences among children with the least develop pre-literacy skills. Such a pattern might suggest redoubling efforts to bring children at the lower end of the distribution up to speed. The graphs in Figures 3 and 4 illustrate differences in PALS–K summed scores across race and FRL eligibility status by centiles. These data are from PALS–K fall, years 2014 through 2016.

Figure 3 presents the difference in the PALS scores across percentiles by race, with White students as the reference group. Note that these figures reflect the observed distributions of PALS scores; they are not statistically adjusted for other differences among students, schools, or districts, as was the case in Figure 2 (above). Figure 3 shows that the gap in early literacy skills

is greater at the lower percentiles and narrows at the higher percentiles. At the 20th percentile, Hispanic students exhibit the lowest score compared to Whites (a difference of about 22 points, almost a full standard deviation). This finding is partly due to the language barriers that many Hispanic students face in entering an English-speaking classroom. Black students exhibit a slightly smaller gap in comparison to Whites at the 20th percentile, with a difference of about 16 points (2/3 of a standard deviation). However, the difference between Black and Hispanic scores narrows across percentiles. At the median, Hispanic students exhibit approximately a 17-point gap in scores compared to White students. Black students at the median exhibit approximately a 12-point gap.

***Figure 3*. Racial/Ethnic Differences in PALS Fall Kindergarten Scores**

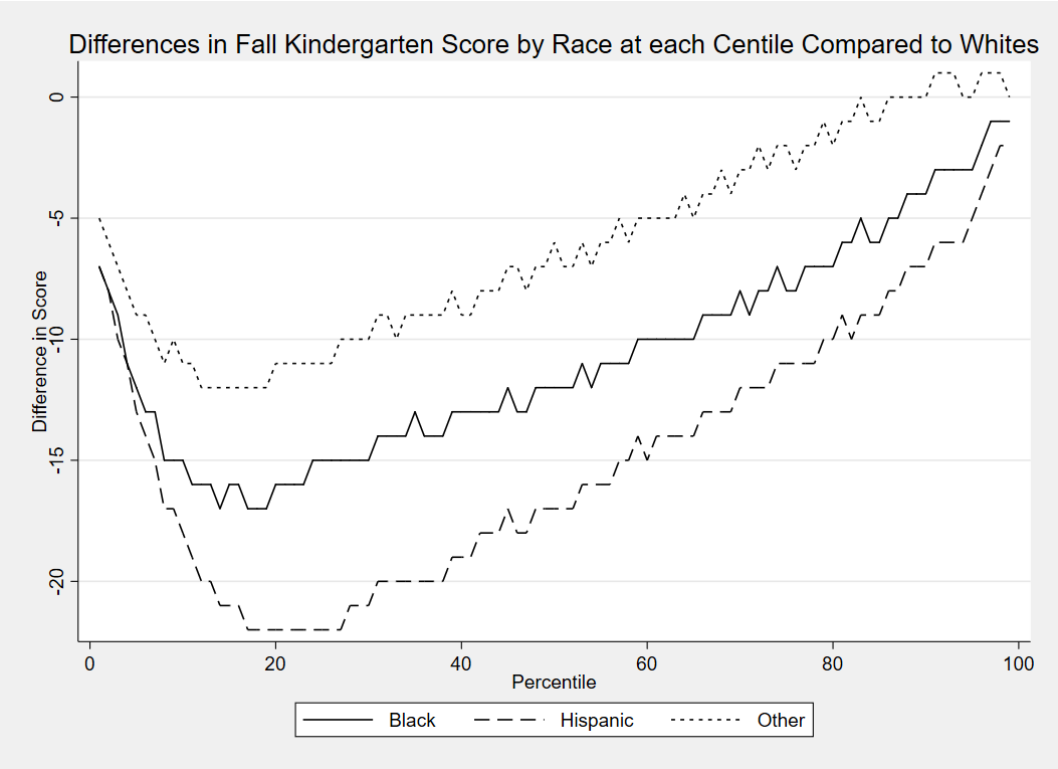
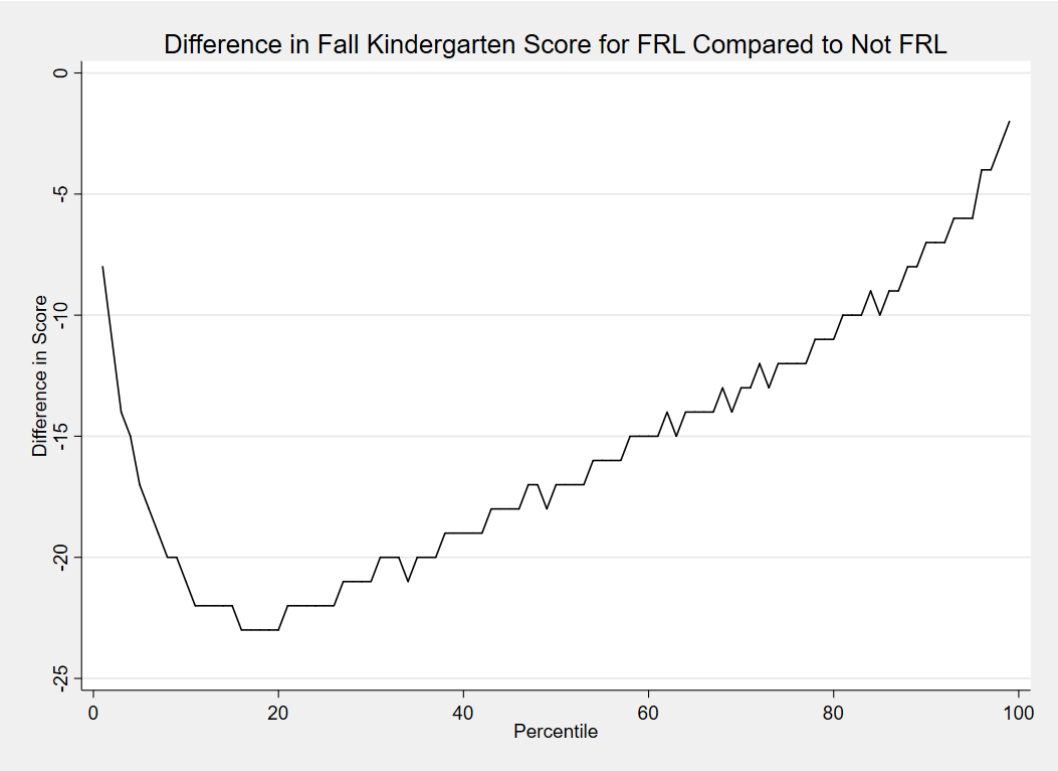


Figure 4 presents the difference in summed scores across percentiles by FRL eligibility. The difference between students that are FRL eligible and students that are not eligible is greatest at the 20th percentile, where students eligible for FRL have scores that are a little over 20 points lower than students who are not eligible. Similar to the pattern we see in Figure 2, this gap slowly narrows as we go up in percentiles. At the 50th percentile, the gap in scores is about 17 points and at the 80th percentile about 11 points.

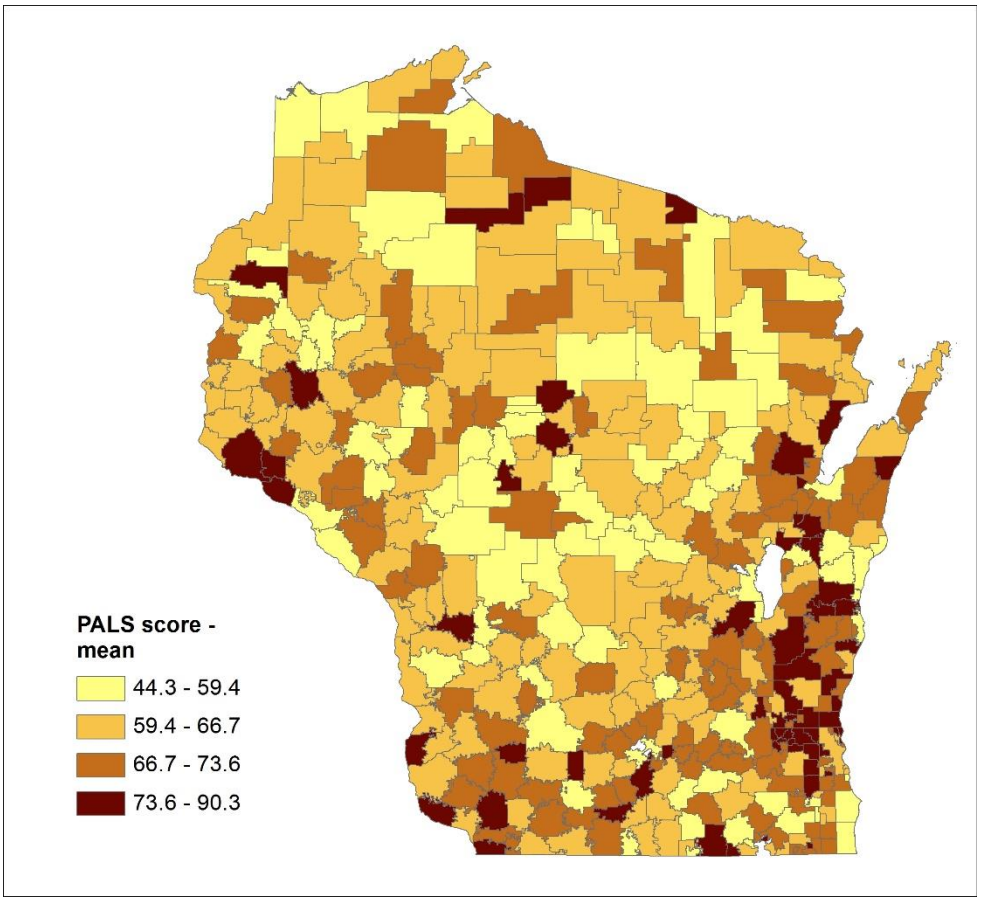
***Figure 4*. Economic Differences in PALS Fall Kindergarten Scores**



Spatial Variation in Kindergarten literacy

Although relatively little of the variation in PALS scores exists at the district level, variation in the concentration of students as a function of family resources, English language learner status, and race/ethnicity, among other factors, contribute to spatial variation in both average levels of literacy and inequality in literacy among children entering Kindergarten in Wisconsin. Figure 5 shows the average PALS scores by school district among children entering Kindergarten between 2014 and 2016.

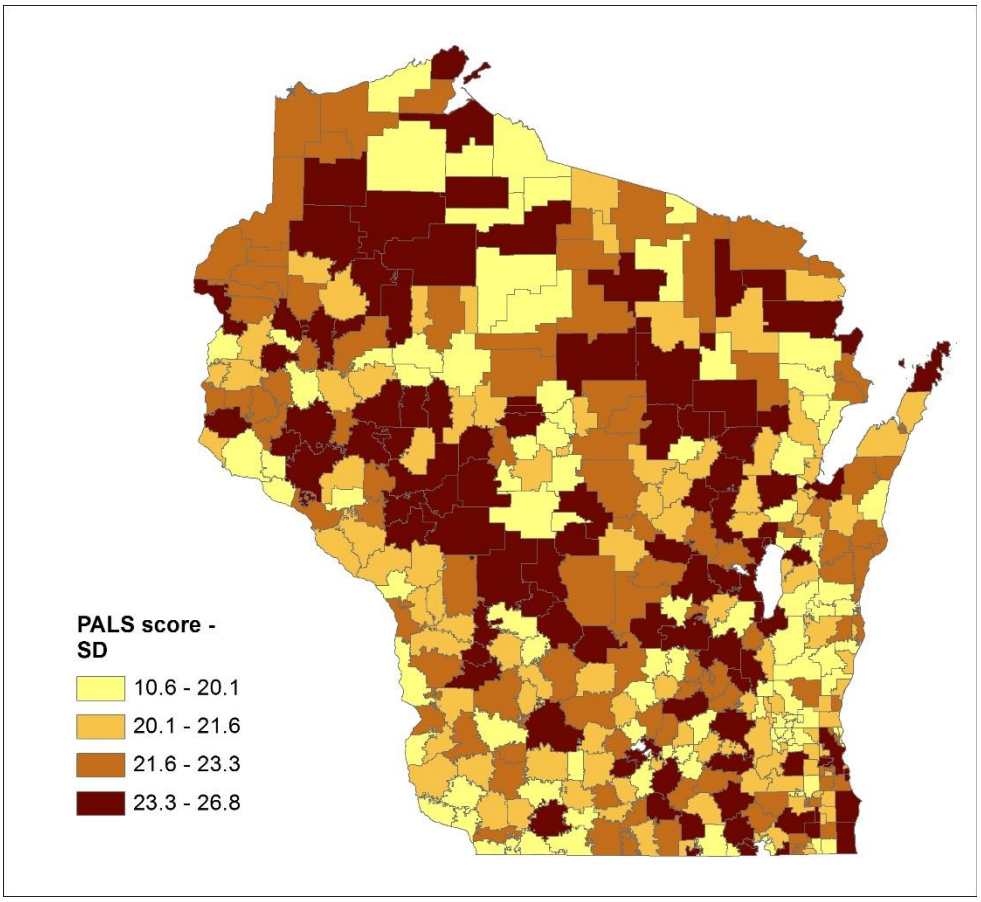
***Figure 5*. Mean Scores on Fall K PALS 2014–2016**



Some of the areas with the greatest levels of student literacy at school entry are clustered around the Milwaukee suburbs, the southwest corner of the state, and some districts in the western part of the state surrounding River Falls. Conversely, children in the areas around the Pittsville and Port Edwards school districts in the middle of the state have relatively low average levels of literacy skills upon school entry.

Inequality in literacy skills at Kindergarten entry, as measured by the standard deviation on PALS–K scores, also varies across the state, as shown in Figure 6. The areas around the Pittsville and Port Edwards school districts have among the larger levels of inequality in school readiness, while those to the east of Fond du Lac have among the lowest levels of inequality. Geographic dispersion in both average levels of fall Kindergarten literacy skills, and inequalities in those skills, may offer educators and policy makers further insights into how to help children get to Kindergarten ready to succeed in school.

***Figure 6*. Inequality in Fall Kindergarten Literacy Skills**



Conclusions

This brief descriptive report documents the demographic and spatial variation in the literacy skills children bring with them to Kindergarten, when many begin fulltime schooling. Consistent with national research, we find that children are far from equally ready to learn at the starting gate. Although we lack systematic achievement data between Kindergarten and third grade, when the Wisconsin Student Assessment System begins, it seems that much (but not all) of the inequality we observe later in elementary school has its origins *before* elementary school. Inequalities by race/ethnicity and parent income are pronounced, and are further exacerbated by residential segregation among students, leading to concentrations of disadvantage that vary among schools and among school districts.

We are unable to speak to the broader range of skills one should consider as part of "school readiness." Wisconsin does not mandate assessments of children's numeracy, social, or behavioral skills in Kindergarten. Districts may collect such information if they wish, of course, but they do not collect it in a uniform way or share it with DPI. The omission of social and behavioral skill measures may be less problematic for predicting later academic achievement, based on literature reviewed above, while the omission of measures early numeracy skills may be more important.

We believe that the key take-home from this report is simple: students differ in substantial and measurable ways in the literacy skills they bring to Kindergarten. Understanding and addressing these differences is a viable avenue for reducing disparities in academic achievement and achievement trajectories by race/ethnicity and family income later in the academic career. Although DPI and other agencies and organizations in Wisconsin are rightfully concerned about racial and ethnic disparities in academic outcomes, this report demonstrates that disparities are nor reducible to race; differences between those eligible and ineligible for free or reduced priced lunch are substantial. These differences surely understate differences in early literacy skills that are attributable to economic and social origins, as FRL eligibility is a very crude proxy for economic status (Harwell & LeBeau, 2010).

Our results suggests that the degree to which student literacy skills vary across schools conditional on student attributes is relatively modest; the extent to which they vary among districts is smaller still. Schools can play an important role in addressing inequalities among children that emerge prior to Kindergarten; the extent to which they do so is an open question. Other work from DPI shows that schools vary in their impacts on student learning in general and for subgroups of students that are disadvantaged from the start. These difference are important; other work by DPI (Wisconsin Department of Public Instruction, 2014) and work in which our team is currently engaged highlight successful strategies that Wisconsin educators employ to enhance the learning of economically disadvantaged students and students of color. We hope that this report helps make clear that, to a large degree, the disparities in achievement we see predate the experiences children have in our primary schools. If we want to live in a state where all children experience success in our schools we need to do a much better job of preparing them to learn before they enter Kindergarten.

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Appendix

Table A–1. **Description of Tasks for Each PALS–K Subtest**

Test	Task
Section I: Phonological Awareness	
Group Rhyme Awareness	With a group of no more than five students, the teacher presents a series of four pictures of four distinct objects and tells the students that they will be finding pictures that rhyme or sound alike. The teacher first lists aloud the name of each object. The teacher then asks students to circle the picture that rhymes with the first object. The teacher repeats this exercise with 10 different sets of pictures.
Group Beginning Sound Awareness	With a group of no more than five students, the teacher presents a series of four pictures of four distinct objects and tells the students that they will be listening for beginning sounds. The teacher first lists aloud the name of each object. The teacher then asks students to circle the picture that begins with the same letter as the first object. The teacher repeats this exercise with 10 different sets of pictures.
Individual Rhyme Awareness	This subtest is administered only if student scores below benchmark (5) on Group Rhyme Awareness. The task is exactly the same as the Group Rhyme Awareness Test. If student takes the individual test, only the individual score will be included in Summed Score.
Individual Beginning Sound Awareness	This subtest is administered only if student scores below benchmark (5) on Group Beginning Sound Awareness. The task is exactly the same as the Group Beginning Sound Awareness Test. If student takes the individual test, only the individual score will be included in Summed Score.
Section II: Alphabet Knowledge	
Alphabet Recognition: Lowercase	The student is presented with 26 lower-case letters on a sheet of paper. The teacher asks the student to point to each letter and name it. If the student does not know the letter, they simply move on to the next one.
Section III: Letter-Sound Knowledge	
Letter Sounds	The student is presented with 26 upper-case letters on a sheet of paper. The teacher asks the student to point to each letter and say the sound the letter makes. If the student does not know the letter, they simply move on to the next one.
Spelling	With a group of no more than five students, the teacher recites five words slowly, one by one, asking the students to spell each word. The students have access to an alphabet strip if they forget how to write a letter.
Section IV: Concept of Word	
Concept of Word: Pointing	First, the teacher helps students memorize a short rhyme. The teacher then presents the student with a book that has the rhyme written down. The teacher asks the student to touch each word in the book as they recite the entire rhyme alone.

Concept of Word: Word ID	The teacher then returns to the first page of the book and points to target words in each sentence. Target words are underlined and bolded. The teacher asks the student to name each target word.
Concept of Word: Word List	The teacher presents the student with a list of ten words from the rhyme and asks the student to point to each word and read it out loud.
Section V: Word Recognition in Isolation (optional)	
Preprimer Word List	The teacher presents each student with a list of words and asks the student to point to each word and read it out loud.
Primer Word List	The teacher presents each student with a list of words and asks the student to point to each word and read it out loud.
First-Grade Word List	The teacher presents each student with a list of words and asks the student to point to each word and read it out loud.

Table A–2. Regression Coefficients Predicting PALS Fall Kindergarten Summative Scores

	Full	School	Student
Race/ethnicity [white omitted]			
African American	-5.224***	-5.224***	-5.299***
	(0.250)	(0.250)	(0.246)
Hispanic	-4.840***	-4.840***	-4.887***
	(0.205)	(0.205)	(0.204)
Asian	-0.305	-0.305	-0.288
	(0.194)	(0.194)	(0.193)
Female	3.317***	3.317***	3.322***
	(0.100)	(0.100)	(0.100)
Disabled	-16.22***	-16.22***	-16.22***
	(0.154)	(0.154)	(0.154)
ELL	-10.19***	-10.19***	-10.20***
	(0.227)	(0.227)	(0.226)
% yrs FRL	-9.152***	-9.152***	-9.260***
	(0.119)	(0.119)	(0.119)
ln(days absent)	-2.654***	-2.654***	-2.655***
	(0.0584)	(0.0584)	(0.0582)
mobile	-5.231***	-5.231***	-5.116***
	(0.140)	(0.140)	(0.137)
School level			
% African American	-4.119**	-3.347*	
	(1.883)	(1.808)	
% Hispanic	-5.692**	-4.877*	
	(2.865)	(2.815)	
% Asian	4.951**	5.942**	
	(2.472)	(2.372)	
% Female	11.16***	11.28***	
	(3.833)	(3.831)	
% Disabled	-14.83***	-15.20***	
	(3.959)	(3.950)	
% ELL	-7.007**	-7.006**	
	(2.860)	(2.852)	
mean % yrs FRL	-21.13***	-22.18***	
	(1.689)	(1.439)	
mean ln(days absent)	-1.375**	-1.272*	
	(0.673)	(0.670)	
% mobile	-2.859***	-2.716***	
	(0.668)	(0.661)	

	Full	School	Student
District level			
ln(median hh inc)	-0.284		
	(1.761)		
% employed	-1.160		
	(4.542)		
% BA+	3.978		
	(3.287)		
Constant	77.81***	74.77***	77.31***
	(19.20)	(2.231)	(0.335)